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SOVIET LIFE

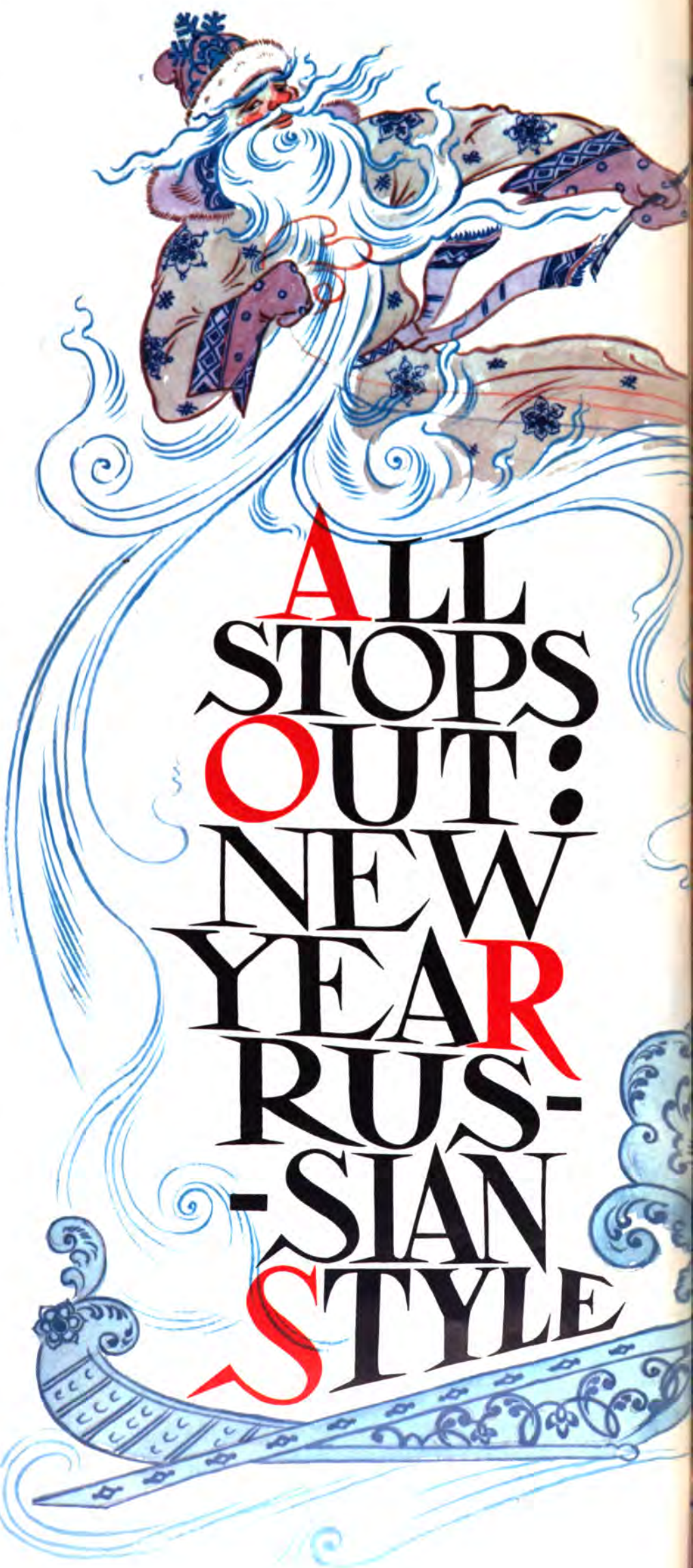
DIALOGUE WITH OUTER SPACE

HISTORY OF USA-USSR RELATIONS

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NEW YEAR RUSSIAN STYLE

By Mikhail Andrasha
Drawing by Boris Kukilev



ALL STOPS OUT: NEW YEAR RUSSIAN STYLE

AT THE STROKE OF TWELVE on New Year's Eve the whole multi-million polyglot population of the Soviet Union ushers out the old year. Since our territory spans eleven time zones, we welcome in the New Year eleven times. Muscovites or Leningraders lunching at two o'clock in the afternoon are still busy with plans for the party that night, but on distant Chukotka, glasses are already being lifted to a "Happy New Year!"

The Soviet New Year's celebration is still very young. The holiday has inherited something from Christmas and something from the pagan rites of the ancient Slavs, who worshipped the sun god. New Year's Eve is mostly a family occasion and for parties with close friends. In ancient times the Russian New Year was celebrated in March, at the time of the spring equinox. This tradition was followed to the middle of the fourteenth century. Later, with time reckoned from the "creation of the world," the New Year was rung in on the first of September. A decree of Peter the Great established an official date for the New Year, and since 1700 it has been celebrated on the first of January.

The Russian New Year's feast follows a pleasant custom of the ancient Slavs—that guests must be wined and dined to the bursting point. The groaning board is no figure of speech; it is piled high with delicacies that testify to the culinary talents of the hostess, with pickled and marinated mushrooms and vegetables, preserved fruit and berries, and jams and jellies without which no holiday is complete. The host is there to nudge your elbow, to help you lift "just another spoonful."

By the end of December the ancient Slavs had finished their winter labors and had begun to prepare for the spring. So that the winter holiday was one of their gayest festivals. When old Russia converted to Christianity in the year 988, the winter festival merged with Christmas.

As it neared, the Slavs would turn their houses inside out, cleaning every nook and cranny. A family that ate and drank well on the feast days, they believed, would have an abundance of food and drink the rest of the year.

They would sing special feast-day songs, *kolyadki*, carols addressed to those whom they wished well. Mummers went merrily from house to house. During the festival the Slav wore an animal skin over his shoulders so the "evil powers" would be unable to identify him and disease would therefore not visit his home nor pestilence his cattle. And, of course, no winter feast days, or, later, the yuletide, could do without fortune telling.

We still find traces of those old games and charms. On New Year's Eve Russian village streets are alive with gay laughter and fun. Young people in disguise run from house to house singing Limericks, congratulating the inhabitants and wishing them happiness in the new year. Children are driven around the village in troikas. This is the time of year when the farmer slaughters a fat porker, a calf or a lamb. He cooks, smokes, bakes, carries his home-brewed fruit liqueurs and cordials up from the cellar.

Preparations get under way for a sumptuous feast.

Down with Tradition

In the twenties, when the Civil War ended, the young fighters returning to their homes began to take stock of the ancient customs of their people. In the throes of revolutionary fervor, they lumped all religious ceremonies together—and they certainly had historical justification for their feeling—with the old world of oppression they had fought and overthrown. They discarded all the hallowed traditions that were in any way related to the church.

(Continued on page 4)



Shovelfuls of imagination can make a creditable snowman.



Streets and store fronts are now ablaze with fiery lights.



Moscow's New Year tree in its place of honor in the Kremlin.

CANDLE GLIMMERING FIRE-WORKING AND LAUGH BURSTING ON THE YEAR'S FIRST NIGHT



Georgievsky Hall in the Kremlin is all a'glitter to welcome in the New Year. The welcomers, by tradition, include Grandfather Frost and Snow Maiden, bunnies and, of course, children.



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Front Cover: New Year's Eve glitter on Moscow's Gorky Street. Photograph by Nikolai Rakhmanov.

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(Continued from Cover 2)

To celebrate the Russian *Masslenitsa* or New Year was looked upon as anachronistic or, even worse, anti-Soviet. The New Year's tree was considered a throwback to bourgeois ideology. Church christenings were replaced in the first years after the Revolution by a civil ceremony called *Oktyabrini* in honor of the month of October (Old Style calendar), when the Revolution took place.

This verbatim record of an *Oktyabrini* ceremony is an adequate reflection of the frame of mind of the young reformers. The occasion was the naming of the daughter of a Urals worker, Gorshkov.

"Hereby we baptize you using neither cross, water nor prayer—legacies of slavery and ignorance—but with our red flag of combat and labor, riddled by bullets, torn by a bayonet. . . . When your mind matures, read these words, take your place in the ranks of fighters, destroy the last remnants of slavery and suffering under which mankind languished for centuries."

One must understand the feelings that prompted these "red godfathers" and not



Twelve! And glasses are lifted to a good, happy and peaceful year for all people the world over.

reproach them for having renounced the overwhelming majority of customs that, quite naturally, have a religious origin.

Fancying themselves dyed-in-the-wool internationalists, young parents gave their children such names as Marat, Robespierre, Marx, Socrates, Homer. Girls were named in honor of Lenin—Lenina—and boys—Vladlen (an abbreviation of Vladimir Lenin). Technical progress, on which so many hopes were placed, was also reflected in names given during these now remote years of our youth. A certain amateur radio fan in Pskov, an ancient Russian town where parents had from time immemorial taken names from the Church calendar, called his daughter Antenna, and his son Detector—detector wireless sets were in vogue at the time. Among first graders at school you might come upon Hypotenuse wearing bows in her pigtails or Transmission in a starched pinafore. Today these names are funny, but then they mirrored the general cultural awakening, the mass attraction to science!

Asceticism, simplicity of address and faithful comradeship became the common way of life.

When my father, in his youth a nickel-plater at the Donetsk works, married my mother (like many other women, she had mastered a "masculine" profession in 1930 and was a chauffeur), he sent his parents this laconic notification: "Registered marriage tenth of May. Wife's name is Alexandra."

These notifications were often misspelled, but who paid any attention to such things in those days?

People kept away from ritual festivities and their ancient beauty and symbolism. Gay wedding parties, best men and bridesmaids, wedding gifts, driving in horse-drawn vehicles? Oh, how all this reminded the young revolutionary of the old world he had rejected!

The End of an Old Argument

The asceticism of those times was not only the product of a theory—an amalgam of many of the ideas that governed the inhabitants of that *City of the Sun (Civitas Solis),* created by the imagination of Tommaso Campanella—it also had its economic realities. The working-class youth who had inherited nothing but a war-ravaged land, the college student who lived in a crowded dormitory and literally fed on his own enthusiasm—which of them could afford the luxury of festive banquets?

In those days guests were not invited to have cocktails or coffee but to talk, the heated and uncompromising arguments of idealists who had begun to make a reality of the age-old dream of a happy life for everyone.

And yet there were many middle-aged and older people among the intellectuals and workers who even then insisted on observing customs and traditions. In 1926 Vikenti Veresayev, a doctor who had become a writer, addressed a public gathering on the subject, "Concerning the Artistic Embellishment of Everyday Life," and he later wrote the book *Old and New Ceremonies.*

Veresayev, appealing to people to preserve the old beauty while creating the new and not to reject the very dearly earned human experience, found many followers. In 1935, on the insistence of the youth organizations, the ban on New Year's celebration was lifted. The fir tree, with its traditional Grandfather Frost and Snow Maiden, gifts and merriment, was officially returned to children and grownups alike. A well-informed public sees no conflict between Soviet culture and the legacy of the past.

New civil ceremonies from the western republics of Estonia, Latvia and Lithuania are spreading throughout the country—modern nonreligious confirmations, coming-of-age ceremonies, civil baptisms, ceremonies in Wedding Palaces.

From the Central Asian republics the traditions of initiating young apprentices to the status of skilled worker, harvest festivals, contests in singing and improvisation are spreading to the North. Estonian traditions have become the property of Russians, Uzbeks, Byelorussians and Ukrainians. Bye-

lorussian and Ukrainian traditions are absorbed by Estonians and Latvians.

Time does its work, and the long argument has come to an end—we have readmitted what was gracious and beneficent into our lives. And one of the best illustrations of this is the renewed tradition of celebrating the advent of the New Year.

New Year's Table

Tradition requires that about twenty minutes before midnight on December 31 the old year be remembered with a good or bad word, that we "drink a drop to the old year" and "see the old year out." And during this leave-taking, it is perfectly good manners to take stock of the festive table and begin the business at hand.

Here stands a whole assortment of salads —from the simple vinaigrette that served us so faithfully in the war years, to Stolychni, with its meat, hard-boiled eggs, green peas, apples and other things. There are also crab, radish, beet and fish salads garnished with fresh tomatoes and cucumbers on the table.

Meanwhile a goose, duck, or turkey lie in wait "backstage," in the oven. Offerings may include young broiled chicken-*tabaka,* a Georgian dish-or Caucasian *Shashlyk* (shish kebab). This is the indispensable "hot dish" that follows the salads, sausages, fish and other cold hors d'oeuvres. A firmly established ritual demands first, second and third courses. Then there are the numerous beverages, from the indispensable New Year's champagne to ten-year-old cognacs, vodkas and cordials. Nor does anyone forget the homemade pickles and marinated preserves that are all the rage now.

Sometimes a toastmaster, *tamada,* sits at the head of the table. This tradition comes from the Caucasus. He is elected amidst general merriment. A *tamada* must have three qualities: a good knowledge of all present and of their absent relatives, the ability to make witty toasts and, what is most important, a bottomless capacity and a good head. Whenever a guest is toasted, the toastmaster must drink with him—bottoms up! The difficulty of his job may be gathered from a glance around the table—20 to 30 people! He has to be Bacchus himself to stand erect, let alone be witty, by the thirtieth toast.

When the guests have had their fill, a short intermission is permissible for dancing, singing and so on; then pies and cakes prepared according to the endless "special" recipes of the hostess appear on the table, followed by various candies, chocolates, ice cream, coffee, tea, nuts and fruits. By this time, when the conversation has already turned to the latest adversities in ice hockey or to speculation about civilizations on other planets, the friendly mixed company tends to break up into small groups: first, male and female, according to interests, then by professions. All are united again by a comic lottery, when the grandfather of three grown-up grandsons may win a set of diapers and pacifiers; or somebody sits down at the piano, or picks up an accordion or a guitar. Songs range from old-time ballads, to folk and student songs, to the stylish compositions of modern bards.

"Have some of this, Ivan Ivanych," urges the hostess. "You haven't even sampled my pie!"

The fact that Ivan Ivanych does not respond to her request, but sits drowsily, with a very well-fed smile on his face, makes the hostess truly happy. Now everybody has had as much as he can hold!

The feast described has its variations, of course, as do the people around the table. Usually the merriment goes on until six or seven in the morning, and sometimes, having found a place to lie down and catch a few hours of sleep, the guests will sit down to eat again at noon, on the first day of the new year. Down South, in Armenia or Georgia, the feast may continue for a day, or two, or three, attracting more and more new guests. It seems to me, therefore, that the recent tendency to set simpler tables or to have just a stand-up reception with cocktails and canapés will not take hold in our country. We are too fond of *kaif*—that Oriental word meaning easy talk with pleasant companions around a well-laid table.

For a Joyful New Year

Skladchina is a Russian Dutch treat. People who work together, students or simply a group of friends pool funds for a party.

This is the procedure:

About a week before the party several people, married or single, contribute a fixed sum. A steering committee is elected—the best cooks and provisioners. The men buy the food, gifts, fir tree and decorations, and bring rare records and tape recordings; the women do the cooking and baking. One member of the pool contributes his apartment, where the group gathers three hours or so before the New Year arrives. A *skladchina* often brings together people who have never met before. New friendships may go on for years afterward, the happy ones ending, not infrequently, in marriage.

I live in Moscow, not far from the historical Poklonnaya Gora. Napoleon climbed this hill and then waited in vain for a delegation of Muscovites with the keys to the city.

A few hours before midnight our courtyard becomes a scene of intense activity. Human silhouettes dart here and there in the hazy darkness. Some neighbors carrying pies and cakes are leaving for a party. Others are waiting for their guests to arrive.

At two o'clock in the morning the whole house is alive with singing and dancing. A voice in the courtyard is raised in a pleasant rural ditty. Someone pretending to be a masked mummer, his head covered with a sheepskin coat turned inside out, runs about, scaring young women and girls. A dance is in full swing around the New Year's tree brought from the woods and placed in the middle of the courtyard. It is now ablaze with garlands of electric lights and covered with toys. The merrymaking has flowed out of the apartments into the courtyard, where the frost has brought the mercury down to four degrees below zero.

During these same small hours of the night, campfires are blazing in the suburban woods, and around them sit people dressed for the outdoors. They prefer snow, frost and a tall fir tree in the forest to restaurants, *skladchinas* or New Year's celebrations in clubs or houses of culture. Packing food into knapsacks, taking their skis, transistor radios and portable tape recorders, they set out for the wide open spaces in the early evening. Making themselves comfortable around a big tree, they light a campfire and set up their tents. At these parties one hears not only songs but salvos shot into the air from hunting rifles.

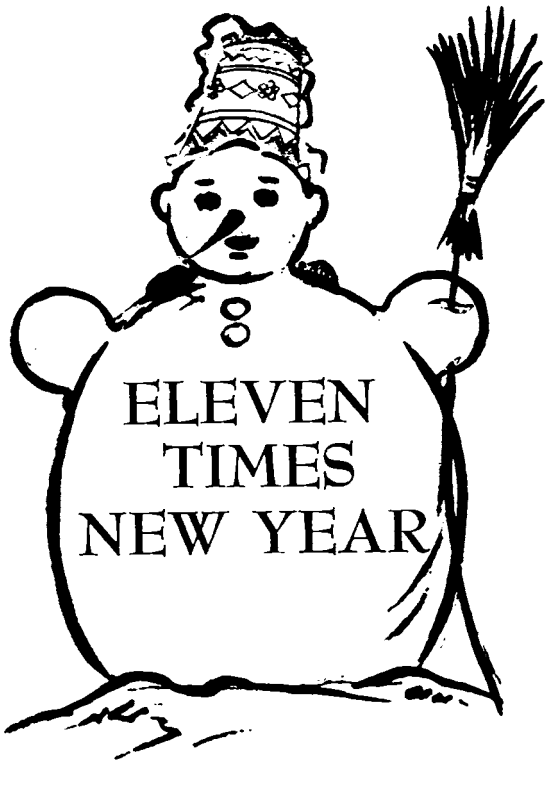
Many stories are told about these jaunts —how so and so caught a huge fish in a nearby river or lake, tugging it out from under the ice, and how wild rabbits, of their own accord, ran into a rifle charge, and how all this fish and meat was then and there wonderfully prepared over the campfire. Really tall tales!

The second of January the morning papers carry items about the New Year's celebration on an ice flow carrying drifting polar stations in the Arctic Ocean and on how the New Year was greeted in the Antarctic and at a high-altitude meteorological station in the Pamirs.

However, let us leave these northern and southern latitudes for a Moscow club.

The clubhouses of members of the creative professions—actors, architects, journalists, composers, writers—are "closed." To enter the Writer's Club (or, as it is called, the House of Literati) one must have a membership card of the USSR Union of Writers; for the Journalist's Club one must have a press card. But, practically speaking, it is not at all difficult for the nonprofessional writer or composer to get into these

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NEW YEAR'S OLD CUISINE

Good food and its preparation is a long-standing Russian tradition. In order to display Russian cuisine in its proper setting, one of the monastery buildings of Suzdal, a town famous for its ancient Russian buildings, was turned into a restaurant. There the interior decorations and menu carry the diner back to the time of Ivan the Terrible and Peter the Great.

The *Table d'Hôte* includes, besides the restaurant's main dishes of *Salade à la Vladimir, Rôti à la Suzdal* (meat stewed in beer) and Russian jellied hors d'oeuvres—consisting of slices of sausage, tongue and beef, cranberries andcelery (see photos right and below right), a number of dishes that are hundreds of years old. One of these is *pokhlyobka* (photo below left), a soup which is made from the following recipe:

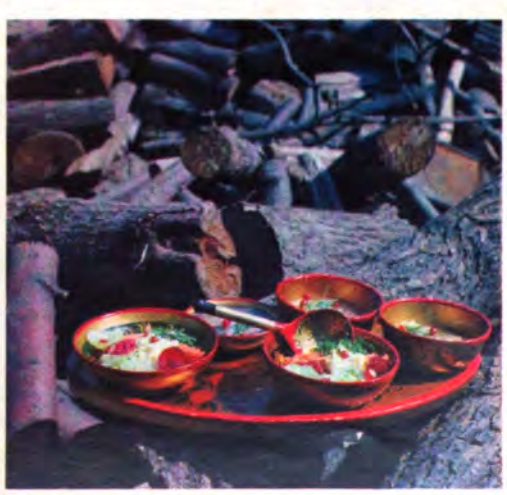
Place chopped chicken, veal (or pork) and ham (one piece per portion) in a clay jug or pot, pour hot meat bouillon over it and boil for 3-5 minutes. Add half-cooked mushrooms and potatoes. Boil for 20 minutes. Now add parsnips and carrots fried in butter and spices and cook till ready. Before serving the soup, garnish it with tomatoes, chopped garlic, sour cream and parsley.

A historical drink is honey kvass or *medovukha* (top photo), a beverage highly favored by Russians of yore.

To make it, place 3¼ ounces of raisins and a sliced lemon in a little wooden tub and pour 14 ounces of treacle (molasses) over the lot. Add 4 to 5 quarts of boiling water and cool. To a quarter of a tea cup of diluted yeast add a tablespoon of flour and pour the mixture into the cooled kvass. The next day you can add another 1½ pints of cold water. When the raisins and lemon slices appear on the surface, remove them and pour the kvass into bottles. Cork them well and place in a refrigerator.

If you want to know what Ivan the Terrible and Peter the Great ate, dine at the Pogrebok (cellar) Restaurant in Suzdal or make the above *pokhlyobka* and kvass at home.





RUSSIAN COOKING – A POEM IN PROSE







What will the real Grandfather Frost bring me? And what will this toy one bring for my dolls?

FOR CHILDREN: "HAPPY NEW YEAR" TEN DAYS RUNNING

(Continued from page 5)

clubs. "This comrade is with me" is the phrase that usually takes the place of a pass. Only from time to time, when it is suddenly discovered that the influx of guests has left no space for members, does the management get strict.

The program of the New Year's gala at such a club is diversified, and includes everything from friendly talk at a table in the club's restaurant to jesting competitions in rhyming. But nothing—be it a new film or a star-spangled variety show or concert—is esteemed as highly as the traditional *kapustnik* (from the Russian word *kapusta*—cabbage).

A *kapustnik* is an hour or hour-and-a-half program of sketches written and performed, as a rule, by the participants in the New Year's entertainment. A mélange of satirical epigrams, parodies, takeoffs, and couplets on topical subjects, it is usually incomprehensible to the uninitiated. The targets for laughter are comrades in arms. In the Writer's Club they are the authors of books that have become conversation pieces, "fashionable" poets, editors in chief of literary journals, members of the club board. The subject for the spoof may be a pretentious style, abstruse writing, inane criticism, anything and everything imaginable, in a word—a speaking out of minds!

It has become customary for the *kapustnik* hits staged at the Club of the Theatrical Society or the Writer's Club to be repeated at other clubs, attracting full houses. The Central House of Journalists in Moscow has its permanent *kapustnik* group, known as The Imposing and Correcting Ensemble, directed by a professional actor. Repertory theaters and colleges also get up *kapustniks*. They are traditional amateur performances, whether shown at the clubs of the creative professions or at the House of Culture of the Railroad Transport Workers. The Moscow Theater of Satire originated from one of the *kapustniks* composed and performed by a group of Moscow Art Theater actors.

After all the toasts to the coming year and to the health of all present, and after a long dance session comes the *pièce de résistance*—the New Year's *kapsustnik*.

Grandfather Frost and Snow Maiden

Millions of Soviet children, awakening on New Year's Day, find gifts under their festive trees. Who put them there? Mommy? Daddy? Grandfather? Grandmother?

"Grandfather Frost brought them for you during the night!"

Modern children, many of their former pastimes replaced by television programs, are not overly gullible. And yet the belief in Grandfather Frost and his assistant Snow Maiden, who go from house to house throughout the night and bring gifts to everybody, is as alive in the child's mind as his belief in spaceships.

Last year the children's newspaper *Pionerskaya Pravda* published several New Year's letters addressed to Grandfather Frost.

"There is a boy called Vova in our class," wrote Tanya G., "but just imagine—I have never even spoken to him. At first I paid no attention to him, and he paid none to me. And then he began looking at me all the time, and I at him. As soon as I would turn my head toward him, he would blush and turn away. One day during a Russian language lesson, one of our classmates yelled: 'Look! Our shrinking violet has fallen in love with Tanechka!' Vova turned as white as chalk and ran out of the room, and I began to cry. My girl friends said: 'Big deal! Why are you getting so emotional over such a small thing?' Dear Gandfather Frost! What shall I do?"

"Where can we find a girl with pigtails?" asked the boys of class 7B of a school in Saratov. "Grandfather Frost, the New Year is approaching, and we need a Snow Maiden. There isn't a single girl with braids in our entire school. Snow Maiden has long, thick braids." It must be pointed out that Snow Maiden is the personification of Russian winter. The folk tales have it that she melts very quickly under the sun's rays.

The New Year's holidays coincide with the school winter vacation that ends January 10. A whole commercial entertainment industry blossoms for the occasion. Fir trees are shipped beforehand from the northern forests to all the southern towns, for New Year's festivities are unthinkable without a tree. Factories and commercial firms prepare millions of bright boxes and packages of sweets. Authors and composers write plays and sketches for children. Their subjects are Russian folk tales, space flights and all manner of adventures befalling favorite literary heroes.

Various organizations, institutions and industrial enterprises or, rather, their trade union organizations, invite professional actors to play the parts of Grandfather Frost and Snow Maiden. They send them to the homes of their workers, so that early in the morning a child opens the door on a living Grandfather Frost and a real Snow Maiden with thick, long braids. After they have introduced themselves and all the congratulations and presents have been delivered, the small host is asked to sing a song or recite a poem. Fairy-tale chariots drive through the streets of our cities during the winter holidays carrying Grandfather Frosts and Snow Maidens.

The well-known actor Alexander Khvylya holds the post of Chief Grandfather Frost. This is the fifteenth year in succession that he has played the part at the traditional New Year's Tree entertainment in the Kremlin. He never has a double, but Snow Maiden, confirming the adage about female inconstancy, is new every year. The Kremlin's Grandfather Frost is familiar to children in the farthest corners of the country. They know his voice, see him on television screens and send him letters addressed "Grandfather Frost, the Kremlin, Moscow."

New Year's Eve 1968, Grandfather Frost and Snow Maiden begin their trip across our country from Ratmanov Island (Big Diomede) in Bering Strait. An hour later they are already on the mainland, among the gold miners and hunters. A bit later they are seen by the inhabitants of Ulan-Ude, Irkutsk and Krasnoyarsk. They visit Tashkent, Tbilisi, Moscow, Riga, Kaliningrad on the Baltic Sea and then leave the territory of the Soviet Union. They cover a fantastic distance, from east to west, about one-fourth the length of the equator. And at eleven different times Soviet people raise their glasses to a "Happy New Year!"

To All Our Readers:
The editorial board of Soviet Life
Magazine wishes you every
success and happiness in the coming year.
May 1969 be a year of peace
and good will. We would like to take this
opportunity to thank those who
have sent us suggestions and greetings.
Your interest is most welcome.
With very best wishes,

The Editors



TV picture of Colonel Beregovoi in the cabin of his spaceship.

THE SPACE EXPERIMENT

By ACADEMICIAN BORIS PETROV

PROGRESS in space technology today depends on man's more active participation both in testing spaceship systems and in devising methods of more facile maneuverability in outer space. Aerobatics is no longer considered extraordinary, but it will be remembered that it was unheard of in the early days of aviation.

Even with modern supersonic speeds, planes can get close enough to each other to carry out joint maneuvers. And what about orbital spaceships? They travel at speeds ten to twenty times those of supersonic planes, making it that much more difficult to carry out a joint maneuver. Only man in space can solve these problems.

The ability of spaceships to come within a short distance of each other ensures a considerably greater flexibility in carrying out the research and practical tasks of the flights and in rescuing a spaceship in distress. Before these problems are solved, the construction of big space stations that will remain in round-the-earth orbits for a long time is unthinkable. Such stations would make it possible to solve many scientific problems involved in space exploration and non-atmospheric astronomy as well as to carry on prolonged medical and biological experiments in space and make expeditions to other planets.

The orbiting of such stations in a fully assembled state presents tremendous difficulties. This would require titanic carrier rockets

with a huge initial weight. Indeed, it takes about 50 pounds of the carrier rocket's initial weight to put a one-pound payload into a round-the-earth orbit using a rocket burning chemical propellant. Even to orbit a spaceship with one or two cosmonauts on board, it is necessary to have rockets with an initial weight of several hundred tons. That is why one of the tasks of the space rocket technology of the future is to assemble space stations in orbit. Every block of such a station could be delivered to orbit by a separate carrier rocket.

To keep the orbital station working for a long time requires periodic staff renewal. That means landing a new shift and taking the relieved shift back to earth.

In a period of more than eleven years Soviet science and technology have already solved a number of problems. Just recall the high-precision injection into close orbits of spaceships Vostok-3 and Vostok-4, the creation of the maneuverable spacecraft of the Polyot type and the trying out of the structural elements of new spaceships on the satellites of the Cosmos series. The spaceships Vostok-3 and Vostok-4 were piloted by fliers-cosmonauts Andrian Nikolayev and Pavel Popovich, who were the first to carry out a formation flight in space.

We have also solved the most difficult problem of the automatic close-in and docking of two spaceships in orbit. Satellites Cosmos-186 and Cosmos-188 were put in close orbits and carried out the automatic close-in and docking successfully. After a three and a half hour flight in a docked state, they undocked at a comand from the earth, shifted to independent orbits and successfully landed in a preset area of our country. In the spring of 1967 Soviet scientists successfully repeated this experiment with the Cosmos-212 and Cosmos-213 satellites.

The experiment connected with the launching of spaceships Soyuz-2 and Soyuz-3 was aimed at further developing these systems. The cosmonaut tried out the manual control system, and, in particular, practiced the manual control of closing in two spaceships moving in close orbits. To carry out manual control under the complex conditions of space flight, the cosmonaut must receive information on the relative movement of his ship and of the ship he is drawing close to. At first he receives this information from the instruments of the radio system which measure the distance between the ships and their relative speeds. After that, when the second ship gets within his field of vision, he can control the close-in on the basis of visual information.

At this moment, it is necessary to control the movement of the center of the "active" spaceships' mass and to change its angular bearings. This is done by two central handles connected to the active spaceships' jet engines. Shifting one of them starts the jet engines which accelerate the ship or slow it down, while shifting the other turns the ship around the center of the mass.

After the orbiting of spaceship Soyuz-3 with flier-cosmonaut Hero of the Soviet Union Georgi Beregovoi on board, the distance between this ship and the ship Soyuz-2, put into a round-the-earth orbit on October 25, constituted several miles while the relative speed of their movement was about 55 feet per second.

The radio system of spaceship Soyuz-3 spotted spaceship Soyuz-2 in space, and then the process of the automatic close-in began. When the spaceships closed in to a distance of 650 feet, the cosmonaut took over the manual control. The further maneuvering and control of the close-in process was carried out manually. The distance between the ships was decreased according to calculations, and the speed of their relative movements was slowed to the necessary level—several tenths of a meter per second.

An important scientific and technical experiment has been carried out and valuable information has been obtained, making it possible to now solve a number of practical problems connected with the improvement of the maneuvering of spacecraft and the orbiting of space stations.

Courtesy of the newspaper Pravda







Leonid Brezhnev presenting the Honored Test Pilot medal in 1961.

Georgi Beregovoi with his wife Lidia and their son and daughter.

The cosmonaut is greeted by his mother and wife after his flight.

КВН — ВСЕМ!

КВН — ВСЕМ!

КВН: BRAIN AND W

By Albert Akselrod

ONCE A MONTH for the past seven years KVN has been lighting up Soviet television screens. A poll conducted by the magazine *Zhurnalist* voted it the most popular TV program in the country, with the possible exception of movies. What is KVN? It is short for *Klub Veselykh I Nakhodchivykh,* literally meaning Club of the Gay and Resourceful. The program is a kind of quiz contest; teams composed of young factory workers, engineers, doctors, physicists, poets and, of course, students engage in mental duels.

Each 11-man team—just like Association Football—represents a college, factory and now and again a whole town or city. The competition is organized on the Olympic system, meaning that the losers are forever disqualified. To continue the association with Association Football (pardon the pun), the winning team comes riding home on the metaphorical shoulders of the viewers, while the losing side may often be booed by its own rooters.

Take this example. In one program a flurried contestant misspelled a word—and for want of a letter his team lost.

At his institute the next day the professor rose to inquire, "Is the chap who did THAT here?" Up stood the poor boy. "Get out of my sight!" roared the professor.

Now back to our main idea.

KVN is a two-hour program. It begins with the introduction of the panel of judges, usually actors, writers and scientists known to have a sense of humor. Indeed, not everyone accepts the invitation to sit on the panel, fearing that his reputation as a wit might be blasted before some 90 million viewers.

The two teams come on, usually with some ingenious and amusing high jinks. I remember that the team of the Oil Engineering Institute appeared in pirate costume, loudly chanting "Hang boredom and banality high on the yardarm!" Then the team greets their rivals, the judges and the studio audience. I also remember that students from Moscow's First Medical Institute addressed the jury panel by saying, "Most esteemed judges and arbiters, today we place ourselves in your hands, but we warn you not to forget that you someday may fall into our hands!"

Now comes the heart of the matter, the duel of wits which consists of four to six different quizzes and contests.



KVN is a show of improvisations, vaudeville numbers and almost anything else that comprises an always amusing and interesting television show.

The first is a hot exchange of crossfire, mental gymnastics with only 30 seconds to give the appropriate answer. Then come the more difficult contests, for example, the Auction of Knowledge or Theater Contest, with half an hour allowed the teams to put on a skit with some famous actors participating.

Each program has an "away from the studio" contest. Competitors are given an hour to find a missing actor, to bring back the greatest wit in the city or to hunt down a particular building. Each team is provided with a car, sometimes even with plane tickets. Thus on New Year's Eve of 1963 competitors flew all the way from Moscow to Leningrad. Sometimes the assignment is funny, the competitors being asked "to bring we don't know what" to test their resourcefulness and humor. Remember that's what KVN stands for.

All quizzes and contests are impromptu except for the Home Task. The two teams are informed of the topic a fortnight or so in advance and present their answers in the form of a 10-minute revue. The assignments are highly varied, say, a "trip to the desert of hypotheses," or "it's spring that's to blame," or "human museum." The salient features of these revues—they invariably prove to be the main pattern of the program—are journalistic pungency, acrid criticism and original staging. KVN fans still remember the revue "The City in the Shopwindows," with its magnificent combination of satire and feeling. The team of the Moscow Physics Institute put it on several years back. A very topical skit was presented by the team from the Moscow Electric Vacuum Instruments Factory. Based on the Russian version of the proverb "Look before you leap," which goes something like this, "Measure seven times but cut once," the skit flailed red tape and inefficient industry planning and management.

KVN's satire often brings results. After the revue in which the team from the Oil Engineering Institute lashed out at service in railway stations, the ministry concerned sent a hurry-up call to the TV studio for the script of the broadcast in order to correct the situation. Needless to say, things happened.

Then there was the famous contest to furnish the season's most tasteless item. A "congratulatory" telegram was sent to the manager of the factory whose product placed first after stiff competition. And even if

НАХОДЧИВЫХ И ЭРУДИРОВАННЫХ КЛУБ

Photographs by Valeri Arutyunov and Anatoli Garanin



Behind the scenes is Bella Sergeyeva, the young and imaginative director of this television program, which has a large, appreciative audience.

SHOW



not all of the TV viewers remember, the plant manager will surely never forget it. They say he hasn't looked at television since.

But now KVN is more than just a television program. It has caught on everywhere, and Young Pioneer rallies and youth clubs put on their own local versions.

Frankly speaking, the authors of the first KVN programs—engineer Mikhail Yakovlev, journalist Sergei Muratov and your humble servant (I might note that I'm a doctor by profession)—did not expect, when they first suggested the idea, that it would bring such a big audience.

I myself think it's so popular because of its many surprises. Other factors responsible are its biting criticism and believe it or not, its deceptiveness. People come to root for their teams, to have fun, and they find themselves being furnished with snippets of information. They have to set the gray matter in motion to hunt up the answers to questions they would never think of asking themselves. Paradoxically, they like it. They are not only stimulated and entertained but take away with them a stock of new information. This makes them more observant; they begin to see things they did not even give a passing glance to before.

Like every healthy organism KVN has undergone the pains of growth. But optimists paint a bright future. Indeed, when the roar of the battle subsides and the rapiers of wit are thrust back into their scabbards, there comes the time for dreaming up such ambitious projects as a KVN contest between all 15 republics or one on an international scale between the hemispheres, say, and even—why not?—between the planets. This goes on until these rosy dreams are rudely shattered by the cry of the TV station's night watchman that it's already one o'clock in the morning and time to go home. The optimists descend to earth again, as they should, for Mother Earth still has plenty of challenges for the Club of the Gay and Resourceful.

Svetlana Zhiltsova and Alexander Maslyakov are masters of ceremony for this program, fittingly called the Club of the Gay and Resourceful.

ВЕСЕЛЫЕ ЧЕЛОВЕЧКИ







On parade to greet the competing team with an opening joke. It had better be good and new.

ВЕСЕЛЫЕ ЧЕЛОВЕЧКИ

НАХОДЧИВЫЙ ЗРИТЕЛЬ



The studio audience at a KVN show certainly does more than sit; it, too, plays the game.

This viewer seems to be ready to explode with a bright idea for the side he is betting on.

No easy job for these judges—measuring "quantity of wit" and the "degree of intellect."



Time called—a team caught by surprise gathers together for a quiet pep talk and a parley.





НАХОДЧИВЫЙ ЗРИТЕЛЬ

MIKHAIL ROMM TALKS

By Mark Deich
Photographs by Boris Baldin

A "NO SMOKING" sign, with the words "if you can help it" added to it, catches the eye as you walk into Mikhail Romm's office. After five minutes' conversation your host lights a cigarette and offers one to you. You glance at the sign. Romm waves it aside—"I see you can't help smoking. Neither can I."

Romm once stressed in an article that a film director's prime virtue is patience. This was well demonstrated during our interview, which lasted nearly three hours.

What's a Desert?

"Memory is a strange thing," began Romm. "Of the 17 pictures I have made, each taking several years' effort, I can remember only three well.

"Late in 1934 scenarist Iosif Prut and I accepted an offer to make a picture about the fighting between Soviet border guards and bandit gangs in the Central Asian desert.

"I suggested to Prut that we promptly take a trip to the desert.

"'What for?' he said.

"'To see what the desert is like.'

"'A desert's a desert,' he replied pompously. 'It's so called because it is deserted. Hadn't we better start on the story? How many characters should we have?'

"'Thirteen,' I replied in a surly manner.

"'Fine! Thirteen! Sounds mysterious and ominous! What if we call the picture *The Thirteen?*'

"As we went ahead with our work, the number of characters was reduced to twelve. But we were too fascinated by the title to drop it and hoped nobody would bother counting.

"There followed harrowing months of life and work under a broiling sun, in torrid desert heat impossible to endure. People almost went mad with the heat; many fell ill. Even the film reels, which were transported across the desert by train, were damaged by the heat. Our crew thinned: Of the five original cameramen, only two remained; of my two assistants and two other aides, only one was left. Our bookkeeper did his accounting in a hospital bed. The sound men quickly departed and some of the actors, too.

"*The Thirteen* was a challenge to my stamina. It put me on my metal, and I remember the film with a sense of gratitude."

The Way Lenin Laughed

"My next film, *Lenin in October,* was a major test of skill, a steppingstone to true maturity. Many details relating to this picture have stayed with me. Apart from the significant subject and the tight schedule, which required that I muster every nerve and all my powers as an artist, I was overawed by the great and responsible task of bringing the personality of Lenin to the screen. At times I thought myself both mad and arrogant to undertake this stupendous task.

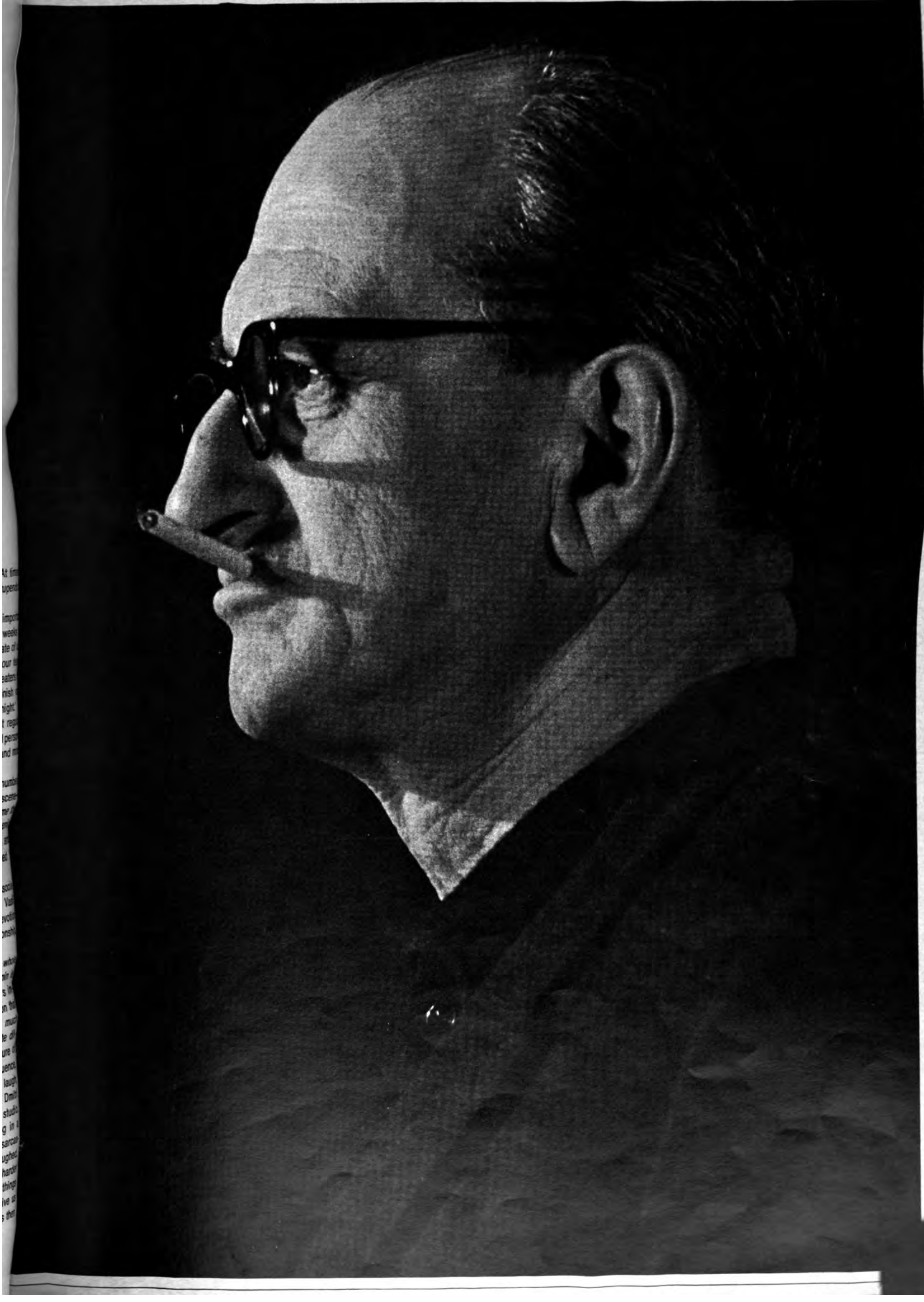
"I recall an instance when, for technical reasons, a highly important scene requiring many extras, which had taken us several weeks to shoot, was scrapped. This happened close to the release date of our picture. We were quite desperate, and a few members of our team took up positions at the exits of several large movie theaters in Moscow and appealed to people as they left 'to help finish our picture about Lenin by reporting to Mosfilm Studios at midnight.'

"Mosfilm Studios were then on the city outskirts, without regular bus or streetcar service. Yet by midnight nearly four thousand persons had arrived. It took us only a few hours to shoot the scene, and most of the people refused payment.

"This scene, which depended for its success on great numbers of people, was completed very quickly. However one small scene—the attempt on Lenin's life—took many days to shoot: Every time the actress who played Fanya Kaplan raised her hand to fire at Lenin, she encountered looks of such hatred in the eyes of the team and workers that she grew pale under her make up and exclaimed 'I can't do it!'

"But what I best remember about *Lenin in October* is my association with such truly remarkable actors as Boris Shchukin and Vasili Vanin. I learned so much from Shchukin, from his supreme devotion to his profession and his insight into the director-actor relationship, that I proudly regard him as one of my mentors.

"Shchukin's portrayal of Lenin has won tribute from the whole nation. To the present generation of viewers the image of Lenin is almost inseparable from Shchukin's portrayal. And Shchukin's impersonation has such a strong hold on everyone's imagination that in theaters presenting plays about Lenin, the actor is not so much Lenin as he is Shchukin's idea of Lenin. But things were quite different when we started making our film. Shchukin was not sure of himself. One occasion, before we had begun shooting a sequence, Shchukin suddenly discovered that when he was supposed to laugh, he did not know how Lenin had laughed. Urgently we begged Dmitri Manuilsky, who had known Lenin intimately, to come to the studio. Manuilsky declared that he could remember Lenin laughing in a dozen different ways: good-naturedly, boyishly, merrily and sarcastically. But Manuilsky could not demonstrate the way Lenin laughed. It is hard to laugh when there is nothing funny to laugh at and harder still to recall and imitate another person's laughter. These are things that require great acting skill. Manuilsky tried but failed to give us an example of what we needed. 'I cannot do it!' he said. It was then that Shchukin said, 'Let me try.'

















(Top left) *Secret Mission.*

(Top center) *Dream.*

(Top right) *Lenin in 1918.*

(Left) *The Thirteen.*

(Right) *Nine Days of One Year.*

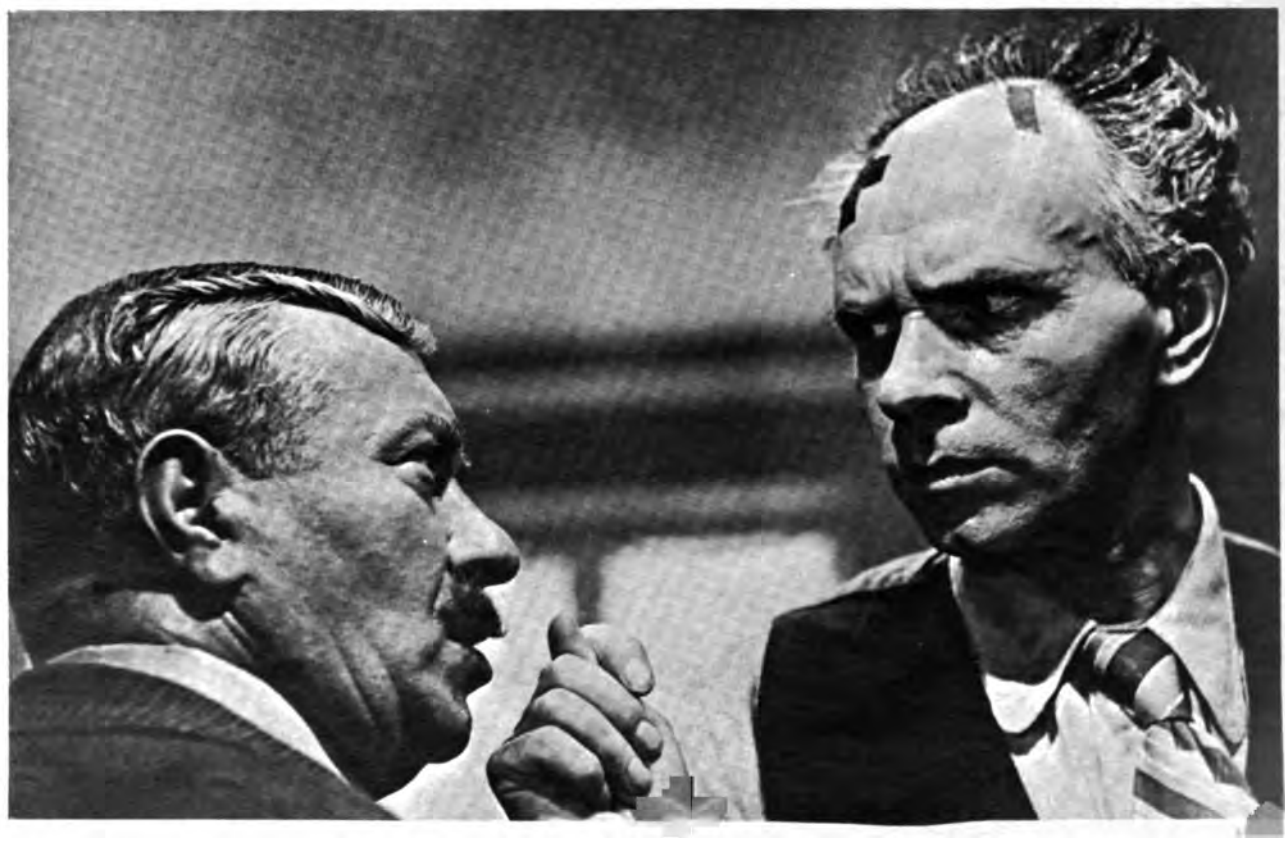
(Bottom left) *Murder in Dante Street.*

(Bottom center) *Ordinary Fascism.*

(Bottom right) *Man 217.*







"He walked to a corner of the room, stood for a while there in silence with his back toward us and then abruptly turned to face us. I gasped. The transformation was miraculous. He had become stronger, more collected. The poise of his head and his stance at once recalled Lenin. And his face, too, had changed.

"With Lenin's brisk, characteristic gait he approached Manuilsky, extended his hand to him, and said, 'You can't? But I can!' And he burst into laughter.

"The imitation must have been good. A flicker crossed Manuilsky's face. For a while he eyed Shchukin in silence and then said, 'You can do well without my help!' He left wishing us success."

Viewing Material

"One day a photographer walked into the projection room where our team was viewing material for the picture *Ordinary Fascism*. Unnoticed, he approached the screen, focused the camera in the black pit of the room. The result was a snapshot of our team viewing material for the picture we were making.

"The snapshot, however, showed only two persons watching the screen—the composer, who was with us for the first time, his eyes popping out of his head, aghast with horror, and myself. We were looking at documentary photographs of nazi concentration camps. The rest sat covering their eyes with their hands. It was like that throughout the filming of the picture. When I happened to be away, it was the assistant director or the film editor who had to watch. But when I was there, everybody turned away from the screen and left it to me to watch alone and pick the material. I could understand them. There were days when none of us could touch meat; the very smell disgusted us. I am more or less a teetotaler, but when we worked on that picture, I drank vodka in order to be able to eat at all.

"There were many angles behind the picture *Ordinary Fascism:* the individual and the masses, the masses as a progressive group of people and the masses as a monstrous and savage mob; about führerism and what it may lead to today; the role of the individual in history and the responsibility of each for the molding of history; the problems caused by the rapid growth of scientific developments and the slow growth of the individual consciousness. To dwell more concretely on these ideas is impossible, for half of them are philosophical. The thoughts are emotionally colored, which to my mind is an indication of the film's art."

Biophysics and the Candid Camera

"In recent times we have been witnessing an ever increasing conscious striving for the synthesis of the most diverse spheres of human endeavor. The combination of biology and physics, two seemingly incompatible sciences, has given impetus to the rise of biophysics, a science with a tremendous potential. A similar process in the movies is apparent in the partial fusion of the documentary with the acted film.

"*Ordinary Fascism* is strictly composed of documentaries. I have not incorporated into the picture a single still from an acted film, with the exception of a nazi propaganda picture. But the material has been arranged on the principle of an acted story, the principle of Sergei Eisenstein's montage. I avoided chronological order and deliberate exposition. Making use of whole slices from the *Wochenschau* newsreels, I placed the episodes into emotional and pictorial sequences.

"Every mature artist has his own theme which, in one way or another, is present in every work he produces. I am often asked whether there is any connection between my previous picture *Nine Days of One Year* and *Ordinary Fascism*. I believe there is a direct connection, for both films are united by a single theme, a theme which I hope to further enlarge upon, perhaps in my next picture. This theme is the responsibility of each person to humanity for everything that happens in the world. Different as are the two pictures, my stand in *Ordinary Fascism* is the same. In the picture I continue debating the issue taken up in *Nine Days of One Year,* a vital issue of deep concern to myself and to all people of our day."



For Mikhail Romm argument is a principle. It is only in fierce and uncompromising battle over an idea that the truth is born. Here he is with the directors (left to right) Andrei Smirnov, Larissa Shepitko, Yuri Magoret.

Modernism or a Sense of the Time?

"The two do not go together in art and should not be confused. Modernism is more often synonymous with poor art. But, of course, one need not be pedantic about terms. For example, both the poets Igor Severyanin and Alexander Blok were, in their time, classed as modernists. Today, after the elapse of half a century, we regard Blok as a genius and hardly give a thought to Severyanin.

"I distrust modernism as a term applied to the cinema. But at its best a sense of the times, I know, brings worthwhile results. To my mind come two of my favorite French film producers—Alain Resnais and Jean-Luc Godard. Although Resnais has made few pictures, it is clear that he is an extremely versatile director. But there are things he does which are open to question. Take the film *L'Année Dernière à Marienbad*. It displays a true master's hand, and yet there is far too much emphasis on form. The modernistic flair makes one doubt the artist's capacity for really profound insight. *Hiroshima, Mon Amour* is quite brilliant. Invariably I am deeply moved by Godard's work. With poignancy and natural style he creates work that has remarkable impact on the spectator. I believe the Czechoslovak method of combining documentaries with the acted story brings us a strong sense of the times. That sense, too, is apparent in the pictures of certain American producers. I have been greatly impressed by the work of the so-called New York school, in which documentary authenticity plays such an important role."

The Ingredient of Intellect

"We have grown accustomed in cinema art to terms like epic, poetical and intellectual. To the latter category, for example, are ascribed my own efforts. It is hard to say what the word intellectual as applied to the cinema means. Incidentally the term intellectual was first used by Sergei Eisenstein in relation to montage, meaning an arrangement of shots to induce a train of thought implicit rather than explicit in the film sequences. However, the other day a young film director came to see me and asked, 'What are the ingredients that go into an intellectual film?'

"Taken a little aback I replied, 'I suppose one of them is intellect.'

" 'And how much of it is needed?'

"Presently the young director grasped the truth that there are as many directions in film art as there are talented film directors, and that most mediocrities work alike. The conversation set me thinking about the direction of current cinema art.

"One of the tendencies apparent in the art of film making of our day is the deep probing of man and human nature. This is true of the best Italian, Czech, American and French films.

"The other day I saw Marlen Khutsiev's latest picture *July Rain*. There is no plot to it—just the story of a young man and his sweetheart. They have their group but no real friends. Nor is the love which they vaguely grasp genuine.

"The film strikes a strong authentic note and is an attempt to get at the reason for the restlessness among many young persons of our day. Marlen Khutsiev looks closely at them and invites us to come along with him. It is a thought-provoking picture."

Two Giants

"Medicine, I am told, has to deal today with a new type of dipsomaniac, known as the television alcoholic. This type seats himself comfortably in front of the television with his bottle of whiskey and drinks it all up while watching the shows.

"We film makers, however, have our own bone to pick with television; it is our most dangerous rival. That it is stealing away a good deal of our audiences is an irrefutable fact.

"What attraction does television, with its small screen, have for the viewer? The greatest attraction is that the viewing takes place at home. If it took place in some special location, everybody would



But one has to do more than defend his idea in argument, insists this distinguished Soviet film director. It must be given flesh, blood, bone and muscle; the director has to personify it in an emotionally exciting image.

still be patronizing movie theaters. After a day's work one prefers to get into one's slippers and turn on the television rather than go to the nearest movie. Even in our country, where the cinema is very popular, we note that the age of the film audience has become much younger. Young people, before they get married and have children, are drawn to the movie theater to see the picture, as well as to have the feeling of being among people. But as soon as they settle down, they prefer television.

"Television has still another great advantage over films. It brings the latest news directly into the viewer's home. The popularity of TV is based upon the fact that people can enjoy it in the comfort of their own home and also that they can be rapidly informed of the latest news developments. In meeting the challenge of television, film art has had to embark on many novelties: color, then the wide screen, both novelties of form, at times effective. At our studios today we witness the curious fact that the majority of our directors shy away from the wide screen, and studio managers trying to talk them into making wide-screen pictures; a few years ago every director wanted to make wide-screen movies.

"The same kind of war that goes on today between television and cinema went on earlier between the screen and legitimate theater. I have to admit that I thought then that the theater was in real danger. But now new theatrical forms flourish. Theater audiences may not compare in size to cinema audiences, but they make up for it by being more discriminating. Apparently films will have to go through a similar crisis and lure audiences to movie theaters by presenting more distinguished and skillfully produced features and by using resources beyond the scope of television.

"I can anticipate your final question but, to be frank, am at a loss what to say. Now and then in interviews I have spoken of my latest plans, which I later altered. At any rate I can make the statement that my next film will continue the theme of *Nine Days of One Year* and *Ordinary Fascism.* The picture will dwell on the destiny of the youth of Europe. I can say no more, because I have not even begun to write the script as yet."

Just before leaving I asked Mikhail Romm if he had any time at present to devote to sculpture, a well-known hobby of his.

"Film directing leaves little time for anything else. Now that I'm reaching seventy years of age, I may have time to do other things. I think that seventy is about the age at which a film director should retire. My thoughts now are not of myself but of the coming generation.

"When I began working in films, I imagined that there was nothing I could not accomplish. Now I can see there are things in my art that are not and never will be within my reach.

"I've just looked at a picture by a rising director. I can see its flaws, where it misses aim, but I see, too, the promise of the man. There are bits in it that I admire immensely, that make me feel that what I could do as a young man, I cannot do today, despite the fact that with all my heart I long to work for youth. Film art is an art of youth—to keep pace with its progress is a tremendous challenge."

THE LANGUAGES OF THE WORLD AR

By Alexander Sharov

AS I SEE IT, those charged with the instruction of children fall into two categories. One holds that the child's spiritual life is of no intrinsic value, that it is merely the threshold of adult life; the other, among whose leading representatives were Janusz Korczak of Poland and Anton Makarenko of Russia, holds that childhood is itself an important period of creativity, during which almost every child is a talented artist. This is the time when joys and sorrows, sounds and colors are absorbed in a spongelike way. "Was I not alive then," Leo Tolstoy asked, "during those first years, when I learned to look, listen, understand and speak, slept, was a suckling and kissed the breast, and laughed, and gladdened my mother? I lived, and lived in a blessed state. Was it not then that I acquired everything I now live on, and acquired so much and so rapidly that, during all my ensuing life, I have not acquired one hundredth part of what I learned then? From the child of five it is but a single step to me; from the newborn babe to the age of five is a frightful distance."

According to the experts in child education, the child's basic character is molded by the age of three or four, perhaps even earlier. In his childhood man is granted the marvelous ability to synthesize the basic creative elements directly from his environment, just as a plant synthesizes all its juices, colors and odors from sunlight, moisture, air and soil.

As you shake or turn a child's kaleidoscope, you see a variety of changing designs, all of them created from the same number of pieces of colored glass. While it is alive, the human brain goes on creating "designs" whose beauty, wealth and complexity are conditioned by the variety, vividness and delicacy of shading of the original impressions.

For long hours I have watched children, listened to their talk, observed their games, and gradually I have come to see the differences in the natures of even the smallest of them and to realize the significance of such differences.

For instance, some children behave in a usual way when they are walking with their mothers down the street. Others, holding their mothers tight by the hand, keep looking back.

"Why don't you walk like everybody else?" the mother asks. She, too, looks back but sees just an ordinary street.

Neither do I see anything uncommon—only the frosty mist, a scraggy cat crossing the road, the whistle of a militiaman bringing a car to a halt, a crane which has just stopped working.

"Can't you walk like everybody else?" the mother asks, irritated.

The boy pays no heed to her, plods ahead but keeps looking back. He must have missed something important he cannot help looking for.

He looks and looks, absorbed, seeing things through that "magic crystal" which only one adult in a million possesses but which almost every child has.

Children, even at an early age, develop urges and needs which are no less irresistible than those of adults. At times these urges seem ridiculous even to those closest to the child, but if disciplinary measures are taken, something very important and very precious may be destroyed.

The son of some friends of mine loved to sing more than anything else in the world. From the age of two he sang at home, while visiting friends, in the kindergarten and in the street; as he walked along, he would wave his hands in time with his singing.

There was nothing bad about it, except that it was not singing. What he did was repeatedly chant the words of a song at the top of his voice and, as those about him thought, most unmusically, drawling out the words in the most gruesome way. At home his "singing" irritated his parents, and at the kindergarten it ruined the performance of the children's chorus.

When the boy turned seven, his parents decided to send him to an English school—a Soviet school at which several of the subjects are taught in the English language. Since there were more applicants than vacancies, the new children were interviewed briefly so as to ascertain their abilities and degree of development. At these interviews the children were asked, among other things, to recite a poem or story or sing a song.

Aware of the boy's propensity to "sing" and the terrible effect that "singing" had on others, the father commanded and appealed, by turn, as he led the boy to the school building: "Now don't start singing when you get there. Recite a little poem. One of the many you know." The boy said nothing in reply.

With a presentiment of approaching trouble, the father stood at the door of the classroom where his son was being interviewed. After the usual questions the teacher said:

"Now, please recite a poem you know."

"No, I'd rather sing something," the boy replied in a firm voice and burst into song.

It so happened that I moved to another address shortly afterward and for two years lost touch with that family. A while ago I bumped into the father on the street, and his first words were: "Have you heard about little Peter? He has been admitted to a music school. It turned out that he has absolute pitch and a rare gift for musical composition. Just imagine! In the past his voice simply would not obey him. That is what they told me at the music school."

Molding a child's character is a very special and very complex task. To say one should not have to depend on commands when teaching a child is not a denial of the need to shape his character. This is what I heard said of a very good teacher, "There seem to be invisible wires running from him to every child, not wires that are pulled but arteries or channels along which, as people thought in ancient times, emanations of the spirit travel."

This kind of character molding is far more difficult than simply issuing orders, just as it is far more difficult to sculpture a figure out of a block of marble than to cast one from a mold.

During the first years of his life, the child's development is determined by his transition from a world in which he is quite alone made up of his mother and himself and his family then to a world made up of himself and later to a world in which he becomes a particle of human society.

Perhaps that "childish selfishness" Tolstoy spoke of is a residue of the loneliness of earliest childhood.

The transition from a situation in which the child himself is the whole world to his becoming a part of society is almost impossible without help from wise and thoughtful teachers. There are people who make that transition only in appearance and in whom the "selfishness" of childhood turns into an "egocentrism," intolerable to those about them and a source of unhappiness to themselves. There are others who lose their individuality during that transition; as a result of incorrect upbringing they lose those individual qualities without which one cannot be of much use to others.

The concept of "foundations of knowledge" evolves historically but sometimes lags behind the needs of man. That was the case in czarist Russia, where education placed distorted emphasis on dead languages and dry-as-dust chronological tables of history. This cycle was modified somewhat by the establishment of "modern" schools, but it was only in 1918, the year following the October Revolution, that a unified system of modern instruction was instituted. The old educational system, which stunted the child's creative thinking, was discarded, and a new system adopted whose aim was the harmonious development of the whole child. As Andrei Lopukhov, who taught at Moscow Gymnasia for 30 years and then in Soviet schools until the last day of his life, once said to me: "The Gymnasium was designed to iron out all distinctions and individual propensities. It was a leveling machine. Our new schools are designed to reveal and develop all of man's individual qualities, all his gifts."

Whether such leveling is necessary or, on the contrary, most harmful is not an abstract question. It is linked with everyday educational practice. Among the many important ideas developed in the recent article "The Foundations of the Building," by Mikhail Bogomolov, Merited Teacher of the Uzbek Republic, is one which everyone must take issue with. "In their behavior and their manners," he says, "all children—the most able, the mediocre and the slow—should be absolutely the same."

But can all children be the same? Many years ago when I was a schoolboy myself, a very experienced psychiatrist was doing some testing at our school for a study on the "subjective appreciation of the speed at which time passes." The tests were very simple. A group of us between 13 and 14 years of age sat in a room which contained nothing to distract our attention. A metronome was started, then stopped at intervals for a period and then restarted. We were all supplied with pencil and paper and told to estimate, in seconds, the intervals between the signals. The test was repeated many times with variations, but on the whole the replies were consistent. Most of the boys and girls gave a more or less accurate estimate of the length of the intervals. But two of us—a boy and a girl—estimated the passage of time at half its real speed. For another boy—impulsive and cheery by nature—to whom time always seemed in a hurry, it passed at least 50 per cent faster than for the other children.

This example evidently has deep-rooted psychological, physiological and biological origins. To expect similar behavior from people with slow and fast biological clocks would mean excessive tension for the former and insufficient utilization of the abilities of the latter. Ivan Pavlov, our celebrated physiologist who did so much work with the nervous systems of dogs, bred animals to obtain genetically pure nervous systems. Such studies have fundamental scientific significance because they prove that various types of nervous systems are determined by heredity not by chance, and must be reckoned with.

Human mentality is far more complex, and the differences in children reveal themselves in far more decided ways. The teacher simply has no right to ignore or disregard them. Efforts to iron out such differences in order to achieve "sameness" in a group of children may lead to very sad consequences.

OUND THEM

Anton Makarenko was a passionate advocate of a differentiated and individual approach to child education. He was a marvelous blend of teacher and psychologist and realized the importance of the subtlest perception of distinctions to each member of a children's collective. This sensitivity permeates his work and writings, especially his book "The Road to Life."

Since the inception of the school system, leading educators have paid close attention to child psychology. Childhood thinking is dominated by a love of fantasy and the urge to discover.

Among the major unconditioned reflexes upon which the higher nervous activity is based, Ivan Pavlov laid special stress on the reflex of discovery, the reflex of the new. In childhood literally every step is determined by that reflex; it gives a special meaning to a child's life.

Indeed, for the child one discovery follows another. In adult life it is only a genius who makes discoveries; every child makes thousands of them. For instance, a teacher I know once saw a little girl at a kindergarten getting up at dawn on some business of her own. Half asleep, she took several steps, and suddenly her eyes opened wide as she saw through the window the red disk of the sun rising above the horizon. She had never before seen it, because in her part of town the horizon was hidden by tall buildings. The discovery made her cry out with surprise and joy. "The expression on her face was one of great happiness," the teacher told me.

Pavlov attached great importance to the ability to "observe, observe and again observe." That ability, if it goes hand in hand with the utmost devotion, is the ability which educates both the scientist and the poet; it is a gift granted in childhood. It is only in childhood that the efforts of the family, the kindergarten and teachers in the early years of school can elicit and nurture that ability.

Of course children's "discoveries" have no influence on the development of science or the fate of nations, but they do encourage insight and the urge to seek the new.

The fantasy element in children's thinking complements, as it were, their ability to make discoveries. This element finds expression in the child's willingness to believe in the most improbable things, to picture the improbable and endow it with reality. Improbability as such does not exist for him. A glance at any child's drawing bears out this observation. Since he does not believe in the impossible, the child undertakes projects that can sometimes only be achieved by the adult genius. It is altogether possible that the first vague ideas of space flight and of flight in general were dreamed of in childhood.

At a good kindergarten the fantasies of the children and their innate striving for discoveries can be developed with the proper encouragement. Here independent cognition of the world through experience can and should predominate. Nature is the living source of information for children, most of that information being provided yearlong in the kindergarten courtyard and in the country, where the children go during the summer. In the winter these priceless observations of animal and plant life continue at the kindergarten during nature

studies. On their walks the children observe the color of the sky, the movement and diffusion of clouds, falling snow, the multiform shapes of snow crystals, the trees in their winter clothing.

Games, fairy tales, music, imaginative drawings and play mold the child in kindergarten.

But when he reaches the age of seven, the child must make a radical adjustment; education now means the accumulation of information. Living nature recedes into the background, and the city child comes into contact with nature only during the summer holidays or at a Pioneer camp, and then often without the benefit of instruction from teachers or naturalists. Is this not the reason why so many adults know nothing about birds? Adults often divide birds into three groups: domestic fowl, such as hens and ducks; city birds, such as pigeons and sparrows; and all the rest which live in the woods. All meadow plants come under the general heading of grass.

Schooling has little or no time for summer and spring, when nature is so active. For the child this is a misfortune. It is only in the fall and winter that the teacher comments on nature. The living book of nature, whose first pages were turned in kindergarten, is closed. The smaller children are denied entry into the Young Naturalist Clubs at schools since, it is claimed, their knowledge is insufficient. Elementary schools are not in a position to provide that open-air education which produces the finest people, to paraphrase Walt Whitman. Cognition through experience and practice is almost totally replaced by logic and book knowledge.

The sharp decline in the stream of information on living nature inevitably affects the child's development, especially his spoken vocabulary, his grasp of the structure and the spirit of his mother tongue. That is a pity, since learning his native language is perhaps the child's main task in elementary school, a task for which he should begrudge neither time nor effort.

It may be held that the transition from kindergarten to school is a happy event, taking place quite painlessly for the average child. Thus there should be no reason for alarm.

The trouble is that this transition is not as smooth as it might seem. The idea that it is easy and natural arises from the fact that adults pay little or no heed to the grief children feel. Such grief is not uncommon during this transitional period, for experience shows that many children who revealed vivid personalities in their kindergartens are often labeled by elementary school teachers as absent-minded, unable to concentrate and even dull.

Sometimes it is the children with undeveloped gifts, the born naturalists who feel at home in the woods, the artistic children and those who have definite creative ability who are labeled slow and dull when they enter elementary school. Such children find it harder to adjust to the regularity and the monotony of school instruction. I heard one teacher say of an eight-year-old dreamer: "He is a little liar. He sees one thing and describes something quite different."

Many children have a hard time when they enter school from kindergarten. The trouble is that we simply do not notice such things. On one occasion I spent several days at a boarding school in the town of Novgorod-Seversky in the Ukraine. When I arrived, I witnessed a rebellion in one of the first classes. For a whole month the children rebelled by buzzing in unison when the bell rang, slipping off their chairs onto the floor and, in a sitting position, worming their way to the walls and the door of the classroom. Their teacher, a clever, experienced, patient and child-loving woman, went through a lot during this strange battle with the children. She won out only because she took pains to discover the reason for the rebellion.

The class was not made up of children who were new to each other and would therefore be pliant in the hands of an experienced teacher. All the children in her class came from the same kindergarten, arriving as a definite collective, with its own traditions, habits, friendships and recognized leaders. The dissatisfaction which may develop in the usual class disperses in the course of time, but here it found strong and organized expression. The class was made up of orphans and children whose parents were in prison. They had suffered many mental traumata. At the kindergarten the personnel had been able to create a new family atmosphere. The kindergarten had an excellent nature corner, and there was an abundance of flowers and toys. Serious studies (almost all the children could read when they came to the elementary school) alternated with songs, games, dancing, gymnastics and the like.

The children could not understand why there was none of this when they came to school, and they rose up in rebellion. On mature consideration the teachers at the school had to admit that the children were right.

Some of the teachers said the children should be brought to heel and taught the meaning of discipline. Others objected, "Of course the children could be brought under control, but then it would be very hard to rebuild what had been broken.

The final decision was to change not the children but certain elements in the school program. Lessons were cut to 30 minutes. Writing and arithmetic—the more difficult lessons, requiring the formation of elementary habits of abstract thinking—were alternated with games, walks, listening to music and fairy tales. Very gradually the blackboard, as a symbol of school instruction, came to be part of the children's lives. The class rapidly made up for the time lost during their rebellion and began to function smoothly.

* * *

The foundations of knowledge are created at school, but this very concept, the volume and composition of those foundations are the result of historical development, and here certain outmoded features are probably present.

A man may remember all the paths and almost all the trees in a nearby wood and never lose his way here. Moreover, he may gain such an understanding of the nature of forests, the laws of their development and the character of plants that he will feel at home in any forest, not only the one he knows.

The wider and the more varied man's sphere of activity, the more importance attaches to the second form of cognition—the education of a sense of orientation and direction rather than the study of definite paths.

The Russian writer Alexander Herzen said that the aim of a university is not to provide information but to evoke questions, teach the students to ask why.

He was right. A mind that is not fettered by a collection of outmoded information and has a sense of nature can rapidly accumulate the most up-to-date knowledge and create something that is new.

Unless it is blocked by extraneous factors, creativity begins at an early age, not only in outstanding individuals but in ordinary mortals as well. School teaching is often organized as though there were decades between the child's school desk and the onset of creative thinking, as though there were a big time gap between the transition from passive to active thinking. In fact there is no such time gap; the climb to creativity, to discovery, begins with the child's first steps. That ascent must be given skillful support when it is needed.

Herzen's words about universities refer in equal if not greater measure to grade schools. The words how and why should play a prominent part in the vocabulary of school children. The foundations of knowledge are not a collection of replies but, first and foremost, paths to be followed by young people where they can independently find the right answers.

As soon as the child opens his eyes, a whole world—no, whole worlds—begin to invade his mind. The school must be designed to lead him into these various worlds and teach him how to speak and understand their many languages.

IN HIS CHILDHOOD MAN IS GRANTED THE MARVELOUS ABILITY TO SYNTHESIZE THE BASIC CREATIVE ELEMENTS FROM HIS ENVIRONMENT, JUST AS A PLANT SYNTHESIZES ALL ITS JUICES, COLORS AND ODORS FROM SUNLIGHT, MOISTURE, AIR AND SOIL. . . . WHILE IT IS ALIVE, THE BRAIN GOES ON CREATING "DESIGNS" WHOSE BEAUTY, WEALTH AND COMPLEXITY ARE CONDITIONED BY THE VARIETY, VIVIDNESS AND DELICACY OF SHADING OF THE ORIGINAL IMPRESSIONS.



CHILDREN'S CORNER

The Black Dragonfly

By Vladislav Bakhrevsky
Drawing by Leonid Sergeyev

There is a black dragonfly living right by a black lake in the forest. It is the rare person who sees it, but the one who does wins happiness. However, this does not make things better for the dragonfly. All the other dragonflies, the blue ones and the green ones, fly over rivers and ponds, and their beauty gives people pleasure.
The black dragonfly is a thousand times more beautiful, but it may well be that nobody will see it—nobody, not a single person.
At night the dragonfly soars over the black lake, and the lake shines in glory from its black wings, like a mirror in the sun, but nobody sees this, nobody.
And the dragonfly does not know what its purpose is in living.

A preliminary sketch by Leonid Sergeyev for the Russian fairy tale The Black Dragonfly.

CLEAN AIR FOR OUR PLANET

Summer 1968 marked the fifth anniversary of the signing in Moscow of the treaty partially banning the testing of nuclear weapons. More than 100 nations have since signed the treaty.

Is the atmosphere of our planet cleaner as a result? Avetik Burnazyan, Deputy Minister of Public Health of the USSR, answers this question.

We know that as a result of testing nuclear weapons before the Moscow Treaty was signed substantial quantities of radioactive products were discharged into the atmosphere. This fallout led to intensive radioactive contamination of the atmosphere and to the accumulation of radioactive isotopes in people. Besides short-lived iodine-131, these radiocative isotopes included long-lived strontium-90 and cesium-137, both great potential dangers to mankind.

The treaty put a stop to further contamination of the biosphere. Also because of the natural decomposition of radioactive isotopes and their dissolution in the atmosphere, the concentration of beta-active particles in the air decreased substantially in the following years. In 1964 the average concentration of these substances had dropped to a tenth as compared to 1963, to a sixtieth by 1965 and to a one hundred and fiftieth by 1966. As compared to 1963 the concentration in the air of such long-lived radioactive isotopes as strontium-90 and cesium-137 decreased on the average to less than a tenth last year.

There has been a decided reduction in the concentration of the long-lived radioactive isotope of strontium-90, and especially of cesium-137, in various animal and vegetable food products, as well as a very considerable reduction in the content of cesium-137 in men. Also evident is a tendency toward a consistent decrease of the content in the human body of strontium-90, another long-lived isotope. On the whole we can say with satisfaction that the Moscow Treaty resulted in a tangible improvement in the radiation "health" situation in our country and in the world.

For some years the research institutes of our Ministry of Public Health and radiological groups in our sanitary-epidemiological stations have been making joint, systematic observations of the level of nuclear contamination in the atmosphere. We regularly test the air, sediments, soil, bodies of open water, plants and food products. The content of radioactive isotopes is determined by medical men who work closely with physical engineers and radio chemists in conducting analyses by radiochemistry and radiometers. Stationary and portable counters, which measure the radioactive emissions of the human body, give them reliable data on the radioactive isotope content of people living in various parts of the country, enabling scientists to estimate the exposure doses of the general population.

To summarize, this research gives the USSR Ministry of Public Health a picture of the radiation situation in different areas of the country and in the country as a whole. A close check on dangerous concentrations of radioactive fallout is kept, and the necessary preventive measures are taken. Substantial doses of both outer and inner irradiation, as we all know, cause a number of serious diseases, including some that are hereditary. The Moscow Treaty ensures the health of both the present and future generations.

Here the Ground Is Bound by Ice, and the Sky Is Burned by Northern Lights

LIFE ON THE SIXTY-NINTH PARALLEL



AT NIGHT THE LIGHTS OF INDUSTRIAL PLANTS IN NORILSK OUTSHINE THE NORTHERN LIGHTS. IN CLEAR WEATHER THIS CITY CAN BE SEEN FROM A GREAT DISTANCE, BUT WHEN BLIZZARDS STRIKE, ALL THAT CAN BE SEEN IS THESE LIGHTS. THEY HELP TO GUIDE THE TRAVELER TO SAFETY, AND AS HE NEARS THE CITY, THE FLAMES OF FURNACES CAN ALSO BE SEEN THROUGH THE HEAVY, FALLING SNOW.

Photographs by Lev Ustinov



THE FIRST TO ARRIVE AT A CONSTRUCTION SITE ARE THE GEODESISTS. THEY ALL KNOW THE PRIVATIONS OF A NOMADIC WAY OF LIFE. EVEN THEIR FREE TIME IS SPENT IN TENTS OR SHACKS. IT MUST BE DIFFICULT FOR THEM TO ALWAYS BE ON THE MOVE—LEAVING BEHIND THE NEW STREETS OF CITIES WITHOUT NAMES—AND TO ALWAYS LEAVE THESE NEW CITIES BEFORE THEIR COMPLETION.

High on the explorer's list of honor are the names of those who have faced the rigors of the North. The records in book or film of those intrepid men who charted the polar continents excite and move us no less than they did our fathers.

One Soviet Arctic region now undergoing particularly intensive development is the Taimyr Peninsula, on Asia's northernmost tip. Look at the map and you will see the great triangle of this peninsula jutting out into Arctic Ocean waters, which are flecked with symbols denoting floating ice.

Most of the peninsula is within the Arctic Circle, where the Arctic night is long. The temperature is sub-zero 267 days in the year. On a hundred-odd days a year the mercury drops to 22°F. and more below zero. A calm day is a rarity; Arctic winds blow endlessly, transforming everything around into a wall of falling snow.

In the mid-1930s geologists discovered rich deposits of metal ores in Southern Taimyr. Commercial exploitation was begun during the war when the Western USSR, the main supplier of metal ores, was temporarily occupied by the Nazis. But the town of Norilsk, the future center of this industrial area, was started on the left bank of the Norilka River before the war, in 1935. The mining and metallurgy plant built there has grown into one of the country's largest.

In the summer of 1960 the Taimyr's biggest deposits were found at Talnakhskoye, a short distance from Norilsk. Now a railroad and automobile highway connect the two.

In recent years gas and oil have also been found. Nevertheless economists plan to base power-producing facilities on water resources. Power will be generated here by the world's northernmost hydroelectric station on the Khantaika River, now under construction.



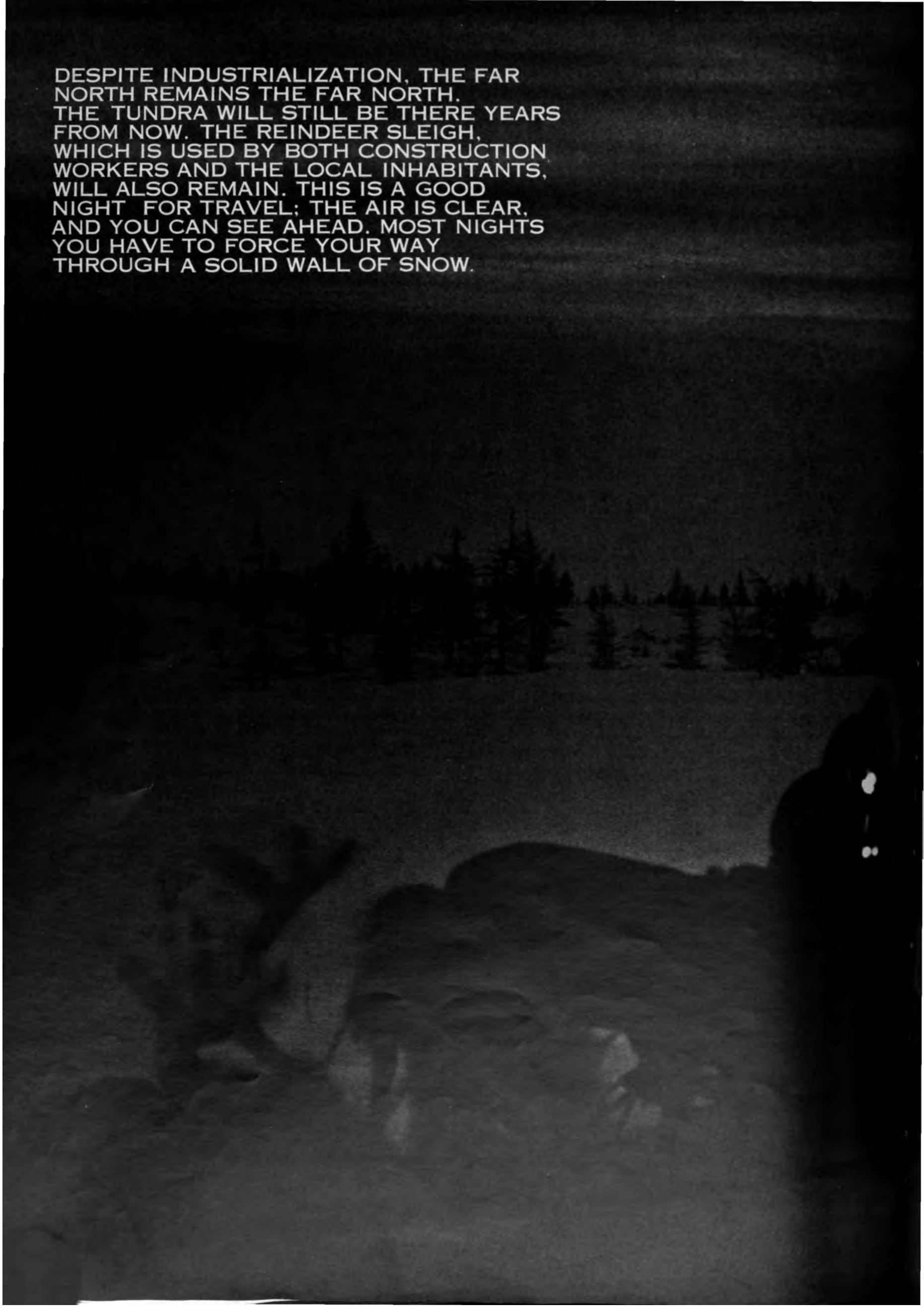
EVERY DAY IN THE TAIMYR BRINGS EXCITEMENT—THE DISCOVERY OF A NEW MINERAL DEPOSIT, THE OPENING OF A NEW MINE OR FACTORY, THE LAST SPIKE DRIVEN INTO A NEW STRETCH OF RAILROAD. FOR THIS REASON REPORTER GALINA ZAKHARCHENKO IS MOST LIKELY TO BE FOUND AT A CONSTRUCTION SITE AND NOT IN THE NEWSPAPER OFFICE.

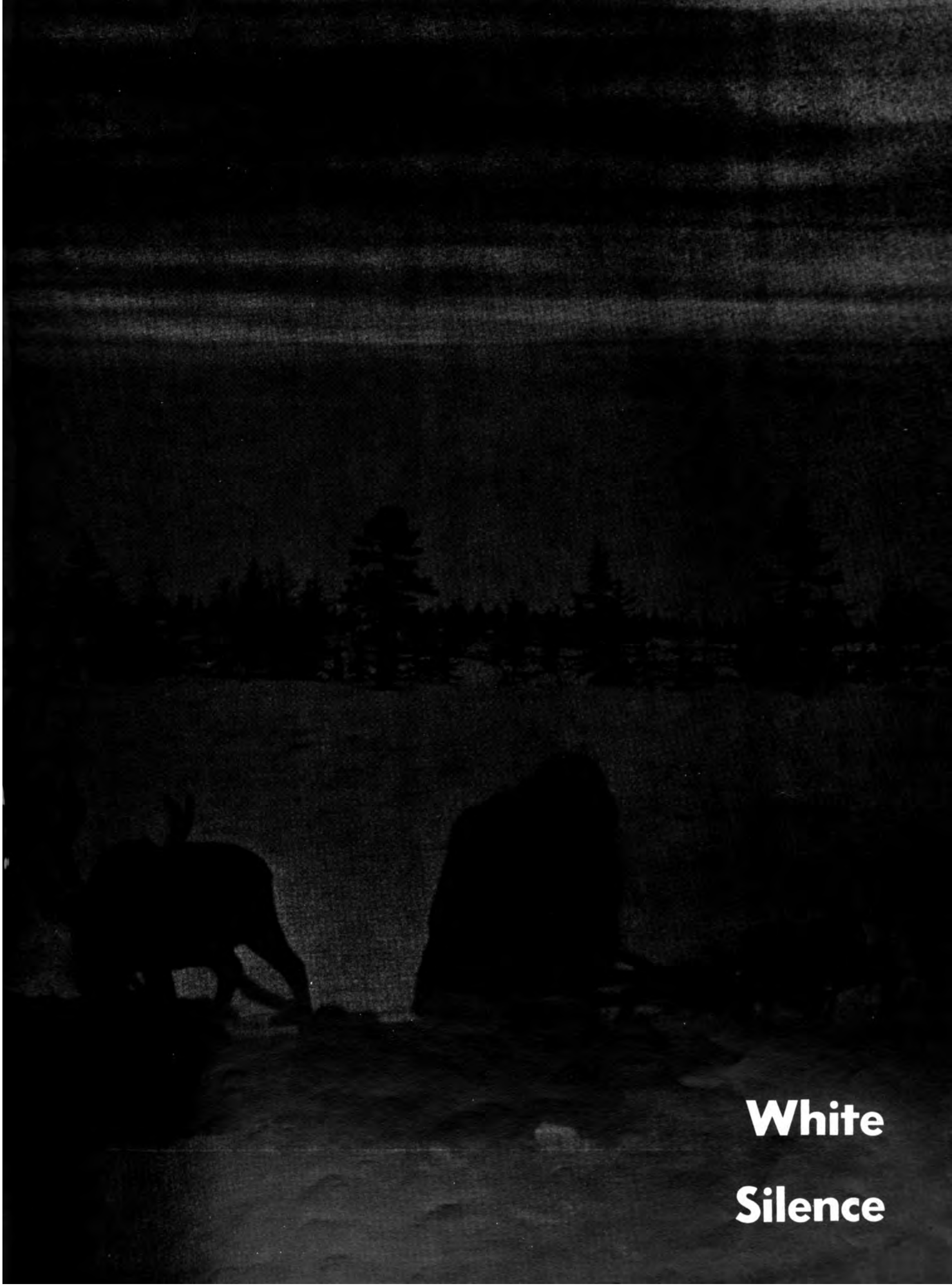
FOR VICTOR GOVOROV, CHIEF GEOLOGIST OF THE NORILSK MINE AND METALLURGY COMPLEX, AND HIS ASSOCIATES THIS WEATHER IS USUAL. ONE OF THE MOST FASCINATING OF THE TAIMYR'S NEW PROJECTS IS THE KHANTAIKA POWER STATION TOWN. IT WILL BE SHIELDED FROM WIND AND FROST UNDER AN ENORMOUS GLASS DOME. THIS DOME, WHICH WILL BE TRANSPARENT, WILL COVER APARTMENT HOUSES, PLACES OF WORK, SCHOOLS, A SWIMMING POOL AND SPORTS FIELD.

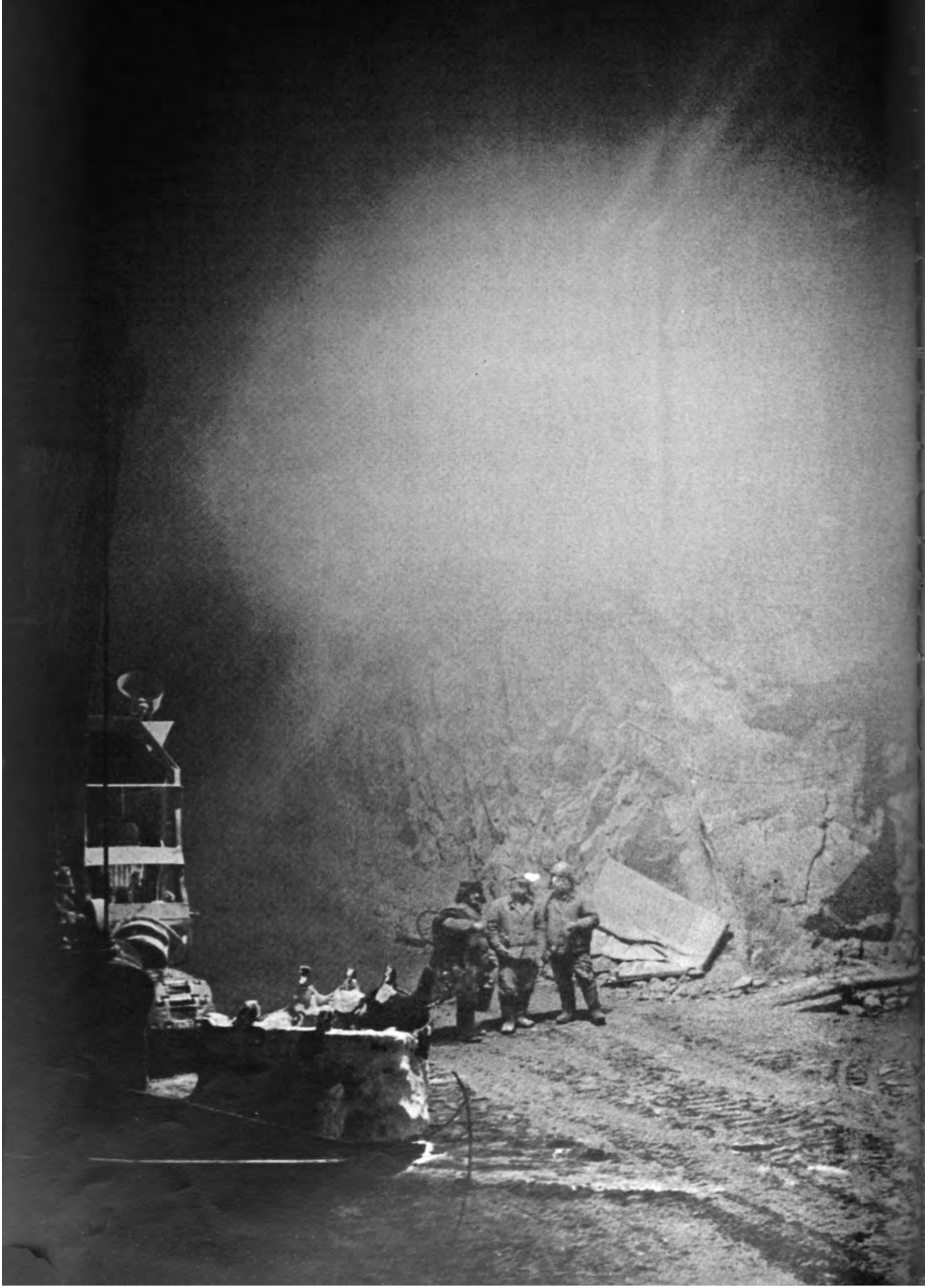


Searching for Ore in the Snow

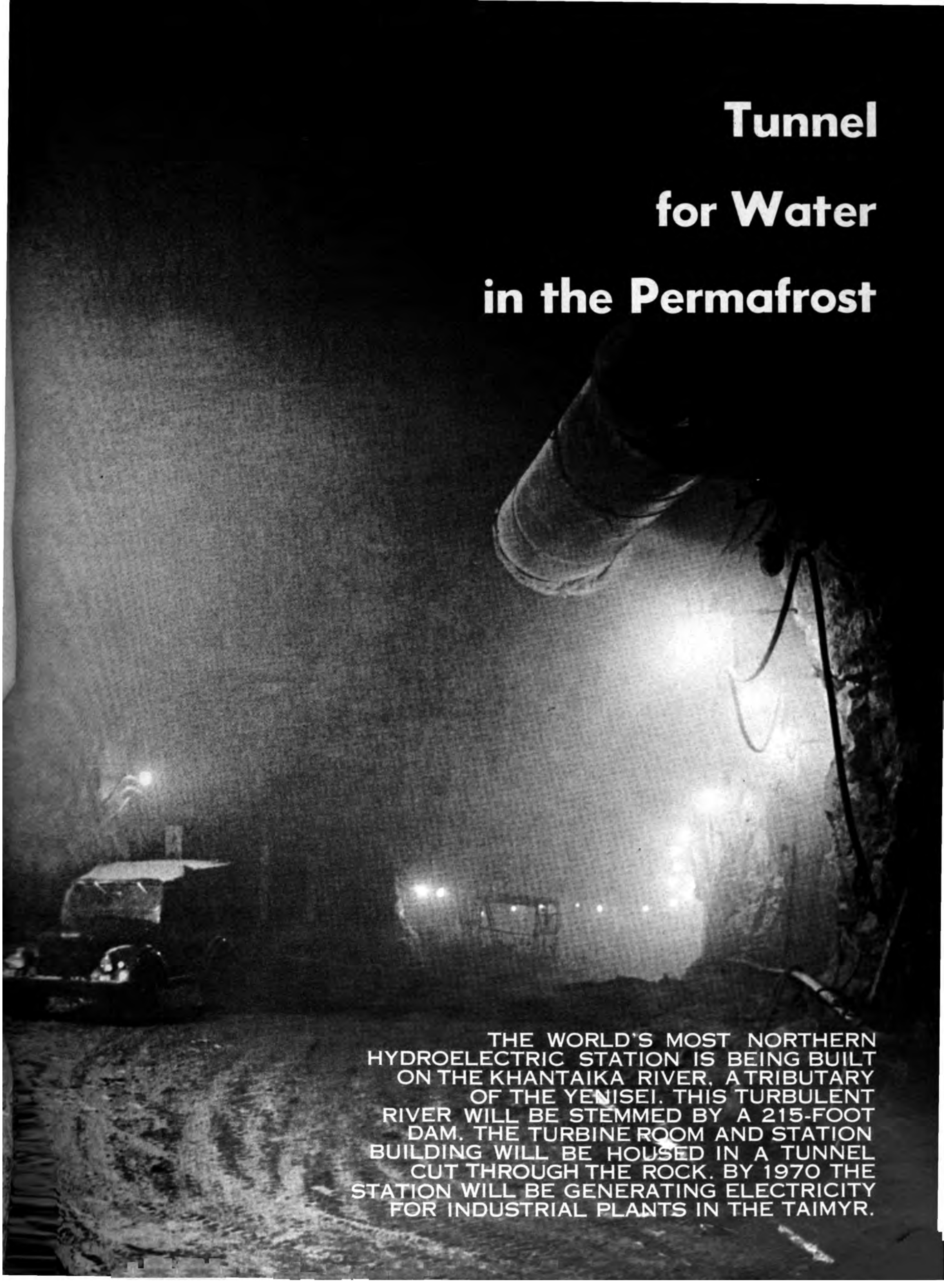



DESPITE INDUSTRIALIZATION, THE FAR
NORTH REMAINS THE FAR NORTH.
THE TUNDRA WILL STILL BE THERE YEARS
FROM NOW. THE REINDEER SLEIGH,
WHICH IS USED BY BOTH CONSTRUCTION
WORKERS AND THE LOCAL INHABITANTS,
WILL ALSO REMAIN. THIS IS A GOOD
NIGHT FOR TRAVEL; THE AIR IS CLEAR,
AND YOU CAN SEE AHEAD. MOST NIGHTS
YOU HAVE TO FORCE YOUR WAY
THROUGH A SOLID WALL OF SNOW.


White
Silence



Tunnel for Water in the Permafrost



THE WORLD'S MOST NORTHERN HYDROELECTRIC STATION IS BEING BUILT ON THE KHANTAIKA RIVER, A TRIBUTARY OF THE YENISEI. THIS TURBULENT RIVER WILL BE STEMMED BY A 215-FOOT DAM. THE TURBINE ROOM AND STATION BUILDING WILL BE HOUSED IN A TUNNEL CUT THROUGH THE ROCK. BY 1970 THE STATION WILL BE GENERATING ELECTRICITY FOR INDUSTRIAL PLANTS IN THE TAIMYR.



An Ordinary Day in an Unusual City

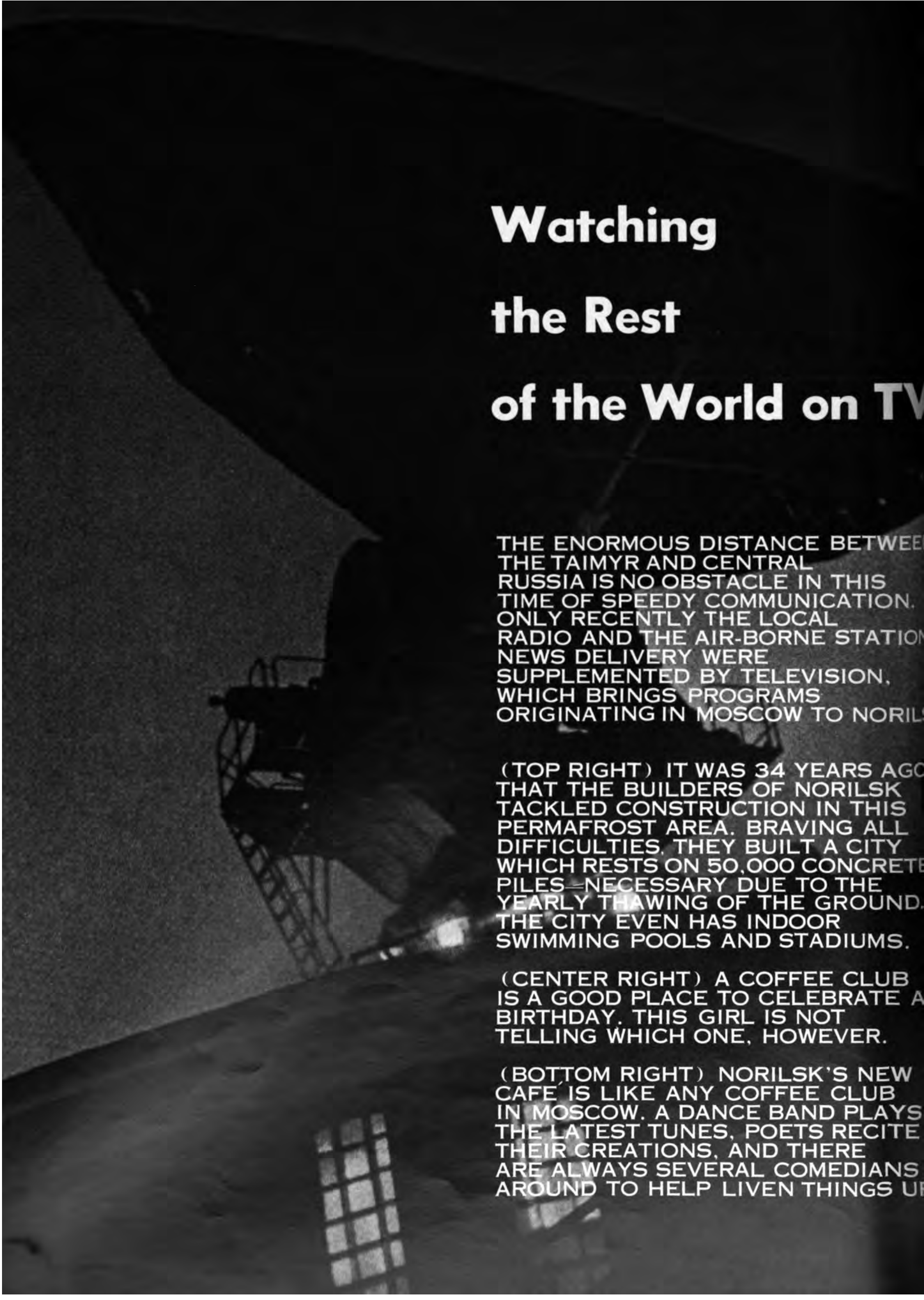




IN THIS PART OF THE WORLD THE FIRST THING YOU DO WHEN YOU GET UP IS TUNE IN THE WEATHER REPORT ON THE RADIO. THIS IS MOST IMPORTANT. NOT ONLY WORKING CONDITIONS BUT EVEN THE TIME SPENT TRAVELING FROM PLACE TO PLACE DEPENDS ON THE WEATHER. ON THE AVERAGE THERE ARE 150 DAYS OF BLIZZARDS EACH YEAR, SO WEATHER REPORTS ARE SELDOM CHEERFUL.

ADA LEVINA IS CHIEF OF SUPPLIES FOR THE KHANTAIKA POWER PROJECT. THIS IS QUITE A JOB IN A PLACE WHERE PERMAFROST AND THE GREAT DISTANCE FROM LARGE INDUSTRIAL CENTERS MAKE THE PROCUREMENT OF THE SIMPLEST ITEM A MAJOR UNDERTAKING. THE NUMBER OF POSSIBLE DIFFICULTIES ARE INFINITE. HER OFFICE IS ALWAYS CROWDED WITH PEOPLE WHO WANT SOMETHING— AND RIGHT AWAY. THE CURIOUS THING IS THAT THEY USUALLY GET IT, THANKS TO ADA'S ABILITIES.





Watching the Rest of the World on TV

THE ENORMOUS DISTANCE BETWEE
THE TAIMYR AND CENTRAL
RUSSIA IS NO OBSTACLE IN THIS
TIME OF SPEEDY COMMUNICATION.
ONLY RECENTLY THE LOCAL
RADIO AND THE AIR-BORNE STATIO
NEWS DELIVERY WERE
SUPPLEMENTED BY TELEVISION,
WHICH BRINGS PROGRAMS
ORIGINATING IN MOSCOW TO NORIL

(TOP RIGHT) IT WAS 34 YEARS AGO
THAT THE BUILDERS OF NORILSK
TACKLED CONSTRUCTION IN THIS
PERMAFROST AREA. BRAVING ALL
DIFFICULTIES, THEY BUILT A CITY
WHICH RESTS ON 50,000 CONCRETE
PILES—NECESSARY DUE TO THE
YEARLY THAWING OF THE GROUND.
THE CITY EVEN HAS INDOOR
SWIMMING POOLS AND STADIUMS.

(CENTER RIGHT) A COFFEE CLUB
IS A GOOD PLACE TO CELEBRATE A
BIRTHDAY. THIS GIRL IS NOT
TELLING WHICH ONE, HOWEVER.

(BOTTOM RIGHT) NORILSK'S NEW
CAFÉ IS LIKE ANY COFFEE CLUB
IN MOSCOW. A DANCE BAND PLAYS
THE LATEST TUNES, POETS RECITE
THEIR CREATIONS, AND THERE
ARE ALWAYS SEVERAL COMEDIANS
AROUND TO HELP LIVEN THINGS UP



They Have Fun by Themselves







OPENING THESE REMOTE REGIONS TAKES PLENTY OF MANPOWER. THE YOUNG ENGINEERS OF NORILSK, TALNAKH AND SNEZHNOGORSK HAVE ALREADY WON THEMSELVES REPUTATIONS FOR THEIR DISCOVERIES AND INVENTIONS. IN 1965 THEY DESIGNED AND BUILT THE COUNTRY'S FIRST INDUSTRIAL INSTALLATION FOR THE FLUORIDATION OF DRINKING WATER IN NORILSK.





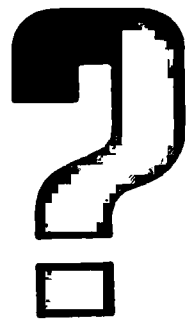


Life in the Tundra Is Taking Root

A BABY IS BORN IN NORILSK. FOR HIM AND OTHERS OF HIS GENERATION THE SIXTIES WILL BE ANCIENT HISTORY. HIS ELDERS WILL TELL HIM OF THE HARDSHIPS THEY ENDURED DURING THESE PIONEERING DAYS. PERHAPS HE WILL FEEL A PERSONAL LINK WITH THE PAST WHEN HE IS TOLD THAT THE MATERNITY HOSPITAL WHERE HE WAS BORN OPENED IN 1968, THE YEAR OF HIS BIRTH.

DOES A DIALOGUE WITH SPACE SPELL DANGER TO US

By Gustav Naan
Member of Estonian Academy of Sciences



Astronomers have for years been sounding space, hoping to catch signals that might confirm the hypothesis that extraterrestrial civilizations exist. British astronomers recently recorded radio signals from sources some 100 light years away from the Earth. The unusual nature of these signals gave reason to assume they were of artificial origin. The extraterrestrial correspondents inferred by that assumption were christened "little green men." Professor Anthony Hewish of Cambridge University thought that it would be folly for us terrestrians to answer signals and thereby attract the attention of more powerful beings whose reactions were unpredictable.

Professor Hewish does not exclude the possibility—much easier to live with—that the mysterious signals come from "something" rather than "somebody," from hypothetical "neutron stars," so-called "white peas."

Academician Gustav Naan, a prominent Soviet scientist, gives his own view of the nature of these mysterious signals and of the danger of answering them.

SOMEONE or something is radioing from outer space on frequencies approximately those of one of our television channels.

But is it a someone or a something? Our impatience to know is understandable, but we shall have to wait for an answer. Neither of these assumptions can yet be substantiated.

Some 30 years ago interplanetary and interstellar communication was science fantasy. Only two decades ago it was a purely theoretical consideration. Today it has obviously become a practical problem.

The space age has made it a practical problem. Manned space flight leads us to believe that we may, in the foreseeable future, make contact with civilizations on other planets.

Omnipotent science is swiftly turning fantasy into reality, unpleasant reality sometimes. Two or three decades ago a serious discussion of a treaty banning military uses of space would have been found only in science fiction novels. Now it is stark reality. Perhaps it is only mental inertia that prevents us from realizing that we should be discussing communication with space civilizations, too, on a serious international level, as Professor Hewish proposes.

Our present radio telescopes are sensitive enough, in principle, to catch signals not only from powerful natural sources but from incomparably weaker artificial sources created by possible civilizations nearby. Accepting this, the question that naturally follows is,When? Their signal may not come for centuries, but it could come tonight. And it could also be that we shall never make contact with an extraterrestrial civilization.

But if it could happen tonight, then why hasn't a signal come already? For instance, from the aforementioned "little green men"? The question is quite natural. Among reasonable interpretations of the strange signals, there is always the possibility of their artificial origin.

Several years ago strange signals from the STA-102 radio-source

made scientists suspect that they were radiated by some extraterrestrial civilization. But a thorough checkup led to the conclusion that a distant quasar was the source, an example of how a "someone" phenomenon turns out to be a "something."

The strict periodic regularity of the signals can, in principle, be explained without recourse to the hypothesis that they come from intelligent beings. Astrophysics knows objects whose material can pulsate. They may also revolve. And, last, judging by the information available, eclipses may be involved, too. The curve of the latest signal recordings very much resembles the curve, described in textbooks, which shows the alteration in the brilliance of the stars called eclipsing variables. But a confusing element in every case is the unusually short period—a little over a second long. This may be due to the exceptionally dense state of matter. Then it may be a white dwarf ("white pea") or even—and more likely—a neutron star. The first type of star is well known to astronomers, while the existence of the second is still a theoretical prediction. Perhaps this was a first observation of a neutron star? For specialists this version is almost as intriguing as the "little green men." Not for the public at large, of course.

That is why we ought to examine this least probable version of "little green men," not in terms of specific, recently discovered objects,but with the general problem of extraterrestrial contact in mind.

Who Are "They"?

Should we or should we not answer the signals? That is the problem in a nutshell. Professor Hewish says we should not.

Doesn't his fear of civilizations on other planets derive from the tragic experiences of life? Indeed there still are people who argue whether mankind's suicide is technically possible. And one or two decades from now (and perhaps even tomorrow) somebody will invent a weapon even more horribly destructive than nuclear rockets. And following that one will come others still more devastating. We can only speculate on what they will be like, a way to destroy the heredity code, perhaps, or to induce whole armies or whole civilian populations to commit suicide, and possibly something even more horrible.

The tragedy of the situation is that science is developing very fast, while social thinking lags dangerously behind. It is vital that we bring our social thinking up to date. It is high time we realized that the idea that war can settle anything is a terrible anachronism, a lunatic survival of the preatomic age. There are other ideas that need rethinking, many of them, but this is the most immediate. So should we or should we not answer their signals?

But who are "they"? The answer to this question is what our decision depends on. I told a lady friend of mine—a very keen-witted person—about the "little green men" and asked her:

"Do you think one could fall in love with the little women on Planet X? They are green, you know."

"Of course, one might fall in love with them, but the question is whether one can really love them," she said.

That is probably the point. Let us put aside the question which rouses heated debate: whether beings on other planets can resemble us and whether biological evolution has developed in them the need for love. We have no extraterrestrial data on that subject. Love is a very complicated business of interest and understanding. Let us tackle the problem more generally. Do we have reason to be interested in each other? Will we understand each other? These are the two most important questions in the problem of space contact.

Are these neighboring civilizations we establish contact with likely to be at a higher or a lower stage of development than ours? Weighing the analyses of science writers who have long been arguing the question, we conclude it is highly unlikely that we shall come in contact with beings more foolish than we are. The probability is that we shall meet civilizations on a higher, probably a much higher, level of development.

If this is so, then we can imagine three hypothetical reactions toward us, determine our attitude with respect to each possibility, and decide whether we should or should not answer their signals.

Reaction No. 1: There is interest and understanding. In other words, they want to know more about us and show that they mean us well. This version seems to be ideal: They supply us with valuable scientific, technological, artistic and all other information and warn us against dead-end directions or fatal mistakes—say, show us where the future course of science is leading, or warn us against activities that may contaminate the environment or even destroy the human race. And so on.

However, there may be a "but" here, rather vague and indefinite, nevertheless a "but." Maybe several buts. Do we learn from other people's mistakes? Doesn't each and every one of us have to get his own bumps? Indeed,we learn our lessons so poorly from our own human history. And another "but": A rose without thorns is not really a rose. Would this very easy way to progress not lessen our interest in life and thinking, in technology and art? They say that hares, to develop normally, need wolves to chase them. And we are chased by difficulties.

Reaction No. 2: There is understanding but no interest. In other words, they show their good will, but we do not interest them. This is probably the most distressing, but quite real, possibility. If they have advanced by millenniums (and they could have left us even further behind), then they will probably look at us the way we look at ants, as creatures with very rudimentary intelligence. What could we teach ants, and what could we warn them against?

Reaction No. 3: There is interest in us but no understanding. We interest them but from a purely practical, for instance, gastronomic, viewpoint.

There may be another, a fourth reaction. There is neither interest nor understanding, but we may ignore this possibility, because then the Cosmians will not signal at us at all.

So there seems to be three versions: a satisfactory but boring one, a distressing but safe one, and a dangerous but thrilling one.

The Game Is Worth the Candle

The reader must already have drawn the conclusion that I am an even more determined opponent of contacts than my colleague, Professor Hewish. No, I am not. I am decidedly in favor of such approaches. The game is worth the candle; to enlarge our area of knowledge, it is worth chancing boredom and overcoming distress and fear. Boredom is not so formidable. Distress is much harder to cope with. (What? You want us to play up to these "green people"? That's too much!) Most difficult is fear: We must overcome it without knowing what we fear.

This last possibility needs to be looked into in more detail. In the first place,if an extraterrestrial civilization does have the technical resources to locate us, we have no way of hiding anyway. But that is not the main thing. Man is continuously expanding spheres of communication, realizing that this is the theme of his development. People have always striven to break through their isolation, well aware that they will stagnate otherwise. Sooner or later this problem must inevitably expand to spacewide proportions. It may have already. The more those we meet differ from us, the more useful and stimulating the contacts are. Let them be "green." We don't mind.

Having established a cosmic contact, we shall, more likely than not, be dealing with highly intelligent beings, and this meeting may help us understand our status in space, our place on the ladder of cosmic evolution. Things look altogether different when seen on a considerably altered scale. Many of our most trusted concepts, shifted from a daily or a historical scale to one of cosmic magnitude, become absurd,and the reverse is also true.This is one of the beneficial aspects of discussing space prospects. It makes us take a broader look at things.

As I have said already, we ought to see our place in the evolutionary scheme in larger scale. Religion tells us that man is the summit of creation, that God will never create a more perfect creature. We often apply this simplistic view uncritically to the scientific picture of the world. We are the product of a definite social, biological and cosmic evolution. The inorganic stage of cosmic evolution led to the biological stage, and the biological stage to the social stage. What next? We don't know. But it would be naïve to think that this is the last stage. The ladder of cosmic evolution can, in principle, include an indefinite number of steps. The idea of the absolute superiority of our stage of evolution (just as of everything that is terrestrial, "ours"!) is certainly one of the most unsophisticated illusions. We all strive for self-preservation, and we are right to do so.

Ichthyosauria strove toward the same thing;but we must bear in mind that if they had succeeded, we would not be here today. The ichthyosaurus stage,as the highest stage,would have been permanent —permanent stagnation. But this is precisely the wisdom of nature. Stagnation cannot be perpetuated.

In short, I maintain that fleeing from knowledge will lead us nowhere. If highly developed extraterrestrial civilizations decide to establish contact with us, they will discover us no matter how well we hide. And from them we shall learn a host of things essential to our continued existence. They will tell us, I believe, that there is a long history of life, development and progress in store for the human race. The time allotted us on the cosmic scale is not over yet. For we are still so imperfect, so far from having exhausted the possibilities inherent in the social stage of evolution.

There are other possibilities, too, and some very promising ones. Can't we count on mutual understanding with strangers from other planets? Unfortunately we have a great deal of difficulty reaching mutual understanding on our own planet. The number of large and small barriers is great indeed. There are social, racial, generation and many other barriers. And despite it all, mankind keeps striving for community, for peace and mutual understanding. A meeting with an extraterrestrial civilization should give our human race the feeling of its oneness.

And this is worth the risk.

So what are they: "green little men" or "white peas"? They are probably the same "white peas" again. For them to be "green little men" would be too good to be true!

Courtesy of Literaturnaya Gazeta



People's Commissar of Foreign Affairs Maxim M. Litvinov.

MISSION TO WASHINGTON

ZINOVI SHEINIS, JOURNALIST AND HISTORIAN, HAS WRITTEN A BIOGRAPHY TITLED "MAXIM MAXIMOVICH LITVINOV: REVOLUTIONARY, DIPLOMAT, MAN," TO BE PUBLISHED BY THE POLITICAL LITERATURE PUBLISHING HOUSE, WITH AN INTRODUCTION BY ANASTAS I. MIKOYAN.

IN PREPARATION FOR THE BOOK, THE AUTHOR USED LETTERS AND OTHER UNPUBLISHED DOCUMENTS FROM THE USSR ARCHIVES OF FOREIGN POLICY, THE INSTITUTE OF MARXISM-LENINISM AND FOREIGN SOURCES, INCLUDING COLUMBIA UNIVERSITY. HE ALSO RECORDED ABOUT ONE HUNDRED INTERVIEWS WITH LITVINOV'S COLLEAGUES AND OTHER SOVIET STATESMEN.

THESE ARE EXCERPTS FROM THE CHAPTER "MISSION TO WASHINGTON."

By Zinovi Sheinis

ON NOVEMBER 7, 1933, when the Soviet Union was celebrating the sixteenth anniversary of the October Revolution, the *Berengaria* cast anchor in New York harbor. A navy launch approached the liner and took off a stout, medium-sized man in a dark topcoat and the then popular broad-brimmed hat and white scarf. He carried a cane and a briefcase.

Gathering speed, the launch headed for shore, and a few minutes later the man in the topcoat, People's Commissar of Foreign Affairs of the USSR Maxim Litvinov, landed in New York.

Ivan Divilkovsky, the Secretary General of the People's Commissariat of Foreign Affairs, who together with the head of the Comissariat's Press Section Konstantin Umansky had accompanied Litvinov to America, wrote his wife in Moscow on November 13, 1933:

"While we were still on board ship in New York, *Papasha* (Daddy —Litvinov's party nickname in the czarist underground) was attacked by newspapermen and cameramen. Umansky and I were just swept aside, and for a whole hour it was a veritable madhouse. This occurred in quarantine, on an island in the Hudson River. The morning was wet and misty. We could not see New York from where we were. Only later, when we were passing the Statue of Liberty in a launch, did we see, through the mist, the skyscrapers far off on the other bank. . . .

"Beginning at the ship, Daddy was surrounded by eight plainclothes men, tall as steeples, of enormous breadth and all chewing gum, or so it seemed—according to everything we had read, that was what they were supposed to be doing. The newsmen did not leave us alone even on the launch—some had managed to get on

board, while the cameramen of some company or other hired a second launch and followed alongside, blocking off the view of the city. Camera lenses were constantly trained on Daddy. The launch took us to a pier among the commercial docks of New Jersey. This is a suburb of New York, but like all of its suburbs, it is as big as a normal-sized European city. A special train was brought to the very pier and left immediately for Washington, but first it had to force its way through a solid wall of journalists. Some cameramen even got on the roof of the train. Their manners were really American—they flung themselves at Daddy, shook his hand, shoved, shouted, demanded that he take off his hat and smile, bow, say a few words, and so on. . . ."

Thus began Litvinov's mission to Washington. But before it became possible, a radical readjustment had to take place in American society and in the world—events that gave millions of people reason for concern.

Tour of Inspection

In the late twenties more and more people in America, especially among the intellectuals, were trying to achieve a better understanding of the world around them, both American and non-American.

In June 1929 a delegation from the United States led by Senator Tydings came to Moscow. There were six senators in the group. Five were from the U.S. Senate; the sixth was State Senator Frank L. Fay of Pennsylvania.

These senators demonstrated how much they knew about Soviet life the very next day after their arrival. They had been accommodated at the Hotel National, and their guide and interpreter was Alexander Chumak from the People's Commissariat of Foreign Affairs. Chumak had spent his teens with his father in the United States, where he finished college. He had a fluent command of English and was well informed on things American. When Chumak called the hotel, Senator Tydings exclaimed, much surprised, "This is the second day we're in Moscow and we haven't seen any uprisings."

The American press at the time was full of reports of hunger and rioting in the Soviet capital.

The delegation was received by Alexei Rykov and Jan Rudzutak, then respectively Chairman and Vice Chairman of the Council of People's Commissars; Valerian Kuibyshev, Chairman of the Supreme Council of National Economy; Anastas Mikoyan, Minister of External and Internal Trade; and Maxim Litvinov, acting People's Commissar of Foreign Affairs.

Senator Fay asked for a concession, first to a railway car factory and then to a shoe factory, promising that he would "shoe all of Russia." His request was politely turned down.

The Senators asked permission to see the country, and Litvinov asked them where they wanted to go. They listed the Crimea, the Caucasus and some other places.

Accompanied by Chumak, they flew south in a tiny K-4, taking a whole day, with stops, to get to Mineralnye Vody. From the windows of the plane they studied the scenery, the rolling collective farm fields and the mills and factories in construction, taking notes on everything. From Mineralnye Vody they flew to Baku, along the Caspian coast. Below them the Caspian steppelands stretched to the horizon. They admired the view and then asked their pilot to do some trick flying. He took them for a spin, and they jocularly observed that Soviet Russia had good airmen. All of a sudden, the pilot took the plane down to the deserted edge of the shore and scooted off. The senators were flabbergasted. They even thought that they had been brought to this uninhabited place to be killed. The pilot, who had made a dash for the bushes some distance off, returned as suddenly as he had gone and took the plane up again. The senators guffawed through the remainder of the flight, cracking jokes about this "forced landing."

The tour continued to Gagra, Tbilisi, Sochi, Batumi, and Sukhumi. In Tbilisi Filip Makharadze, Chairman of the Georgian Council of People's Commissars, gave a reception for them. Present were a group of the centenarians for which this mountain republic is famous. They filled their drinking horns with wine, rose and started to sing. The Americans were told that the ancients would go on singing until they had drained their drinking horns dry. Not to be outdone, the senators drained their bottles and sang "Ol' Man River." They had to be carried to their cars because they couldn't sit up, let alone stand. And throughout the party they kept saying: "What a wonderful country!"

The senators saw Georgia and the Crimea and returned to Moscow. Litvinov asked them whether they liked what they had seen. They said they were enthusiastic and if they were granted concessions, everything would be grand. Litvinov replied that Soviet Russia was no longer granting concessions, that it proposed to rely on its own powers. What it wanted was trade on a mutually advantageous basis and official recognition.

The world economic slump that began in 1929 made American business circles take a more sober look at the Soviet Union. Moscow began attracting businessmen, economists, political commentators. In June 1929 the then famous public figure and publicist Johnson arrived in the Soviet capital. He had visited Moscow before and had written a number of friendly articles for American newspapers and magazines. Now he had come to meet Soviet statesmen. Mr. Johnson talked to Mikhail Kalinin, President of the Central Executive Committee of the Soviets about the conditions of Soviet agriculture and the possibilities of Soviet-American cooperation; to Valerian Kuibyshev, head of the planning bodies, about Soviet industry; to Anastas Mikoyan, then People's Commissar of Trade, about Soviet-American trade relations.

The visits to the new Russia brought results. New sprouts began appearing on the soil turned up by John Reed, Albert Rhys Williams[1] and other Americans.

Dnieprostroi and Autographs

Thousands of Americans came to the Soviet Union to work. Hundreds of engineers went to Dnieprostroi, among them the world-famous hydraulic engineer Hugh Cooper, who came to Moscow in November 1929 as consultant on the project. Incidentally, he also came to see what the Russians could do; American officialdom respected his views.

At the Chief Concession Commission Cooper discussed the terms of his employment. Then he was received by Litvinov. This cheerful stubby man made a good impression. Litvinov asked him many questions about the political situation and mood in the USA. It was a lively conversation, without restraint. All aspects of Cooper's work in the Soviet Union had been decided, but the American still seemed to be bothered by something. Litvinov noticed that and said: "Is there anything else you would like to say? Don't be shy."

A little embarrassed, Cooper said:

"Your government let me see the Diamond Fund. I was very much impressed. Your aristocracy and czars certainly knew how to accumulate treasures. I saw a blue cigarette case there with sapphires and a diamond in the middle. This lovely thing once belonged to a Russian duke. I will do a first-class job on your Dnieper power project; when I get it built, I would like to have this cigarette case for a present. What do you think?"

Litvinov said that he couldn't decide a matter like that but that he would inform the Soviet Government of Cooper's request and support it.

Nothing more was said. But when the Dnieper power station was finished, Cooper was decorated with the Order of the Red Banner of Labor and presented with the cigarette case from the Diamond Fund.

Letters flowed to the Soviet Union from the United States. They were written by workers and farmers, writers and businessmen, old men and women, children and college teachers. Nearly all of them were addressed to either Central Executive Committee President Mikhail Kalinin or to People's Commissar of Foreign Affairs Maxim Litvinov. Many of the letters were naïve, but they reflected America in all its diversity and complexity.

A Mr. Stevens of Pennsylvania wrote that he wished the Soviet Union well and would like the title honorary consul of the USSR in Philadelphia when the socialist republic was recognized. He asked for an autographed picture of Kalinin.

Mr. Stevens' brother wrote Kalinin that he was a graduate of the Naval Academy at Annapolis and offered his services as a consultant on naval matters.

Others, like William Smith of Brooklyn, asked for no more than an autographed photo of Kalinin and expressed the hope that diplomatic relations would soon be established. Writer Glenn W. Blodget said he was doing all he could to spread the truth about the USSR and also asked for an autograph, explaining that he had three Russian autographs already: Leo Tolstoy's, Maxim Gorky's and Maxim Litvinov's.

The letters of the Americans reflected the mood of large numbers of people. But something had to happen that would spur not only the average American but also the ruling circles, on which, in the final analysis, any change in American policy depended.

This "something" was not long in coming.

Telegrams began arriving at the State Department from the Far East in the late afternoon of September 19, 1931: Japanese armed forces had attacked Manchuria, occupied its capital Mukden and then the entire country.

The more farsighted American politicians regarded the events in the Far East as the start of Japanese expansion into other parts of Asia, which were of "special interest" to American business.

To a certain extent Japanese Far Eastern aggression hastened the recognition of the Soviet Union. Nor could the sucesses of the

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[1] John Reed (1887-1920), a journalist, came to Russia in 1917. His book *Ten Days that Shook the World* was one of the first reports on the October Revolution and was published in many countries. Its preface was written by Lenin. On one of his trips through embattled Russia, Reed fell seriously ill and died. He is buried in Moscow's Red Square.

Albert Rhys Williams (1883-1962) was an American publicist and the author of many books on the Soviet Union.

Soviet Union and the growth of its industry and culture be ignored. The USSR was becoming a great power, and that had to be acknowledged. American commentators were talking about Soviet achievements and potentials.

Interview with Stalin

In late April 1932 the American journalist Ralph Barnes, whose information official and business circles in the United States relied on, put a number of questions to Joseph Stalin.

On May 3 Stalin answered Ralph Barnes' questions.

Barnes indicated there was interested talk in the United States of sending an unofficial American trade representative to Moscow, accompanied by a staff of experts, to explore the possibilities of closer trade ties between the two countries. He asked what the attitude of the Soviet Government would be.

Stalin told Barnes that the USSR welcomed trade representatives and experts of countries that had normal relations with the USSR. The Soviet Government would look favorably on such a move by the United States.

Barnes questioned Stalin more closely on the kind of orders American firms could place in Russia. Stalin gave no figures but said that the volume of orders could be increased several times. Then the journalist came to the question that interested American ruling circles most of all. There was an impression in the United States, he indicated, that both the Soviet and American governments had had the same reaction to the events in the Far East of the last several months and that, in general, the gap between Soviet and American policies had therefore been reduced. "What is your opinion on this matter?" he asked.

Stalin answered that it was very difficult to grasp the essence of American Far Eastern policy. As for the USSR, it had followed and would continue to follow a firm policy of maintaining peace.

Barnes emphasized the similarities between the United States and the Soviet Union—territorial dimensions, no internal trade barriers, the profound good will between the American and Soviet people—and asked if it were not possible to convince both peoples that a military conflict between the two countries must never occur under any circumstances.

Stalin replied that there was nothing simpler than convincing the peoples of both countries that mutual annihilation is both harmful and criminal. As for the USSR, no proof was needed that both its people and the government hoped that no military conflict between the two countries would ever take place under any circumstances.

It was May 1932. The world was on the eve of great and complicated political events. Many could already foresee them and, in particular, one retired diplomat who kept a keen eye on what was happening—Georgi Chicherin, former USSR People's Commissar of Foreign Affairs.

He expressed his prediction of future events in a rather curious way. Chicherin was then living on a quiet Moscow street in the house that had once belonged to the famous banker Vtorov. One evening he invited his former foreign office assistant Boris Korotkin, who was working in the Central Executive Committee Secretariat, to visit him.

"You know," said Chicherin, "I should be getting ready to move."

"Why?" asked Korotkin.

"This house will probably be the American Embassy soon."

"You think so? But we have no diplomatic relations with the United States."

"No, but we will soon," answered Chicherin.

The next day Korotkin told Mikhail Kalinin about the talk.

"Well, you know," answered Kalinin, "Chicherin's right. That's what it's coming to. But he needn't worry. We'll find him new quarters. That mansion really might do for the American Embassy."

"The Soviet Government Is Stable"

Ralph Barnes was followed soon after by an American trade mission to Moscow. The businessmen looked at the capital, its streets and its people, put many questions to the representatives of the People's Commissariat of Foreign Affairs and asked to be shown the factories under construction. They saw recent villagers carting earth out of the excavations with wheelbarrows and asked why machines were not being used. They were told that there were no machines yet but that there soon would be.

Moscow met the delegation hospitably but with a certain reserve, not drawing any hasty conclusions about its intentions. The foreign office held a reception in honor of the Americans. Opinions were frankly exchanged. Mr. Bendix, by no means the least important member of the delegation, said: "The USSR not only can take from us; it also can give us something. We both need a mutually profitable exchange."

The industrialists wanted to know whether Soviet Russia would build textile and leather factories. American statistics said that Russia produced less than half a shoe per person per year. Did she expect her people to continue wearing bast sandals? The business-



Maxim M. Litvinov on board the Berengaria, *sailing to America on a historic mission.*

Litvinov with Romain Rolland, a very good friend, on Red Square in 1935.



men looked at people in the street, visited the city's outskirts. They left with the feeling that Russia could not get along without American goods.

The businessmen returned to the United States, and soon the Foreign Affairs Commission of the House of Representatives drafted this resolution:

". . . Whereas all reports from all reliable unprejudiced sources and persons of the highest standing and repute, such as William Bois Thompson, Colonel Raymond Robbins, Governor J. P. Goodrich, General Graves, Major Slaughter, and a great many others, clearly show that the Soviet Government is stable; and

Whereas all nations have recognized and have established diplomatic and commercial relations with the Soviet Government of Russia; and

Whereas the Soviet Government of Russia on innumerable occasions has expressed the desire to reestablish friendly relations with the United States; and

Whereas due to the delay in bringing about a friendly relationship between the United States and the Soviet Government of Russia the citizens of the United States have been deprived of beneficial commercial intercourse, which has been taken advantage of by the governments and peoples of other countries: Therefore be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,

That the President of the United States be, and is hereby requested to direct the Secretary of State to enter into negotiations with the Soviet Government of Russia so as to reestablish friendly and diplomatic relations between the United States and Russia." [2]

The Mission of Colonel Robbins

The American presidential elections were held in November 1932. The new president was Franklin Delano Roosevelt.

The very fact that Roosevelt was elected was, to a certain degree, a guarantee of change in the country's foreign policy. His campaign speeches had made the point that the United States was affected by international events and could not remain indifferent to what was happening in Europe or other parts of the world.

A broad outlook and sober approach to world problems were the qualities that made Roosevelt one of the outstanding statesmen of the twentieth century.

Thirty days after Roosevelt's inauguration, events in Europe moved American politicians from words to action. On January 30, 1933, Adolf Hitler, the head of the Nazi Party, became chancellor of Germany. The openly aggressive program he proclaimed boded no good for either Europe or America. Divided Europe, weakened by interminable parliamentary shifts and *coup d'état*s in France, Poland and other countries, with the League of Nations passive, would be helpless against rising militaristic Germany if no barrier were erected against fascism. The consequences for the United States as well would be irremediable.

This also hastened America's recognition of socialist Russia.

Roosevelt wanted new contacts, and in the spring of 1933 he sent Colonel Raymond Robbins to Moscow.

This was not Robbins' first visit to Russia. He had been present at a May Day demonstration in Moscow in 1918. The Red Army men who had just driven back the troops of Kaiser Wilhelm on the approaches to Petrograd marched through Red Square, past the hastily erected grandstands decked with bunting and pine twigs. They marched with their feet wrapped in rags and in torn shoes. Robbins, marveling, looked at the men, at their inspired faces, at Lenin, who was also in the grandstand, and wired President Wilson from Moscow, recommending recognition of Soviet Russia. On returning to America, he wrote an objective book about our country. In the new power he saw a force capable of changing the face of an enormous country, and he tried to prove that Lenin's Russia was worth dealing with.

And now fifteen years later, Robbins was once again in the Soviet Union. Before leaving the United States he had applied to the Soviet Government for permission to visit the Ukraine and Siberia. The permission granted, he did not linger in Moscow but traveled through the country. He visited factories, saw tractors coming off the conveyers, turbines assembled, ore smelted.

When Robbins returned to Moscow, he also visited factories there. In the shops of the Caliber Tool Plant he asked for a micrometer and looked closely at its trademark—he wanted to make sure that it had been made right there at the plant.

On May 1, 1933, Robbins again attended a Red Army parade and a demonstration of working people. He stood on the Lenin Mausoleum and saw columns of tanks, armored cars and Red Army men, young, strong and well clothed. Planes flew overhead. It was fifteen years since he had been in Red Square. He wanted to fathom the inner world of the Russians. What mighty idea moved these people?

On May 13 Robbins was received by Stalin, the second American Stalin had received.

Robbins summed up his impressions of the Red Square demonstration. The 1918 demonstration, he said, appealed to the proletariat of the whole world; it called for revolution. Now the marching men, women and youth were saying: This is the land we are building and we shall protect it with all our strength.

Stalin agreed with Robbins' evaluation. The American touched on the problems that interested him most: the ability and inventiveness of Russian workers, the state of agriculture, public education, the training of children and young people.

Then the talk turned to the subject invariably discussed at meetings of Russians and Americans: relations between the two countries.

Robbins: Senator Borah, one of my best friends, is a loyal friend of the Soviet Union and has championed recognition.

Stalin: That's true, he is doing much to establish normal relations between our countries. But so far, unfortunately, he has not been very successful.

Robbins: I am convinced that the facts of life are now exerting a pressure greater than at any time in the past fifteen years to establish normal relations between our two countries.

Stalin: That is true. But there is one fact that is proving an obstacle. Britain is against it, I think (*laughs*).

Robbins: That is undoubtedly so. Still the situation is forcing us to look first to our own interests, and the conflict between our own interests and those toward which we are being impelled by other countries is now more than ever impelling America to establish such relations.

Then they touched on Litvinov's statement in Geneva on the definition of the attacking side and many other questions. In conclusion Robbins said that he was and remains an optimist. He also said that he believed in the leaders of the Bolshevik Revolution fifteen years ago and continues to believe in them. "I regarded and still regard Lenin as the greatest human being, the greatest leader in all world history," he said. He gave assurance that he would do his best to promote the plans for friendship and cooperation between the United States and the Soviet Union.

Roosevelt Makes the First Move

By autumn Roosevelt thought public opinion was ripe. The question of diplomatic recognition of the USSR came before the Senate. Of the ninety-six senators only two were opposed.

On October 10 Roosevelt made public a message addressed to Mikhail Kalinin offering to establish diplomatic relations. Roosevelt wrote:

Since the beginning of my Administration, I have contemplated the desirability of an effort to end the present abnormal relations between the hundred and twenty-five million people of the United States and the hundred and sixty million people of Russia.

It is most regrettable that these great peoples, between whom a happy tradition of friendship existed for more than a century to their mutual advantage, should now be without a practical method of communicating directly with each other. The difficulties that have created this anomalous situation are serious but not, in my opinion, insoluble; and difficulties between great nations can be removed only by frank, friendly conversations. If you are of similar mind, I should be glad to receive any representatives you may designate to explore with me personally all questions outstanding between our countries. Participation in such a discussion would, of course, not commit either nation to any future course of action, but would indicate a sincere desire to reach a satisfactory solution of the problems involved. It is my hope that such conversations might result in good to the people of both our countries.[3]

Soviet newspapers carried Roosevelt's message on October 21 along with Mikhail Kalinin's reply.

I have received your message of October tenth. I have always considered most abnormal and regrettable a situation wherein, during the past sixteen years two great Republics—The United States of America and The Union of Soviet Socialist Republics—have lacked the usual methods of communication and have been deprived of the benefits which such communication could give. I am glad to note that you also reached the same conclusion.

There is no doubt that difficulties, present or arising, between two countries can be solved only when direct relations exist between them; and that, on the other hand, they have no chance for solution in the absence of such relations. I shall take the liberty further to express the opinion that the abnormal situation, to which you correctly refer in your message, has an unfavorable effect not only on the interests of the two States concerned, but also on the general international situation, increasing the element of disquiet, complicating the process of consolidating world peace and encouraging forces tending to disturb that peace.

In accordance with the above, I gladly accept your proposal to send to the United States a representative of the Soviet Government to discuss with you the questions of interest to our countries. The Soviet Government will be represented by Mr. M. M. Litvinov, People's Commissar of Foreign Affairs, who will come to Washington at a time to be mutually agreed upon.[4]

Several days later a cable arrived from Washington. It said that the President of the United States was ready to meet the Soviet diplomat early in November.

Litvinov prepared to leave.

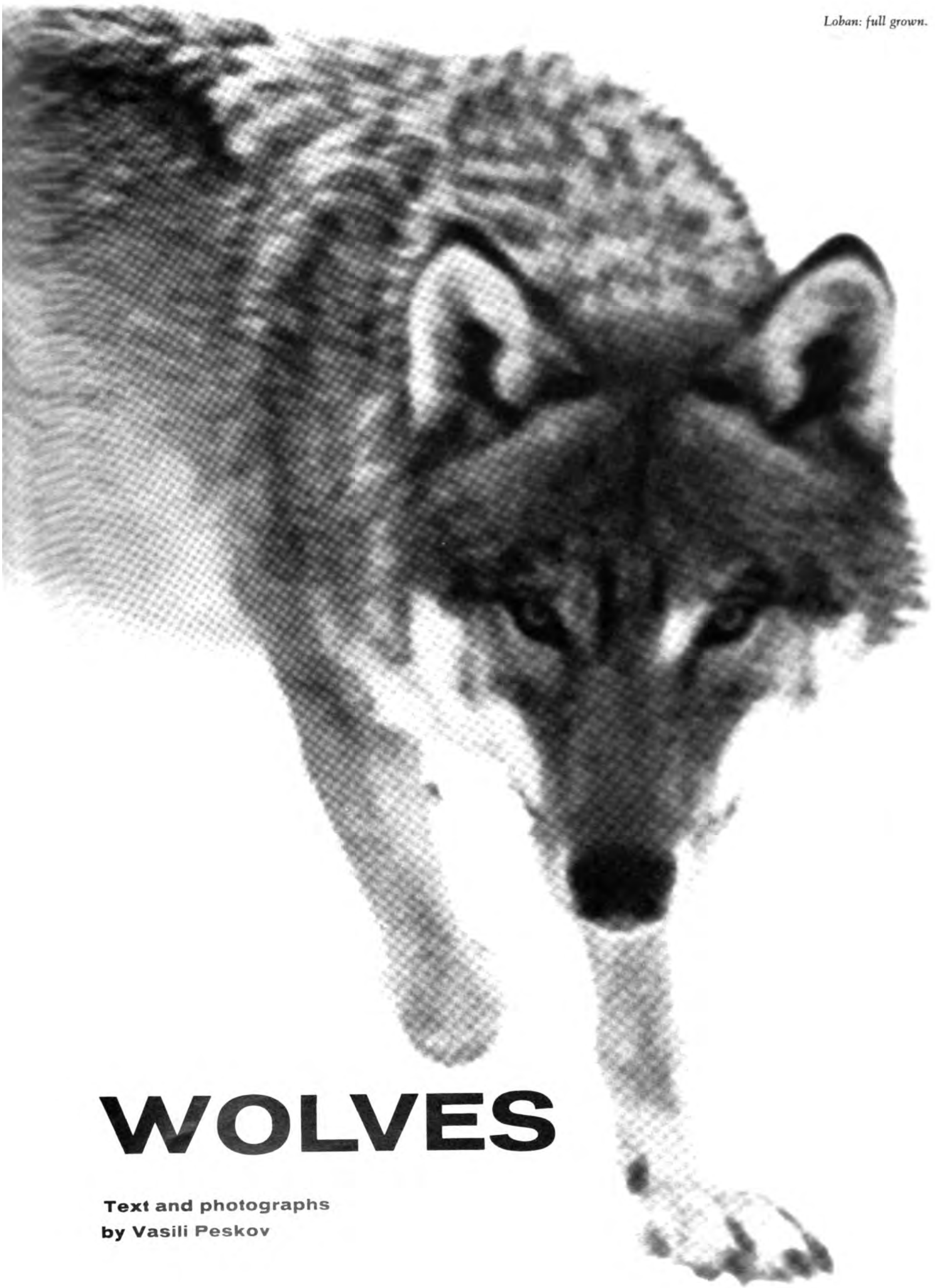
(to be continued)

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[2] 72nd Congress, 1st Session, House, Joint Resolution 372, April 22, 1932.

[3] Stanley S. Jados, Documents on Russian-American Relations; Washington to Eisenhower (Washington, D.C.: Catholic University Press, 1965), p. 92.

[4] Ibid., pp. 92-93.



Loban: full grown.

WOLVES

Text and photographs
by Vasili Peskov

WOLVES



Loban: childhood.

SHUBIN IN HOSPITAL. Attacked by wolves," said the telegram that arrived just before the May Day holiday.

Georgi Shubin is an old friend of mine. We both know whatever there is to know about wolves. So they had gone after him. Georgi used to be a professional hunter. During the war he was a scout. Now he follows an unusual sort of occupation. For a long time I had been sure something would happen to him. It had.

On the suburban train to Petushki a group of young men were heatedly discussing something over a game of cards. I caught the word "wolves" and moved over.

"A wolf came in through the window. Shubin reached for his gun, but he was too late. . . ."

The story sounded farfetched. I wondered what had really happened.

At the hospital familiar eyes smiled at me out of a cocoon of bandages. I leaned over to put my arm around Georgi's shoulder.

"Loban?"

"That's right. Mashka started it. Then Loban pitched in. I'll have to get rid of them. It's a pity."

The surgeon came in. All doctors like to joke when their patients are getting better. This patient also liked to joke. He talked about the amount of "tailoring" the surgeon had had to do. But I realized that a week ago there had been no joking.

I first saw Loban seven years ago. He came from a den a hunter found in the forests near Ryazan. There were six snarling brown cubs in it. A wolf means a bounty, cub or not. In some places the bounty includes a sheep as well as money. To find a wolves' den in the forest is practically like finding buried treasure.

For some reason the Ryazan hunter took pity on two of the six wolves. After a reasonably quiet trip in a wicker basket the two cubs landed at the studio near Vladimir, where motion pictures about wild animals are filmed. Georgi examined them. One, he decided, was going to make a handsome wolf. There was talk at the time of shooting a wide-screen color movie of *White Fang*. The well-known black and white version now seemed uninspired to the makers. Dogs played the wolves in the picture. Besides, with new camera techniques and present-day communication, the film could be shot in Alaska, with Americans taking part. A good pack of wolves was needed. The big clumsy cub with the oversized forehead promised to be the hero of the picture.

That was how this Ryazan wolf started on his film career. He was named Loban. His brother, an undersized cub, was christened Romka. The two wolves began to live among people and soon became used to captivity.

A dog named Dymka was assigned as foster mother. Her puppies had recently been taken away from her, so she showered her care and maternal caresses on the two wolf cubs. Dymka had her canine methods of education. It was amusing to see her left at a loss by the wild ways of her adopted cubs. But she did not stand on ceremony. Disobedience was punished by a sound thrashing. This was very much in the order of things for the cubs. They would have received the same treatment from their own mother. They grew attached to Dymka and obeyed her even when they were twice her size.

A year later a small wolf cub was brought to the studio near Kaluga, and Dymka again undertook the kindergarten training. When after a year the cub, called Mashka, grew to the size of Loban and Romka, all three were moved into the same enclosure.

Georgi went in several times a day. Each time dog and wolves behaved exactly the same way. They twisted and turned about like quicksilver, rubbed against his boots, and leaped up to try to lick his face. He always used a firm but affectionate tone. His hand ran over their coats and rubbed their heads. The other hand always held a chunk of meat ready for the animal that did best. They all competed for it. Slowly but surely Georgi taught them the habits and behavior required of animal actors. Every effort was made to accustom the wolves to people, lights and the whir of the camera. There must be no risk that the wolves would hurt someone during the filming. An experienced trainer who loves animals does not find any of this particularly difficult. What complicated matters here was that the animals had to remain wild. The film makers did not want wolves that were as affectionate as dogs.

"He's walking a tightrope," I used to think, as I watched Georgi springing to separate two fighting wolves or pulling out of their jaws the chunks of meat he had just flung to them. The wolves growled and bared their fangs but gave way.

Although the new version of *White Fang* was shelved, the wolves did not remain unemployed. There was a big pack of them now, and film roles were found for each one. Scenarists like wolves. In nature pictures they add spice to the plot, make it dramatic. In the past few years makers of ordinary feature films have begun to demand wolves for the same reason—to add drama—a wolf tracking a man, a pack tearing a fugitive to pieces. A lot of nonsense is repeated about wolves. But their reputation forces us to believe they will attack human beings. As we watch, we wonder how such a scene was filmed.

How do you make a wild beast do what the scenarists and director want him to? During the filming, the trainer resorts to all sorts of tricks that are based on a knowledge of the biology, habits and character of the animal. Usually, however, the secret behind the astonishing shots is a chunk of fresh meat. For this chunk of meat a hungry wolf will run wherever you want, through snow or water. The viewer has the feeling the wolf is on the hunt. Attacking a man? The same hunger drives the wolf to rush toward the meat, but the meat is hidden, and a man bars the way. The result is a scuffle that looks exactly like an attack. Not many actors would agree to bar the way of a hungry wolf. That can be done by an understudy, however. And what better understudy than the trainer himself?

All kinds of roles fall to wolves. Usually the wolf "plays" a role only once. Surrounded, the beast is brought down by a shot in front of the camera's eye. The viewer is satisfied; the villain has been finished off.

There are film stars among wolves, however. Loban played in 20 films. Recall the wolf's eyes glowering across the width of the screen in *War and Peace*? That was Loban.

Loban and Mashka usually acted together. Like regular film stars they traveled to many places by plane and train. They were photographed in the Voronezh Reserve, in the country near Moscow, and on Bars-Kelmes Island in the Aral Sea. The two strong, clever animals quickly understood what was wanted of them. As the cameras kept grinding away, the wolves went through their paces, displaying the habits inherited from their wild ancestors, killing horses, deer and sheep and attacking wild boar. They were never allowed to eat their prey. Someone would always run up, drag the carcass away and toss them the familiar chunk of meat. This was a very risky operation. Georgi was the only one who could do it, and the wolves always gave in to him.



Winter in the taiga.

An animal can sense what a person is like. You must have noticed a dog calmly watching some people and growling at others. Wolves clearly show their likes and dislikes. Georgi was the only one they allowed into their enclosure. They always jumped up to greet him, rubbed against his boots and tried to catch his eye. Georgi was proud of their devotion. We often stood together outside the enclosure watching them. "Pretend to hit me," he would say. I raised my arm abruptly. The hair on their necks bristled; they bared their fangs, and four eyes burned through me. Georgi had nothing to worry about during filming with such dangerous animals as wild boars—so long as his wolves were around.

Loban and Mashka were husband and wife. They became attached at their first meeting. I have never seen so touching a union among other animals. Wolves by nature are never unfaithful to each other. Male and female both feed and train the cubs. Often when one dies, the other will not seek another mate to the end of its days. Loban and Mashka retained these traits in captivity.

Sometimes the wolves gave concerts in the evening. Sitting on their haunches, they would lift their eyes to the moon, and then the world, from the cricket under the porch to the cow snuffling in the barn, would pause fearfully to listen to the long, sad and sinister howls. The wolves were singing their songs of love and the hunt. They would fall silent as suddenly as they began.

Every spring for four years Mashka had cubs. They were taken away at once and turned over to Dymka to be brought up, so Loban and Mashka do not know anything about their children. I believe three of them played the role of "dead wolf" for the movie camera, three were given to the Durov Animal House, and one litter of five was sold to an exhibition in Moscow.

That spring Loban and Mashka were awaiting a litter for the fifth time. Signs of an impending addition to the family were evident in April. Now heavy, Mashka no longer wanted to play. She unceremoniously dragged her mate by the scruff of the neck, forcing him to dig a lair in the enclosure. Loban obediently did what she wanted. He dug up the earth and regurgitated half-digested meat for her.

The attack came the evening of April 20 when Georgi went in to visit. Loban rubbed against his leg, as usual, and jumped up to lick his face. Mashka lay in a corner of the enclosure. Georgi bent down to scratch away last year's fur around her nipples. Every year at this time he helped her get ready to give birth. This time the she-wolf was unfriendly. Georgi should have been more cautious. But he wanted to turn her unfriendliness into a joke and flicked her on the nose. What happened next took no more than 10 seconds. Mashka leaped up and with a roar fastened her teeth in his arm. An instant later Loban was at her side. To a wolf that can bring down a horse in one leap, a human being was small change. Shouts of "Loban! Loban!" did not help. Georgi called for assistance. Before the men had time to run up and unfasten the gate, Loban had leaped back and now stood filling the passageway, protecting Mashka behind him.

* * *

We discussed the reason for Loban's treachery. Devotion to man is one thing and continuation of the species something else again. Loban heard the call of the she-wolf. Protect me, she said. He had no higher duty than that. "I'm not angry at the wolves. It was all perfectly natural," said Georgi.

I telephoned Petushki yesterday. Georgi was able to come to the phone.

"I'll be discharged in a few days. The wolves? I don't know. I'm very attached to them. Mashka cubbed on May 8. I'll see what I can do when I get home."

There really isn't anything to be done. The film careers of the wolves are over. The best thing that can happen to Loban and Mashka is to be sent to the zoo. Their cubs? The cubs will stay. Georgi Shubin will start training them. That's been decided.

AROUND the COUNTRY

GLASS VERSUS TIME

A glass dome built over the Aishabibi Mausoleum in Kazakhstan, an architectural heritage of the Middle Ages, has a volume of 52,972 cubic feet. Eight centuries of sun and rain have taken their toll. The glass dome will slow down time's erosion.



INTERBYTMASH '68

The International Exhibition of Municipal and Household Equipment (Interbytmash '68) was held in Moscow last summer with 21 participating countries. In the Soviet section more than 1,400 machines and instruments were exhibited by 300 industrial agencies and 60 design and research institutes. Visitors saw the latest in transport facilities, modern machines for cleaning inhabited areas and roads, equipment for laundries and dry cleaners, still and movie cameras, household appliances and furniture. Specialists were on hand for consultation.

A feature of the exhibition, which drew hundreds of thousands of visitors, was the "national days" that spotlighted the products of a particular country. Many mutually profitable contracts were signed during the course of the trade show.



HOME ARMORY

Alexei Moskalenko, an engineer at a sugar refinery near Vinnitsa, the Ukraine, has been collecting weapons for years. Decorating the walls of his apartment are a stone hatchet 3,000 years old, Ukrainian Cossack sabers, a late eighteenth century musket and old swords worn by French, English and Indian commanders. Moskalenko has presented many of his finds to state museums.

SNOW BOOTS FOR WOMEN

The Zarya Taimyra Collective Farm is situated on the Taimyr Peninsula, the northernmost projection of Siberian Russia. Native to the region are the Nenets, Dolgans, Yakuts, Evenks and other small nationalities. The collective farm is famous for its deer breeders, hunters, fishermen and craftsmen. Like many other cooperatives on the peninsula the farm makes *untaiki* (winter top boots for women) from the light and strong skin of deer. The local women decorate this original footwear with varicolored beads in traditional patterns. Last year the farm sold 300 pairs of *untaiki*. Recently a shoe designer from Moscow was called in to help the local women work out new models that will combine the best features of the traditional and modern. The new *untaiki* will be shown at the USSR Economic Achievement Exhibition in Moscow.



AUTOMATIC BOOKINGS

An electric computer center, operating from the terminal building on Leningrad Avenue in Moscow, will speed up booking for passenger flights on Soviet planes. The center has been developed around the Minsk-23 computer.

WIND AND SNOW CITY

The Arctic city of Norilsk, north of the 69th latitude, in West Siberia, lives up to its name—"the pole of wind and snow." Last year this young city of metallurgists set a record for the three decades since it was founded. Even in spring, in April, there were only six days of respite from blizzards. They strike the city as late as June.

FOUNDATION TESTER

Ordinarily to find out whether the ground on which a large structure is to be built is suitable, wells or deep pits have to be drilled. A new machine, designed by engineers in the Ministry of Geology, makes this laborious job unnecessary. The machine forces a metal probe—a rod with measuring instruments—as deep into the earth as 100 feet. As the instruments are driven into the ground, they supply information on the consistency and water content of the ground.



CLEANING OUR RIVERS

A campaign is under way to clean up the country's rivers polluted by industrial sewage. Funds appropriated by the government for purifying rivers, lakes, ponds and water reservoirs are already bringing results. For example eight huge settlement tanks have been built at the Solikamsk Pulp and Paper Combine (the Urals), and now practically clean water runs from the combine's shops into the Kama River, the largest tributary of the Volga.

ANCIENT PINE GROVE

One more primeval monument to nature, a grove of unique pines, has been found on the Black Sea Coast of the Caucasus. The pines are the same variety as those growing on Cape Pitsunda (Georgia), thought until now to be the only place in the country where this type of ancient flora has survived. The newly discovered grove covers about 250 acres, half the size of the Pitsunda preserve. But the grove is apparently more viable. There are no traces of disease on the trees, and its healthy young seedlings grow well. The grove has been declared a preserve and lumbering is prohibited.

A ROAD ACROSS THE DNIEPER

A new cable-car railway in the city of Dnepropetrovsk, the Ukraine, connecting the elevated part of a large residential area with Komsomolski Island (a recreation area in the middle of the Dnieper River), makes the trip over the river fun. But there is also a practical angle—it cuts travel time to the island.

SEARCHING OUT THE PAST

A party of historians, archeologists, architects and civil engineers, accompanied by TV reporters, has made trips to remote and virtually inaccessible parts of Kazakhstan. The purpose of the expedition, headed by Academician Alkei Margulan, was to register and describe the architectural monuments in these regions and to determine which are in need of restoration. Civil engineers in the group collected samples of the stones, mosaic and decorative tiles used by the ancient architects.



ACCLIMATIZING CHICKENS

An acclimatizer for 10,000 chickens has been built on the Polyarnaya Zvezda State Farm, Murmansk Region (northern part of the European USSR). The building provides an artificial climate. When they are four months old, chickens raised in this building can be moved to Arctic poultry breeding farms, where they quickly adjust. The problem of acclimatizing chickens for the Arctic is a very practical one. Delivering fowl and eggs to these parts from southern areas is a very expensive business. Acclimatizers will help produce 30 million eggs this year.

NEW RESORTS

Mineralnye Vody, the famous resort area in the Northern Caucasus, for a long time has not had enough room for all the people who want accommodations. The same is true for the sanatoriums of Kislovodsk and Yessentuki. New sanatoriums and rest homes are now being built in Mineralnye Vody. Eventually there will be two or three times the present number of accommodations, enough to take care of 1,900,000 people annually. Some of the new vacation spots have already been built: a resort boarding house called Iskra in Pyatigorsk, the sanatorium in Yessentuki, named for the fiftieth anniversary of the October Revolution, and Dubovaya Roshcha Sanatorium in Zheleznovodsk.



WEAPON FOR MEDICS

A linear electron accelerator is in operation at the Byelorussian Research Institute of Onocology and Medical Radiology. The sophisticated machine, designed for the treatment of serious diseases, occupies several halls of a special building.

NATURE LOVERS

The first station for young nature lovers was started in Moscow 50 years ago. Now there are millions of school children who work seriously at selection and agrobiology, collect tree seeds and medicinal plants, raise animals, birds and fish and decorative horticulture.

Last summer the young nature lovers gathered in the Soviet capital for the jubilee of their organization's foundation. They had the use of 10 pavilions at the USSR Economic Achievement Exhibition. The children were greeted by Mikhail Prokofyev, Minister of Public Education of the USSR, by Academician Jan Peive and other distinguished people.

HOTHOUSE HOBBYIST

Dmitri Kushnarev, in the town of Karabash, Southern Urals, receives hundreds of letters and parcels and sends out almost as many. All of them have to do with horticulture, his hobby. Kushnarev works as a foreman at the local mining and metallurgical combine. He has planted an orchard of fruit trees (almost the best in town) and built a hothouse in which he grows rare varieties of plants and flowers, including a fig palm, a lemon tree and other plants native to the tropics and subtropics.

Most recently Kushnarev has been trying to raise ginseng in the Urals. He got his seeds from a friend in the Soviet Far East and instructions by correspondence from the USSR Academy of Sciences.



AMPHIBIOUS CAR

An amphibious cross-country vehicle on wheels is known as *the* KVPA. It can pull logs and tow timber in water. The vehicle's six wheels (the machine has a six-wheel drive) are equipped with tires of changeable pressure, which make it possible for the car to travel over any terrain. A water-jet engine propels the machine in water. The tow car comes with a winch and a device to push logs from the riverbank into the water so that they can be towed. The cross-country vehicle does 20 miles an hour over hard ground and 6 miles an hour in water. It can scale steep banks, climbing easily from the water.

FORECASTING WEATHER BY PHONE

Some 10,000 Muscovites are now getting their weather forecasts by phone. An automatic forecasting machine gives them the weather locally and in the country's resort areas. The venture is experimental, to test the virtues of the new auomatic forecaster and to find out how many of the machines are needed to service the whole city.



ORE MUSEUM

A museum, with exhibits on the discovery and development of the Kursk Magnetic Anomaly, has been set up in the town of Gubkin. This anomaly is the biggest deposit of iron ore in the European part of the country and was discovered by accident when the compass needle of an airplane flying over it began to vibrate wildly.

The new museum's collection includes more than 3,000 samples of the rock and ore found and such items as a mammoth tusk, a skull of a hairy rhinoceros, the vertebrae of an ichthyosaurus, all of which were dug up when the local pits were worked.



RESERVOIR FOR KUBAN AREA

Construction is underway, in Krasnodar Territory (southeastern part of the European USSR), of the big Kuban reservoir, which will flood an area of 275 square miles. The complex will include a dam on the Kuban River, a spillway with a sluice gate for ships and water outlets for the irrigation system. The unit will take seven years to build. Construction workers are presently clearing the land of this future lake in the steppes.

HIGH SCHOOL COMPUTER TRAINEES

School No. 444 in Moscow emphasizes mathematics. Besides general education subjects, it gives students the fundamentals of higher mathematics and electronic computer technology. The school has its own computer center—for practice work. The more capable pupils receive, besides their graduation diplomas, certificates which give them the right to work as programmers. The teaching is done by computer specialists.

LINOLEUM FROM SHALE

Chemists of the shale-processing combine in Kokhtla-Jarve (Estonia), in cooperation with their Riga colleagues, have worked out a method for producing linoleum from fuel shale. The shale linoleum is cheaper than the usual varieties and much stronger. It can take a variety of colors and all kinds of patterns.

SEA LIONS RETURN

Sea lions have returned to the Komandorski Islands, in the Bering Sea. By the end of the last century they had almost been wiped out by hunters. For a long time hunting these animals was forbidden in the Soviet Far East. Now there are more than 10,000 male sea lions on the islands, some of them weighing as much as 2,000 pounds.



USING "COLD FIRE"

Medieval alchemists called phosphorus "cold fire" because it glows in the dark. They knew very little about the other properties of the substance, and not much more has been discovered since. Ukrainian scientists have found a whole class of related compounds, the phosphorus isocyanates, with interesting qualities. They can serve as the base for producing substances used to extract heavy metals out of ore and to obtain toxic chemicals and medicines.

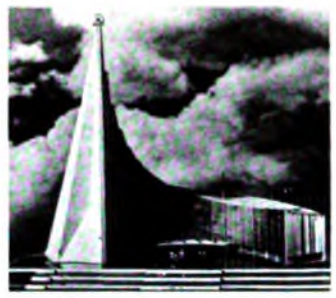


UNDERWATER TREASURES

Geologists and mining experts find themselves referring more and more often to sea maps, because most of the mineral wealth of the earth seems to be located at the bottom of the sea. The Soviet Union has done the first experimental underwater extraction of minerals (not counting Caspian Sea oil). It has been working ilmenite-rutile-zirconium sand in the Baltic Sea with a superpowerful dredger, the *Vyborgsky*. The dredger has also been used in experiments to dress minerals aboard the ship during heavy seas.

MAN-MADE EARTH-QUAKE

A group of scientists in the Turkmen Republic (southern part of Soviet Central Asia) have done an unusual experiment. They shook a four-story apartment house with vibration machines. The test, which lasted about two minutes, showed that this building, assembled to meet civil-engineering standards for seismically unstable areas, will stand in an earthquake of 9-point intensity.



PREPARING FOR EXPO-70

Architects have already drafted the plan for the Soviet pavilion at EXPO-70. This will be the first World's Fair to be held on Asian soil—in Osaka, Japan. The three-storied pavilion will look like a steel banner unfurled, its staff crowned by a sickle and hammer. One of the points of interest will be the Soviet Far East and Siberia. The main section of the pavilion will be dedicated to Vladimir Lenin, as 1970 will be the centenary of his birth.

FASTER RAIL TRAVEL

The train trip between Moscow and Leningrad is getting shorter all the time. On the day express train *Aurora*, that runs between Moscow and Leningrad the trip takes 4 hours and 59 minutes. The *Aurora* travels at an average speed of 100 miles an hour.

RARE OPERATION

Miranda Yakic spent eight months in the Moscow Institute of Traumatology and Orthopedics. This 15-year-old girl from Wellington, New Zealand, was born without fingers on her left hand. Vladimir Blokhin, the famous Soviet surgeon, decided to help the child. He built up fingers by grafting her own tissue. While in our country, the girl mastered Russian, learned to skate and developed a love for drawing. "I keep exercising my fingers all the time," she says, "and they are becoming stronger every day."



WINTER SPORTS IN ODESSA

Cold and snowy winters are a rarity in Odessa, on the Black Sea Coast. Winter sports-minded Odessans bemoan the fact and envy those living in more northern cities. However the situation will soon be corrected. Work is now underway on a large indoor skating rink, more than 330 feet long and 200 feet wide. It will accommodate 5,000 spectators for performances by figure skaters, ice reviews, and later—when Odessa organizes a team—hockey matches.



ANOTHER TRANSATLANTIC RUN

The new transcontinental air route between Moscow and New York is open. Aeroflot (Soviet airlines) and Pan American have reciprocal flights. The first plane to make the trip from Moscow was an IL-62 airliner designed by Sergei Ilyushin. It carries 120 passengers.

The Moscow-New York route is now the second air route from the American continent. The first is the Moscow-Montreal run. Reporters, waiting at the Sheremetyevo International Airport for the first guests from New York, met two Boeing 707 planes instead of one. One carried the representatives of Pan American and journalists, the other the paying passengers. More people made the first trip over than had been expected.

RACOON FRIEND

Hunters caught a small raccoon in the Ussuri River Valley (the Soviet Far East) and gave it to school girl Alena Dubchenko. The little animal quickly made friends with Alena and followed her around everywhere. When the curious would surround the pair, the raccoon would nestle up to the girl. It did not hibernate—raccoons are supposed to sleep through the winter—but stayed awake and ate voraciously. But when spring came the raccoon was lonely and pining away. So everybody concerned decided to let it go back to the woods.

AROUND the COUNTRY

BY LEONID LENCH



THE TESTING OF SNOW MAIDEN



Leonid Lench writes articles, plays, scenarios, but he first won fame with humorous stories.

ZOYA ESIKOVA was nineteen and head over heels in love. Not the love you're thinking of. She was in love with the stage. Her friends said she was a carbon copy of the great tragedienne, Komissarzhevskaya, in her youth. When Zoya graduated from drama school, she received the highest mark one could get for her Ophelia soliloquy and thereupon became the happiest person in the world.

"I'm happy," Zoya said to herself. But then she was taken on by a theater company and changed her mind. Now she thought, "I'm unhappy."

For no interesting roles came her way. Mostly she had to play minor parts, usually the pretty but empty-headed teenager you find in many modern plays, each character an imitation of the one before. In the conversations Zoya carried on with herself, "I'm unhappy" developed into a more specific lament: "I'm the unhappy victim of a stereotype."

Orest Bezloshadnykh, the theater's head director, was said to have "flashes of brilliance." He addressed all the actresses, even the oldest and most respected, as "darling," came to the theater with his shoes unlaced and screamed like a stuck pig at rehearsals. He loved showing awe-struck actors how to "do this bit." Sometimes what he showed them was good, at other times bad, but it was always brilliant. Nobody liked him; many were afraid of him. To talk to him



Drawing by Alexei Tertyshnikov

about theater matters or to complain was painful and useless. The yellow catlike eyes would immediately flash with the madness of genius, and in self-pitying tones the voice would mutter something unintelligible. He would flee without waiting to hear the end, flinging over his shoulder, "I'll think about it, old girl."

But everyone knew the head director was incapable of thinking about anyone or anything but himself.

One day, after rehearsing the latest play, in which she again played a scatterbrained teenager, Zoya found herself walking home with lanky Goga Rzhavin, who was cast, as usual, in the role of a pleasant young man with unexpected intellectual depth. Goga strode along beside Zoya, splashing her stockings with cold muddy water. He had a heavy tread ("like the walk of a commander," the actors said) and wore size 14 shoes.

Zoya winced every time the icy splashes hit her legs and listened absent-mindedly to Goga holding forth on the subject of Bezloshadnykh. Finally she grew tired of the same old talk.

"I couldn't care less," she said with icy unconcern. "Head directors come and go, but the theater remains!"

"Brilliant!" Goga exclaimed. "You're just the one to play Snow Maiden." They were giving children's performances over the school holidays, and he was playing Grandfather Frost. The script was "absolutely brilliant," and the two of them could work it up beautifully. Also the pay was good.

"I don't want to do potboiler stuff like that," Zoya told him.

"What's potboiler about it?" Goga asked indignantly. "It all depends on us. You and I could turn that New Year's tree performance into a real work of modern art. I know for sure you could make something new out of Snow Maiden. Imagine Snow Maiden coming out in stretch pants and the latest hairdo!"

But Zoya refused to be tempted. Then Goga broke down and confessed that his mother was sick, that he had no money to send her to a health resort, and he had hoped to make some on those performances for the kids.

"Day before yesterday, when you were borrowing money from Artyukov, you told him you were an orphan," she said coldly. "I heard you myself. Oh, all right, I'll do it. I'm so sick of those numskulls I have to play all the time. At least there's something poetic about Snow Maiden. We can start rehearsing tomorrow."

Zoya copied out the lines. The part wasn't anything special, but after she had worked at it for a while, she decided it was not too bad. Goga was soon sorry he had chosen Zoya for his partner. Nobody could have been more demanding, faultfinding and dedicated. They rehearsed every day in the theater lobby, after they were through with regular rehearsals, right up to the evening performance.

Finally their première at the Red Rose Club arrived. Zoya reached the club half an hour before they were to go on and immediately started making herself up in the little dressing room behind the stage. She put on a luxuriant flaxen wig that had a braid reaching to her waist. She could hear the children in the auditorium laughing and clapping as they settled in their seats.

"How bright the sun is! I'm afraid I'm going to melt!" She tried out her opening lines.

Zoya was nervous, and when time passed and her partner Grandfather Frost did not show up, she became even more upset.

Only seven minutes left! The audience was getting impatient. Where in the world was Goga?

When there was only two minutes to go, the director of the Red Rose Club appeared in the doorway, all in a stew.

"Your friend Rzhavin has cut my throat!" he exclaimed. "He's probably picking up some money at another New Year's tree show. We can't wait any longer. Listen to that hall! They'll tear down the clubhouse if we don't get started."

Zoya spread out her hands helplessly.

"Children are already gathering in the lobby for the second performance," the director said wildly. "We can't wait a moment longer."

From the hall came an ominous whistling and stamping of feet.

The club director gulped a mouthful of air.

"You'll have to save us," he said, turning a pleading eye on Zoya as she huddled in her chair. "We've got a cotton wool beard, and we'll find a fur coat and a cap for you. Dress up as Grandfather Frost and go on out and calm them down."

"But I'm Snow Maiden!" Zoya moaned.

"The big thing for them is Grandfather Frost. Please dress up and go out. Say something to them—wish them success in their studies, their future careers, anything. Tell them some jokes. Then we'll start handing out presents, and that will take care of the first batch. Otherwise there'll be a scandal. The parents will write to the papers, and I'll get fired. You're my only hope. I'll get down on my knees if you want me to."

The director of the Red Rose Club advanced on Zoya with the obvious intention of doing just that. She sprang to her feet hastily.

"Get the beard!" she said, biting her lips to keep from bursting into tears.

In a daze Zoya put on the white beard and mustache, pasted on cotton wool eyebrows, pulled on the cap and struggled into the sheepskin coat. Then she was out on the stage beside the decorated fir tree. The hall immediately quieted down. In a shaky bass voice Zoya spoke her opening words of greeting. Immediately a mischievous treble voice broke in from the depths of the hall.

"Why are you so small, Grandfather Frost?"

"I'm still growing," Zoya shot back amidst laughter.

She realized her only hope was to keep talking loudly and without pause. So she did just that, saying anything that came into her head. Her audience listened in appreciative silence. The minutes passed. Zoya went on talking, vaguely conscious that she had no ideas for a graceful conclusion.

Suddenly there was a stir in the hall and cries of surprise. Zoya heard heavy footsteps behind her. She turned around and stopped short, her mouth open. There stood Snow Maiden, flaxen wig awry, in a short dress that showed his bare hairy legs and size 14 rubber-soled shoes, a silly grin on his face.

"How bright the sun is," said Snow Maiden in Goga's baritone. "I'm afraid I'm going to melt!"

Zoya started to giggle, and an instant later the hall was rocking with laughter.

They walked home together.

"It couldn't have gone off better," Goga said, with a cautious glance at the silent Zoya. "The director was pleased. 'We've never had such a successful party,' he said. He promised to pay you double, by the way."

Zoya said nothing.

"Want to know why I went out on the stage? To help you. Since that was the way things were going, it had to be turned into a joke, a parody. The kids understood at once and responded. With art it's always like that—you never know when you'll find something or when you'll lose something!"

"Don't you dare talk about art, you miserable potboiler!" burst out Zoya. "And don't you dare walk with me. You go your way, and I'll go mine." She turned away abruptly and plunged into a side street. It was quiet there, with lots of snow and pure, invigorating air, Moscow winter air, just the kind Zoya's agitated soul needed. She walked up and down the street a long time, thinking. Happiness in art, she thought, evidently does not come by itself. It has to be fought for, against people like head director Bezloshadnykh and Goga Rzhavin.

"I'm still unhappy," Zoya continued. "But I'm going to become happy, absolutely going to." That decision made, she set off for home.



THE DAY KIDS ARE HUSHED AND HAPPY

Photographs by Nikolai Rakhmanov

ON NEW YEAR'S EVE the most excited person in the Galkin family was six-year-old Vova. He didn't stop to think what he had or hadn't accomplished during the past year or that he was now a year older. The only thing that worried him was what Grandfather Frost, the Russian Santa Claus, would leave in his stocking.

When he woke the next morning, the sun had already melted the frost on the windowpanes. The glittering decorations on the New Year's tree and the heap of presents underneath it caught his eye. His parents had listened to his broad hints.

The congratulations and thankyous were over quickly—this was a busy day. Mother had her kitchen chores to attend to, and Father had to go shopping. Vova barely had a chance to look over his new toys once again when Mother began to pester him to comb his hair, wash his hands and face and bring this or that. Indeed, by the time he got through helping out in the kitchen, he had done enough pot washing to last him the rest of the New Year. But as soon as his guests arrived, he forgot how tired he was. "Greet your guests properly," Mother cautioned him as he went to the door.









Vova was the perfect gentleman as he helped the snow-flecked little girls off with their coats and gravely shook hands with the boys. There was none of the usual giggling and scuffling. Minutes later Grandfather Frost knocked on the door. Vova's father is not much of an actor, and everybody knew who it was. Still, they were all delighted with the presents Grandfather Frost brought.

Vova's parents wisely left the children to their own devices. They did cock an ear, occasionally, waiting for a plate to crash. The plates stayed whole but not the phonograph records.

"Another one gone," groaned Father.

"Never mind, don't forget what day it is today," Mother comforted him.

"Why don't you say, as you usually do, that it's a good omen?"

Father did, with a somewhat labored smile, as he was very proud of his record collection.

Then came the party. And though no corks popped and no witty toasts were proposed, you knew it was a big day just by looking at the beaming faces of the children around the table. As they gobbled up the cakes, they threw glances time and again at the beckoning fir tree, whose jolly winking lights seemed to be saying, "I'll tell you all about the New Year when you are in bed asleep."

IN THE DISTANCE near the horizon the outline of a rider on horseback stood out clearly against the light of the setting sun. "Look, Marianne, real Wild West," said Arnold Michaelis to his wife. "A cowboy galloping across the prairie." The American family, suddenly homesick, followed the anonymous inhabitant of Irkutsk Region with their eyes for a long while, with a momentary feeling that it would be nice to find themselves back home in New York. Meanwhile, however, this was Eastern Siberia, and there was no telling how soon they would be getting back to Moscow and its cozy old-fashioned Hotel National—let alone New York!

The three-month summer trip across Russia was beginning to tell on the Michaelises. Lisa, their six-year-old daughter, had stood up to it best: She had not been ill a single day, had not fretted at all and she was even more curious and outgoing than her father, who had captivated Eleanor Roosevelt and Adlai Stevenson the first time he met them. Lisa's irresistable charm had made her the envoy plenipotentiary of the Michaelises and the film crew, hence of Encyclopaedia Britannica Films.

Several years ago Encyclopaedia Britannica Films signed an agreement with the Novosti Press Agency to make five educational films about the Soviet Union. The first film was to be general: geography, demography and so forth. The second was to be devoted to agriculture and collective farmers, the third to industry and workers. The fourth film was to be called *Three Faces of Russia.* Its plot followed three lines and had three heroes: a Moscow student, a Georgian woman pediatrician and an Uzbek farmer—people of different nationalities and social strata to convey to some degree the internationalism characteristic of the Soviet Union. And finally the fifth film *Go East, Comrade,* concerned the industrial development of the eastern parts of the country.

Over a year ago Arnold Michaelis, the director-producer, got down to the actual filming. In the summer he was joined by his family: his wife Marianne, his son Dana, his daughter Lisa and the children's nurse Inez. Novosti Press Agency did the organizing and provided the necessary advisory personnel, as well as a film crew.

Arnold Michaelis is a TV producer and interviewer, a former correspondent of the UN, known for his *Chief of State* series of filmed interviews (National Educational Television channels) and his CBS programs *Invitation to Learning* and *Of Men and Books.*

His fifteen-year-old son Dana starred. The idea was a look at the country through the eyes of an American schoolboy. The scene is the Caucasus.





TV and film producer Arnold Michaelis making a documentary on the USSR for Encyclopædia Britannica Films. The young man with him is Novosti cameraman Yuri Spilnyi.

AMERICAN TV PRODUCER FILMS RUSSIA

BY ROBERT TSFASMAN

Television viewers will probably remember his talks with Jawaharlal Nehru, U Thant, Dean Rusk, Archbishop Makarios and other interesting and easy-going interviews with people in the news. He has made several travel films of various countries. "I have always wanted," he says, "to make an objective film about the Soviet Union and thus make my personal contribution to bringing our peoples closer together." When such an opportunity arose, he set off for Moscow.

Nobody in the United States has ever made films of this type about Russia, so that Michaelis was, in a sense, a pioneer TV explorer. At first he thought three or four months of intensive work would suffice, but reality provided much richer and more versatile material than he had expected. Subsequently he said that it was more difficult to learn what Russia was like from books or newspaper articles than any other country. For instance, although he knew in a general way that the Soviet Union lost a great many people in World War II, he only truly comprehended the not-so-remote tragedy when he visited the Piskaryov Memorial Cemetery, where the victims of the siege of Leningrad are buried.

And so it was all the time. Personal impressions broke into the director's original concept of the films and gave him new insights.

Altogether, Michaelis spent over a year in the Soviet Union, and for three months of the time his family was with him. He wanted his wife and children in the films for a reason—to lend liveliness and authenticity to the scenes depicted. The star was fifteen-year-old Dana Michaelis, not a fortuitous choice. The producer-director thought that places and events seen from the viewpoint of a student at the New York Collegiate School would have more appeal for viewers. American school children would see, for example, how their peer and countryman taught Russian children to play baseball and how he enjoyed the other adventures he had on the trip.

Even before the filmed material was finally edited, Michaelis said that he had been impressed with the work of the film crew. He had high praise for the skill of cameraman Yuri Spilnyi and thought the language barrier was not too formidable; the men all spoke more or less understandable English.

Michaelis visited Moscow and Leningrad, Siberia and the Caucasis, the Ukraine and the Crimea. He met a great many people. And he agreed it was not at all difficult to find a common language with them. Hearty, outgoing, a sense of humor—these are the traits Michaelis thinks are typical of both Americans and Russians. He is not going to present everything he saw in rosy tones. But he thinks (and quite correctly, too) that fifty years is a short time. His opinion on the matter was expressed quite graphically.

"Suppose you are baking a cake," he said, "and then, instead of the indicated 45 minutes of baking time, you decide to do with only 20 minutes by turning up the heat. The cake will bake, but a part of it will burn. This is something of what happened in your country's history. You won time, although something did go wrong amidst the haste and hurry. By the way, your people are perfectly well aware of the shortcomings. I met many people with original, keen and critical minds. But they are all optimists, and I share their optimism. From a distance your achievements are even more evident."



Mr. Michaelis spent a year in the Soviet Union. His family joined him for the summer. In Odessa, the Black Sea port.



Six-year-old Lisa was everybody's pet and a small problem. Yuri Kovalenko is amusing her away from the cameras.

Shop talk with a collective farm chairman. The film shows Moscow, Leningrad, Siberia, the Caucasus, Ukraine, Crimea.



THE THREE: MATHEMATICIAN, SOVIE



Yuri Zhuravlev:

SCIENTISTS' MORAL RESPONSIBILITY

By Mikhail Vladimirov

WHEN YURI ZHURAVLEV GRADUATED from high school, Claude Shannon and Norbert Wiener were creating an international stir with the new science of cybernetics.

"I was fascinated by cybernetics despite its many scoffers and decriers. In my fifth year I hit upon something new in the field of algorithms, just a lucky break really.

"I arrived in Novosibirsk, went to Science City and settled in Romantics Street. I liked the name because it jibed with my idea that modern romance is found in science and that most young scientists are romantics."

With so many discoveries already made, the scientist today has to research increasingly complex problems, something Yuri Zhuravlev says he does not regret. He is a scientist with wide-ranging interests, absorbed in many projects and dreaming of a million operations-per-second electronic computer. "For it to be of reasonable dimensions, such a computer," he says, "would have to accommodate ten billion electronic units in each cubic inch of space, a compactness which only the human nerve cell or neuron has." According to him, discrete mathematics, a branch of which he is one of the initiators, can solve this and similar problems.

"I think," says Yuri, "that the man who does most for the future is the one who gives everything he has to the present. I have no patience with misanthropes and recluses. A scientist should rub shoulders with the whole world."



Klavdia Skupchenko:

WE ARE NO RULING ELITE

By Vladimir Milyutenko

THE YOUNGEST of the 1,417 deputies to the USSR Supreme Soviet is Klavdia Skupchenko. She is 27 years old. She lives more than 5,000 miles away from Moscow, "almost at the very sunrise," as the Far Eastern people say. It takes a TU-114 turbojet 11 hours to reach Moscow.

For three years Klavdia served with distinction as a deputy of her regional Soviet. A member of the Social Security and Health Committee, she saw to pension matters, helped people adjust into a comfortable old age and traveled about her region setting up new medical stations.

In her notebook are such entries as: "Personal visit to improve housing conditions; phone the mayor about public utilities for a new district; see the prosecutor to help a young man who has been given too severe a punishment."

The young deputy's reward for her painstaking work was not special privileges but more responsibilities, both large and small.



Zaki Akhmadishin:

SIBERIA IS MY KINGDOM

By Mikhail Petrov

WHY DID YOU come all the way to this windy and wild Siberia, leaving a big city, a comfortable home and your sunny republic behind?' a skeptic once asked me. 'Are you after a fast ruble? Or a government decoration? You're a fool, Zaki. Don't you see they are exploiting your enthusiasm?'

" 'Who are they?' I asked. 'The chiefs? They didn't want to let me go; they wanted me to stay where I was. The government? In my Tataria it has plenty to do besides thinking of Zaki. I came because I wanted to. Here's how it happened.'

"While still at college I decided to build myself up—a drilling engineer should be strong, I thought. I'm on the shortish side, see, and this got on my nerves. Well I was dead set on making up for it by exercise. When I was getting my practical training in the town of Oktyabrsky, I used to run up a steep hill several times, first without a load and then with a heavy knapsack. I was building up my will power, too.

"After graduation I went to work for an oil trust. In Tataria oil is the backbone of industry.

"I spent more than a year at emergency boreholes, then got tired of changing teams and went to see the chief engineer about it. 'All right,' he said. 'No more of this jumping around. We're forming a new team, and you're going to be its leader.'

"I became a real engineer. My head was packed with ideas. Everything went well. And then I had a road accident.

"The diagnosis left me little hope—a bad brain concussion and

EPUTY, OIL DRILLER

When Yuri Zhuravlev and his colleagues were recommended for the Lenin Prize, he submitted a résumé of no more than twenty lines. But it told us that he had received his doctor's degree at 26, had more than 40 fundamental papers to his credit, was in charge of a major department at the Institute of Mathematics in the Science City near Novosibirsk and headed the Young Scientists Council of the Komsomol Central Committee. He is also a proud wearer of one of the ten unique Komsomol badges that cosmonaut Valeri Bykovsky took on his flight into space.

For several years now Zhuravlev has been director of a school for child prodigies and has scouted all over Siberia for mathematical talent. His university lectures have made him very popular with students.

A paper he read at the Cybernetics World Congress in New York won the high praise of Professor McClusky, his official critic.

"We did a great deal of talking with our American colleagues about the scientist's responsibility to mankind," said Dr. Zhuravlev. "It is not important, for example, who defines the properties of a neutron—a Catholic or an atheist, a Frenchman or an American, a man with a white or a black skin. But steel, we must remember, can be used to forge plowshares and lethal weapons, just as nuclear plasma can be a source of tremendous energy for the good of man, or it can wipe whole countries off the face of the earth. We cannot be indifferent to what uses scientific discoveries are put. We must never forget our moral responsibility to the world."

"When I was first elected to the Supreme Soviet of the USSR, I thought professional politicians ought to rule the country," she said. "But I changed my mind soon enough. In my short lifetime I have met 'statesmen' of that kind. They sit silent and solemn, as though performing a ritual of power, and are unmoved by pressing matters of life. These people keep on believing in somebody's great statesmanship, capable of understanding and solving everything. But for us young people, this hypnosis of great names, this ecstasy of confidence is no longer in style. I don't want to entrust the rights vested in me to anybody else. My constituents elected me not to do me honor, but so that I could work in their interests. I continue to work at the plant. I live in the same way as those who elected me. And the very fact that I keep on working at the plant side by side with those who elected me is only for the benefit of my second occupation. If I am the power, so are they. When I handle my crane and they work at their lathes, we are all very conscious of this fact. We are no ruling elite. We are the Soviet power itself."

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paralysis on the left side. They sent me to Sochi and Matsesta sanatoriums for massages, mineral baths and other treatments. The accident was considered a production injury since the smashup had happened on my way home from work, and the trust paid for all the expenses. I was discharged from the hospital an almost total wreck, and the doctors said I had better relax and not try any hard work for years. An old man at 25. . . . I didn't like that at all!

"The trust offered me a very good job as process engineer. I was supposed to study production processes and make improvements. The pay was good, but I was sick at heart. I was accustomed to the tough work of a drilling engineer, with all its challenges. The prospect of gathering dust in an office didn't suit me. I began to work on myself, exercising and taking special treatments. It took a great deal of effort, and had I built up my will power in vain?

"A year and a half later I felt I could go back to drilling.

"A great oil sea had been discovered in Siberia by then. That was where I wanted to be. My folks at home did not believe I was well again. But in Western Siberia men with my experience were badly needed.

"I sent them a letter, and they flashed back a telegram, 'Come quick, travel expenses paid.' That is how I became drilling foreman on an Ust-Balyk oil field and then chief engineer of the expedition. A big job—1,000 workers in my charge and 20 drilling rigs to take care of—more than enough to do. The boys call me 'Oil King' because most of my boreholes give good results. Well, if I'm 'King,' Siberia is my Kingdom."

NEXT ISSUE

Will simplification of the divorce laws encourage a frivolous attitude toward marriage and result in an increase in broken families? How is the father of a child born out of wedlock made responsible for the welfare of his offspring? What are the rights and duties of the parents of adopted children? Who pays alimony and how much? Are children required to care for their aged parents? These are a few of the many questions thrashed out in the public discussion preceding the adoption of the new Soviet law on marriage and the family.



Vardzia is a Georgian town hewed out of a mountain. Twelfth and thirteenth century architects designed apartments inside a cliff, connected them with a series of tunnels, built temples decorated with frescoes and fashioned stairways on the cliff's face to give the town's inhabitants access to the outside world. This architectural monument of the olden days is a popular tourist attraction. Also in the February issue are an illustrated feature story on students who spent their winter vacation in a village and a comparison of leisure time activity of American and Soviet young people based on a UNESCO questionnaire.



Tracking wild boar isn't easy. The hunter has to have eyes in the back of his head. Once the animal has caught the scent of his pursuers, he usually circles round and charges from behind. When the hunter sights the beast, he must shoot to kill because it's not likely that he'll have time to jump out of the way of the ferocious animal's tigerlike leap, and get a second chance. An *Izvestia* correspondent and photographer's firsthand experience of this exciting sport provided SOVIET LIFE magazine with an interesting picture story.

An illustrated article and an excerpt from a story by Konstantin Paustovsky tell about the life of the gifted Georgian painter Niko Pirosmani.

The Minister of Specialized Secondary and Higher Education of the Russian Federation comments on Soviet scientist Mikhail Volsky's discovery proving that nitrogen is as necessary for living beings as oxygen.

Latvian monuments immortalize the martyrs of nazi concentration camps.

COMING SOON

A collective fishery in the Atlantic Ocean.

By Ludmila Urazova, Art Critic



TATIANA MAVRINA,

folklore painter

TATIANA MAVRINA was born in 1901 and spent her childhood in Nizhni Novgorod (now Gorky) on the banks of the Volga. Her parents were teachers. The gay holiday crowds who came to the Nizhni Novgorod Fair, the bright cupolas of the churches outlined against the sky, the walls of the ancient Kremlin city and the quaint wooden carvings on the log houses made up her early impressions.

After the Revolution she entered the Higher Technical Arts Studios in Moscow, where she studied portrait and landscape painting.

(Continued on Cover 3)



The town of Suzdal.



The town of Kostroma.



A rooster.

a bouquet.



(Continued from page 61)

She has been living in Moscow ever since. In her pleasant home on Mir Avenue, where one can see many of her canvases, prints and painted trays, Tatiana Mavrina welcomes art fanciers.

She came into her own in the early forties, after long years of searching for a personal style, the "Russian style" for which she has become so well known—eye-catching water colors over a faintly etched pen design.

Her subjects are derived mostly from Russian folklore, legends and fairy tales. In her own way she has continued the traditions of Vasnetsov and other outstanding Russian painters of the late nineteenth century who were much taken with themes from Russian history.

To her depictions of scenes from legends and old tales the artist brings the charm of the bizarre and fantastic. Her architectural landscapes, notably *Zamoskvorechye, Novodevichy Convent, Ostankino, The Moscow Kremlin Towers* and *St. Basil's Cathedral,* have a lyrical, fresh and appealing mood.
Mavrina is a great admirer of Russian architecture and may often be seen roaming around Russian cities famous for their old buildings. Many of her canvases have been inspired by the old architecture of Suzdal, Uglich, Zvenigorod, Zagorsk, Novgorod, Pskov and Yaroslavl.



The town of Vereya.

Her themes, the gay tints of the old print and the element of folk humor she brings to her work, are her hallmarks. She has also revived one of the old traditions of Russian folk painting, introducing proverbs, sayings and lines of verse into her pictures. Her texts are in beautiful lettering, now chasing the bend of a river, now entwined in the grass or climbing the hillsides, running down the narrow paths, dancing on the roof tops, adorning pitchers and vases or sailing with the clouds in the blue sky.

Mavrina is loved, too, for her illustrations of fairy tales and nursery rhymes. The books she illustrates sell in very large editions all over the country.

During the personality cult period, she lived under a cloud. Her husband, the artist Nikolai Kuzmin, was also unfairly charged with having formalistic leanings. Mavrina's best works, those on historical subjects, were barred from exhibitions.

In recent years she has won many tributes. Her illustrations for the Russian fairy tale "By a Wave of the Wand" brought her a silver medal at Leipzig, and those for Pushkin's tales the gold medal of the USSR Exhibition of Economic Achievements in Moscow. In the last five years she has had two shows in Moscow.

Mavrina's truly radiant art, in which color seems to be mixed with sunshine, wins the hearts of both children and adults. Pungent caricatures, striking comparisons, poetry and a spontaneous naïveté are all fancifully interwoven in her style. In her series *Seasons of the Year* genre scenes are depicted, with great naturalness, against a background of old village landscapes.

Spring, in this series, is a very interesting picture. It shows a green hillside, dappled horses grazing and a bouquet of lilies of the valley held in a hand trustfully extended to the onlooker. The lilies of the valley seem to bring to our ears the peal of silver bells; their tiny blossoms, brittle and cold as icicles, suggest the tingling air and tang of spring. The idea of the extended hand was borrowed, the artist tells us, from the chapter ornaments of old Russian manuscript books.

Mavrina has a passion for flowers; her pictures are full of gay camomiles and cornflowers, proud sunflowers, melancholy bluebells, bright-hued clover, cow lilies and golden buttercups. She arranges them in vases or humble pitchers standing on cottage window sills.

She also paints animals and has a series called *Animals in our Garden*—a funny-looking dark blue wolf with a raspberry-colored tongue, a red cat clutching a flower, a cunning, playful fox painted a garish orange, a mauve-tinted bear, a timid hare, a jaunty, quarrelsome cock.

Trays covered with red flowers and paintings on bottles are some of her distinctive handiwork. Mavrina turns ordinary bottles into objects of art by painting scenes with a sprinkling of text from proverbs or fables on them. Her characteristic motifs are old men with flowing green beards, the witch Baba-Yaga sitting in a mortar, drowsy fir trees in their snow mantles and shepherds playing tunes on fantastic flutes.

Affectionate admirers call her the "Russian Enchantress." They say she perpetuates the true Russian folk tradition. And indeed her art, in which so much of the fairyland times of our childhood are revived, is a source of delight to all.

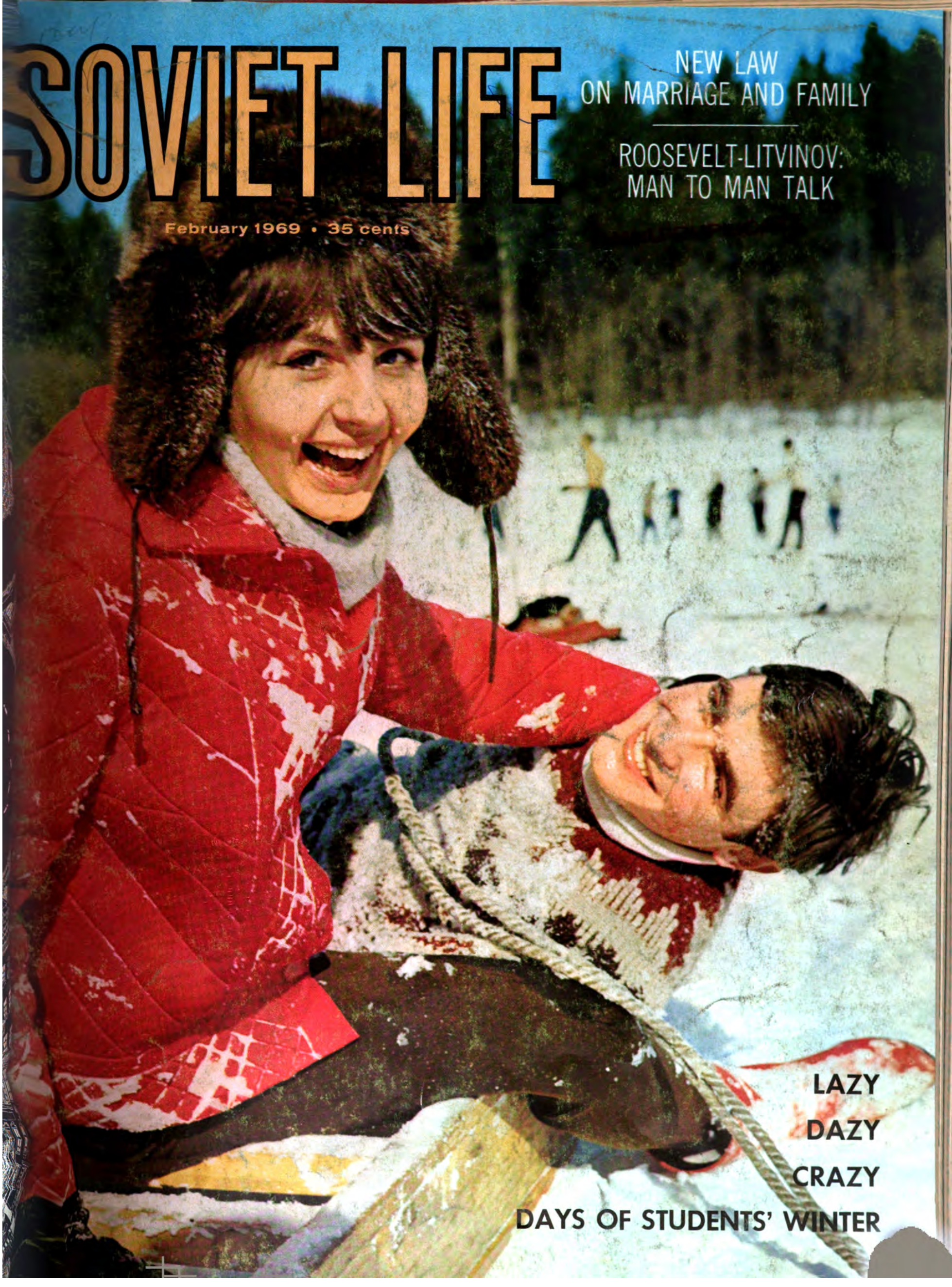


SOVIET LIFE

NEW LAW
ON MARRIAGE AND FAMILY

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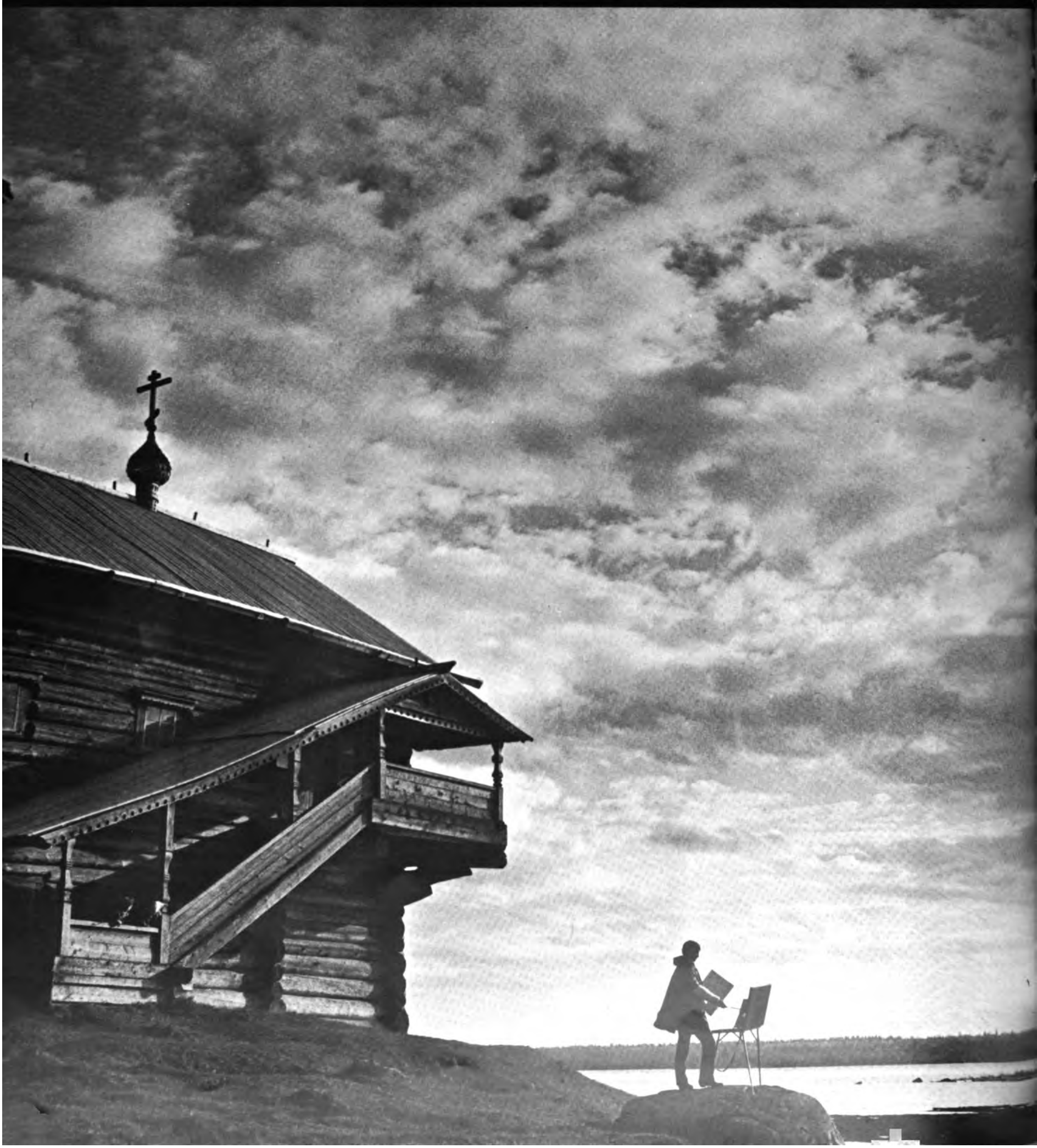
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LAZY
DAZY
CRAZY
DAYS OF STUDENTS' WINTER

HOBBY? NO, SECOND PROFESSION

BY MYUDA DEREVYANKINA
PHOTOGRAPHS
BY
SEMYON MAISTERMANN, TASS









Yuri Nivin has all the makings of a fine surgeon, his professors say. He is also a gifted sculptor and a promising musician.

A familiar figure in the Karelian countryside, this tall young man with a paintbox and a bundle of talents. The local people show him the most colorful spots. There are many in Karelia. Its landscapes have their own special beauty, not only in summer but in every season of the year. They draw artists and vacationers from many parts of the country.

The University of Petrozavodsk Quintet is the city's top amateur ensemble. Yuri plays the bull fiddle, but he can double on the trumpet.



In spring there is a very special quiet in the Karelian fishing country, says Yuri. He called his water color of a scene like this one *Silence*







His girl friend does not mind Yuri's long and meditative silences. She calls them communicative silences.



Karelian fishermen are excellent story tellers. They can show you where the epic hero Kalevala battled the giant. "Right there in these woods."

AMONG KARELIA'S MANY FOLK TALES is one about a greedy giant who found a cache of precious stones and tried to pick them up all at once. But as he picked up another two he dropped three. Too greedy for any sensible measure, he persisted until he died of hunger.

There is a small wooden figure of this greedy giant on the desk of Yuri Nivin, who is medical student, painter, sculptor and musician all rolled up in one.

"I carved it for myself," Yuri says, "as an ever-present reminder. I know that I tend to grab everything at once, and I don't want to come to the same sad end! It reminds me to do the reverse—to operate on the principle that the more you give, the richer you get."

Nature has endowed this 23-year-old student with many talents. He has the makings of a fine surgeon, say his professors; he is a gifted artist, his membership in the USSR Union of Artists certifies to that; and as though these were not enough, he is also a talented musician and a journalist and poet.

"You were born under a lucky star!" Yuri's friends tell him. They may be right, but Yuri himself believes that everybody gets a bouquet of talents from birth.

"Just look at kids. They are all talented. All you need to do is develop them. Even the Bible admonishes us not to hide our talents under a bushel."

That's something Yuri has never done, he'll tell you.

"Ever since I was so high, I was one big question mark, like most kids," Yuri says. "And I also had a passion for beautiful things. My curiosity was satisfied to some degree by the many groups at school and our Young Pioneers palace. First I joined a dance group, then the orchestra, and after that the art studio. In between I worked with a radio electronics group and invented an automatic candy vendor. Semiautomatic really. I did have to put the candy in by hand. Then I had some very good teachers. Though they scolded me for being scatterbrained, they never refused to answer my endless questions. They taught me to draw, play the trumpet and bass fiddle, carve, dance and make things. Mother was a domestic science teacher. I had no father, and her pay was certainly not enough to hire private teachers and instructors for all that I learned. To this day I feel eternally grateful to the instructors at the Young Pioneers palace and am only too happy to pay them back in a small way by supervising an art group. The kids in my group decorated the walls. But aside from that I like going there. As for my feeling about things beautiful, I was simply lucky to be born in Karelia."

Karelia, one of the loveliest parts of the Soviet Union, has become a tourist mecca. It has inspired many very popular songs. One says: "For a long time I'll be seeing Karelia in my dreams, its blue lakes amidst the thick forests like blue eyes amidst pine eyelashes, its cliffs now pink in the sunset, now blue in the moonlight."

"Our cliffs and rocks do range the whole color spectrum," Yuri said. "It's only at first that they seem gray. After a longer look you see them turn blue, red and gold. I have traveled by car and foot throughout Karelia, and I believe that it really is the original home of beauty. Perhaps that is why we have so many talented artists among our farmers and why Kizhi, that gem of Russian wooden architecture, is in Karelia. I have gone to the villages to sketch the old embroideries, the carved tracery of the windows and roofs, and the ornamentation on the homespun blouses and table runners. I begged the old ladies to show me their embroidered and lace-trimmed wedding sarafans. I have spent hours admiring their fanciful patterns. For me this was discovering beauty. Later I gave them a second life, I hope, in my own drawings and wood carvings. Don't think I just copy. I try to blend the ancient and the modern—after all I am today's product. I think that my best work is bound up in one way or another with the traditional crafts, the stories about the Karelian village and the Karelian sagas and fairy tales."



Yuri Nivin's *Letka-enka* was on display at the Soviet Pavilion in Montreal, at EXPO-67. It was also shown in Moscow at the Exhibition of the Art of the Northern Peoples. Yuri received a great many letters from viewers. This one came from Nina Velikanova, a student at the Sverdlovsk Polytechnic Institute, in the Urals. "You are like the kind Father Karlo of the popular fairy tale. Only you have made not one funny puppet, Buratino, but six charming, amazingly merry, never sad wooden little men. Looking at them, one feels a dancing itch in one's toes. 'One, two, put on your shoe.' We are dancing the *letka* with them. You are a fortunate man; you are very rich: look how many gifts you have. Couldn't you give me just one?"

In the studio he was given recently by the Petrozavodsk City Soviet Yuri shows, facing forward, his carved miniatures *Shrewd Peasants, Suitors, Newlyweds*, a couple in national costume and *Karelian Family*. Those he doesn't like at their present stage he turns facing the wall. He will go back to them eventually. He has remade and altered any number of these whimsical figures that catch the Karelian spirit so faithfully.

"Each figure has its own biography, some of them more authentic than my own," he says with a grin.

Yuri's own biography can be compressed into half a page. He was born in 1945, the year the Allied Nations defeated nazi Germany. His father was killed that same year. He left school after the eighth grade so he could help out his mother and sister.

"Mother objected, she wanted me to stay in school. But I was pigheaded. I wasn't satisfied with that cocoon stage of schoolboy. I wanted to have a taste of real life. I started out as a hospital orderly and later worked on an ambulance team. Hobnobbing with the pains of others cures you of egoism and narcissistic admiration of your own talents. I made up my mind to become a doctor and, after finishing night school, was admitted to the university. I will soon graduate. I would like to do beauty surgery, by which I mean not only getting sick people back on their feet again but making them as beautiful and handsome as they were before.

"Painting is not a hobby with me; it's my second profession. I think a person can have two professions. They enrich one another. I get the same pleasure seeing the joy on the face of a sick man who has recovered and watching the faces of people who look at my work. Music is sheer recreation. Why? It doesn't torture me, which is more than I can say about medicine or painting."

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NEW LAW ON MARRIAGE AND THE FAMILY

The new law on marriage and the family adopted by the USSR Supreme Soviet went into effect on October 1, 1968.

Soviet citizens awaited its passage with great interest. Understandably, for no other sphere of legislation so closely concerns each individual; no other law touches the most intimate human relations or affects social morality so deeply.

The first legislation on marriage and the family in the new Soviet society was adopted immediately after the Revolution, in December 1917. These decrees, and the codes later adopted by the union republics, were designed to protect women and children and to establish the complete equality of men and women, regardless of religion, race or nationality. Monogamy, voluntary marriage and the right to divorce were confirmed by law.

As our society developed, however, and economic and social conditions changed, marriage and family relations, while improving, began to raise problems that needed legal solutions. From time to time the government introduced changes in the existing law. In recent years it became obvious that a new law was required.

Several years were spent drafting the new Fundamental Law, and wide sections of the population were involved. Its provisions were discussed in the press, at factories, offices, collective and state farms, colleges and scientific institutions. The permanent commissions of the USSR Supreme Soviet working on the projected law received more than 7,000 suggestions and criticisms in the two and a half months after the draft was published. More than 8,000 letters about the bill were written to the newspaper *Izvestia*. Other newspapers and magazines received a large number of letters with recommendations and suggestions. The press regularly published articles on the bill, readers' letters, and surveys of the proposals and criticisms. Debates were held on the subject at hundreds of factories and collective farms. Ministries and government departments expressed their opinions. The scientific community, people in literature and the arts, teachers, doctors, members of the Communist Party, trade union and Young Communist League organizations and workers in the judiciary took an active part in the discussion. Many proposals were offered by the deputies when the bill was discussed by the USSR Supreme Soviet.

The projected law as a whole was generally approved. It was adopted by the Supreme Soviet after the many proposals and criticisms had been taken into account.

THE NEW LAW includes provisions from the previous law and the codes of the individual republics, which have been tested by years of practice. It also has a great many new provisions.

As previously, the new Fundamental Law says that only a marriage which has been officially registered has legal force. This definition is vital to the central goal of Soviet family legislation, that is, to strengthen the family unit.

We have long been concerned with stabilizing marriage and the family, preventing hasty and thoughtless marriage and divorce, and increasing the area of parent responsibility for the support and education of their children.

When the Soviet state was founded, it was unable to end the wife's economic dependence on the husband immediately, but it did remove the legislative obstacles to their equality. Marriage and divorce were made completely free and voluntary.

In the early Soviet period women had not yet acquired full economic equality with men, nor was the state able to give material assistance to women who were not married to the fathers of their children. Our laws, therefore, gave a woman the unrestricted right to bring to court the man she considered the father of her child, have the child's paternity established by court ruling, and be awarded alimony for the support of the child.

These measures helped solve the main problem of giving women freedom and equality with men in marriage and family relations. But now another problem arose—the stability of marriage and the family.

The ease with which one could get married and divorced, the possibility of obtaining alimony for the support of a child born out of wedlock, even as a result of a casual relationship, gave some young people a thoughtless, irresponsible attitude toward marriage. The number of short-lived marriages increased, as did the number of divorces.

Weakness in the law giving women the right to sue in court to have a child's paternity established and to obtain alimony for the support of children born out of wedlock began to become obvious. A law intended to protect the interests of the mother was not infrequently used by an unscrupulous woman, who would sue a man who was not the father of her child. Directed against irresponsible fathers, it sometimes hurt honest people. The unlimited right to sue for alimony enabled a light-minded woman to give little thought to the fate of a child born out of wedlock. The impossibility of reliably establishing paternity gave rise to many legal errors.

The war aggravated the problem. Like all wars, it weakened family ties. Men were cut off from their families for long periods. Millions of them were killed. A disproportion arose between the number of men and women of marriageable age. And this led to a sharp drop in the birth rate. Steps had to be taken, including legal steps, to strengthen the family and raise the birth rate. A decree of the Presidium of the USSR Supreme Soviet adopted on July 8, 1944, made serious changes in the law on the family.

The decree established that a marriage was legal only if it was officially registered. It introduced a complex divorce procedure. It repealed the right of an unmarried mother to sue in court to have her child's paternity established or to obtain alimony.

The decree was intended to strengthen the family by prodding women to marry before they had children, a formality which is in the interest of society, the woman and her children.

At the same time, in order to protect children, the law provided that a state allowance be paid to unmarried mothers. It gave them the right to place their children in an institution where they would be completely maintained by the state, and priority for day nursery or kindergarten accommodations.

The law was based on a good idea, but the juridical form in which it was embodied led to abuses.

Previously, the law gave an unmarried mother the unlimited right to sue the father of her child for alimony. The Decree of July 8, 1944, narrowed this right down so much that in some cases its effect was contrary to that intended.

The earlier principle was that children of unmarried parents and children born in wedlock had equal rights without exception. Hence the right to paternity was enjoyed by children born of casual relationships even when it was virtually impossible to establish paternity. Now the situation was reversed. Even the paternity of children born of parents who had lived to-



gether for a long time could not be legalized although the reason the marriage could not be officially registered was often beyond the couple's control. A decree aimed against the light-mindedness of a few thoughtless or dissolute women penalized all unmarried mothers, while the father of children born out of wedlock remained completely free of obligations.

The decree actually encouraged men to take advantage of trusting women. The previous law had sometimes encouraged thoughtless women; the new one protected dissolute, irresponsible men.

While the Decree of July 8, 1944, saw to it that the material interests of children born out of wedlock were taken care of by their mothers and the state, it neglected the psychological and emotional effects completely. Children born out of wedlock were not only deprived of all rights as regards their fathers; they did not even have the legal right to claim fathers.

As a result of the involved divorce procedure many registered marriages existed only on paper. Even when the couple were living apart and had actually acquired other marriage partners, the complexity of the marriage and divorce procedures prevented them from making their new marriages legal. Under such conditions, the requirement that marriages be registered officially was meaningless. Unregistered marriages are one of the main sources of "illegitimate" children.

Essentially this was the problem Soviet legislators had to grapple with. It is more than a legal problem, of course. It has all sorts of ramifications —educational, economic, psychological, medical—and affects almost every aspect of everyday life. But legal standards will obviously play a decisive role in marriage and family relations for a long time to come, particularly since the legal aspects are part of a larger system of measures we are taking to strengthen marriage and the family.

Discussion of the draft law centered on three problems:

1. conditions for contracting a marriage
2. divorce procedure
3. conditions for establishing paternity

Hasty marriages are not the most stable foundation for a healthy family. In an article in *Izvestia* (No. 142, 1968), Anatoli Kharchev, Doctor of Philosophy and well-known Soviet sociologist, cites a study involving different groups of young people which shows that most couples who marry shortly after they meet do not stay married long. Even during the period between applying to register a marriage and the actual registration, quite a number of young people change their minds.

When the projected law was being discussed, there were a variety of suggestions for making the marriage procedure more complicated. Proposals ranged from raising the age of consent to 21 to introducing an engagement period with notice of intent to marry published in the press, making mandatory a six-month waiting period between the application to register a marriage and the actual registration, and adopting the custom of having a formal ceremony accompany the registration.

Such measures might do some good. But the old saw that love cannot be legislated had to be kept in mind. Obstacles to marriage could force young people into unions that would result in children born out of wedlock. Which is preferable: a hasty marriage or unmarried parents? This was

the subject of a great deal of heated debate.

The new law sets the marriage age as 18 but gives the union republics the right to lower it, although not by more than two years. Marriages are to be registered one month after the application is made. Union republics may reduce or increase this period. Registration offices will provide facilities for wedding ceremonies, but couples may choose to do nothing more than register. The law also provides that the two partners are obliged to inform each other of their state of health and marital status.

The other side of the problem is the procedure to annul a marriage. "Freedom of divorce," Lenin said, "does not mean 'the disintegration' of family relations but, on the contrary, a strengthening of these relations on the only possible and stable democratic foundations in a civilized society."

Divorce procedure should be based on an understanding of what freedom of divorce means. Complicated, expensive proceedings limit the freedom to annul a marriage. And conversely, the simpler the procedure, the easier it is to get a divorce.

Until 1936 the procedure was too simple. It was enough for one of the partners to apply for a divorce and pay a small fee, and the divorce was immediately registered without even calling the other party in. What that led to we all know. If it was so easy to get a divorce, why waste time thinking about whether or not to get married? In 1936 the divorce procedure was made somewhat more difficult, but it did not improve things appreciably.

The Decree of July 8, 1944, was a basic change. It declared that a divorce could be obtained only through the courts. The courts were given the right to check and weigh the grounds and to refuse a divorce (although both partners might request it) if the reasons were not sufficient. Divorce in two stages (in the People's Court and the Regional Court) with publication of a notice in a newspaper and the high legal costs involved led to another extreme. In some cases divorce was beyond the means of couples whose marriage had broken up long ago, and that, in turn, made it impossible to legalize a new union.

This did not help to strengthen the family and aroused justified protest. On December 10, 1965, therefore, the divorce procedures were simplified. A case had to be brought only to the People's Court, and the provision requiring the publication of a notice in the newspapers was dropped.

When the draft law was being discussed, however, there were many arguments for and against new divorce procedures. Some people defended the existing law, arguing that only the courts could prevent groundless divorce and protect the interests of both the children and the partners themselves. Others claimed that divorce proceedings were unnecessary since no one can force people to live together if they are incompatible and have decided to separate. Court suits only add to the misery of the couple and waste the court's time, they said. Hence, it is best to allow the registrar's office to annul a marriage, as it did until 1944.

The majority of those who voiced an opinion on the subject thought both the courts and the registrar's office should be involved.

The court could, in a large number of cases, help to preserve a family if it has not disintegrated completely, or if one of the partners is trying to save it. It is the duty of the court to investigate the situation. Even more important, the court watches over the interests of the children. In cases of mutual consent and no minor children, there is no reason for court action.

Changes were accordingly made in the draft law. The law declares that if both partners agree to a divorce and there are no minor children, the divorce may be granted by the registrar's office three months after proceedings are instituted. The registrar's office will also grant a divorce, unless it is contested, if one partner is mentally incompetent, has disappeared leaving no trace, or has been sentenced to prison for more than three years. In all other cases the divorce must be obtained through the courts. A marriage is annulled if the court finds that it is no longer possible for the partners to continue living together. When the court decides to grant a divorce, it must take the necessary steps to protect the interests of minors or a disabled partner. A husband may not start divorce proceedings without the wife's consent during his wife's pregnancy or during the first year after the birth of their child.

The bitterest debates centered around the question of how to establish the paternity of a child with unmarried parents. According to the Decree of July 8, 1944, the birth certificate of these children was blank where the father's name would ordinarily appear, an embarrassment to both the child and the mother, and an injustice that, of course, had to be corrected.

Some people proposed a return to the situation that obtained until 1944. Children, they said, are not to blame and should not be made to suffer for the behavior of their parents, who should bear equal responsibility for the child. Children certainly are not to blame, others agreed, but that does not mean the law should encourage casual sex relations and the birth of children out of wedlock by making these relations equal to marriage in their consequences. What would become of marriage then? Would it not lose its significance?

There is no simple solution for the problem of unmarried mothers and children born out of wedlock. The state and the law must protect the mother of a child born out of wedlock when there was actually a common law marriage and a family was established. There is no reason to refuse to fix the paternity if the man states that he is the father of the child. If a woman wishes to have a child but for certain reasons does not marry the future father, paternity cannot be established without the joint consent of the parents. Moreover, the fact that science is not yet able to determine the father of a child reliably also has to be taken into account.

All this considered, the bill proposed a sensible and just solution of the problem. The paternity of children born out of wedlock is primarily established by a joint statement of the unmarried parents at a registrar's office. If there is no statement, paternity may be established through a court suit instituted by the mother. The court will take into account whether the father of the child lived with the mother in a joint household before the birth of the child or helped to educate and maintain the child.

The majority approved these proposals when the draft law was discussed but wanted the conditions made broader. Many argued that the bill groundlessly restricted the possibility of establishing paternity even when the defendant himself admitted it.

The Supreme Soviet adopted the view of the majority, supplemented by the provision that in establishing paternity the court should take into account evidence that confirmed admission of paternity by the defendant.

The law does away with the embarrassing blank space on the birth certificate of children born out of wedlock. If there is no joint statement of unmarried parents or a court decision, the birth certificate has the mother's surname entered as that of the father; the first name and patronymic of the father are entered on the birth certificate at her own discretion. In case of the death of the mother or when it is impossible to establish her place of residence, the surname of the father may be entered on the birth certificate at the father's request.

The regulations allowing unmarried mothers to sue in court to have a child's paternity established apply only to children born after the current law went into effect. Some people proposed making the law retroactive. But such a decision would not meet the principle of legal stability and would, to a certain degree, undermine faith in the force of the law. Besides, it would be practically impossible to establish paternity through the courts many years after the birth of a child.

Consequently, the Supreme Soviet did not make the law retroactive. It allowed only one exception. In case of the death of the person who supported the child born before the law went into effect and who admitted he was the father, the child's paternity may be established through the courts.

Time will show how adequate the new law is. It may, of course, raise problems of its own that will require new solutions.

Codes on marriage and the family will be drawn up by the union republics in accordance with the new Fundamental Law. The codes will provide definitions and the details of regulation.

ONE LANGUAGE FOR SCIENCE

BY ACADEMIDIAN AKSEL VERG; DMITRI ARMAND, Doctor of Science (Geography)
YEVGENI BOKAREV, Doctor of Science (Philology)

This article is part of a discussion in the newspaper *Literaturnaya Gazeta* about a world language for science which would make for more efficient distribution of scientific information and facilitate contact between scientists speaking different languages.

SCIENCE is encountering more and more tasks that only direct cooperation among the world's scientists can solve. Research within the framework of the International Geophysical Year and the International Biological Program, study of the Antarctic, collaboration in the fight against cancer, and space exploration require an exchange of information in many languages.

In every country patents are compiled in the state language, a total of several dozen languages. There are now more than thirteen million patents, and the annual increase is three hundred thousand. Comparing them has become an exceptionally involved problem. Besides the language in which the patent is compiled, a specialized terminology is needed.

A knowledge of the main European languages no longer enables a scientist to keep up with world scientific literature. For example, almost all the scientific periodicals put out in Japan are in Japanese. The socialist countries publish material in their own languages. An attempt to summarize material on the climate of Africa required a knowledge of twenty-five languages, and not all the languages spoken on that continent have alphabets. It is safe to predict that the proportion of publications in English, French and German will drop within the next few decades as those in Japanese, Hindi, Arabic and Swahili increase. What is a specialist who does not know these languages to do?

We can imagine a perfected system of information that would allow every specialist quick access to the information he needs in his native language. But this method would lead to an extraordinary increase in the number of translated publications. The Mir and Progress publishing houses put out books translated into Russian from forty-three languages and translate from Russian into thirty of the world's main languages. Very little scientific literature is translated from the Russian, however. It does not pay since the number of specialists in a given subject is not large in each language, and the editions, therefore, have to be small.

The main stream of scientific information comes through periodicals and journals. There are about four hundred abstract journals published in the world that in some way reflect scientific and technical information. In addition to sixty-three specialized information organizations, Moscow has three central information organizations and the USSR Institute of Scientific and Technical Information (VINITI), the largest in the world. Literature from one hundred and eight countries in sixty-four languages reaches this institute. Some two thousand five hundred employees scan more than fifteen thousand foreign journals, then pass them on to twenty-two thousand free-lance abstract writers. The institute processes almost one million articles a year. Yet the institute does not handle literature on construction, agriculture, medicine or the humanities.

The processed information is not distinguished for its exactness since each publication goes through from six to eight operations: classification, translation, summarization, editing, etc. This is a typical example of multicontact processing. The summary of the errors made at the different stages in the processing leads to information losses or, in cybernetical terms, to information entropy. The errors are numerous since it is impossible to find translators who are experts in ten thousand narrow fields.

Information is slow to reach the consumer. The abstracts of the Institute of Scientific and Technical Information reach the reader in from five to twelve months, while the complete works sometimes take all of three years after the original is put out.

Nor are oral translations any easier. The Palace of Congresses in Moscow is equipped for simultaneous translation in twenty-eight languages. But at best you get no more than six or seven translations. There are no translators for the other languages. And during the question answering part of the discussion periods, the earphones produce only scraps of highly distorted phrases.

It really is strange, says John Bernal, to see a large number of people gathered at a scientific conference who are dressed alike and look alike and whose thinking and knowledge cover almost identical spheres of knowledge, but who are completely incapable of communicating with each other and have to have interpreters. A radically improved means of communication must be developed, says Bernal, especially now that the world is becoming an interacting complex in which the Babelic jumble of languages is a serious hindrance.

Unlike Bernal, most scientists prefer the traditional solutions. G. A. Boutry, General Secretary of the Abstracts Bureau of the World Council of Scientific Unions, has proposed a convention under which every book or article would be annotated in the four main languages—English, Russian, French and German. Such a provisional agreement is possible, but why only four languages? Spanish, Japanese, Arabic and Hindi should probably be added to these.

Success in the diversified applications of computers led to the idea of using them for machine translations. Norbert Weiner, the father of cybernetics, who spoke thirteen European and Asian languages, warned of the complexity of the problem. He was afraid, he said, that the boundaries of words in the different languages were too diffuse . . . for any sort of semimechanical method of translating to be promising. Weiner thought that mechanizing a language at the present time was premature.

The task really is very difficult, particularly in building models of the source and target languages. Every grammar is made up of hundreds, sometimes thousands, of rules of spelling, morphology and syntax. From the logical viewpoint, these rules are to a significant extent absurd. Russian spelling, said Academician Victor Vinogradov, abounds in "contradictions, unjustified survivals . . . and instances of debatable or dual spelling." As a result, electronic computers turn out a half-finished product after years have been spent compiling machine dictionaries in some narrow field. Their translations have to be edited by someone who knows both the two languages and the field of knowledge. Translating machines will have to be extremely complicated if some sort of satisfactory result is to be obtained. As a way of overcoming the language barrier in science, this method is not likely to be effective for a long time.

Perhaps we should go about it in another way and try to teach specialists all the main languages. That is hardly feasible. Our secondary schools manage with great difficulty to assign seven hundred and fifty hours a year to a foreign language. To this schools of higher education add two hundred and ten compulsory hours and one hundred and fifty optional hours. But we believe about five thousand hours are needed to learn only one language so that it can be used freely. No wonder college graduates often have difficulty understanding a scientific text, even with a dictionary. It is ridiculous to speak of high school and college students learning several languages.

Evidently it makes more sense to reduce the problem to just one language, to agree on one national or international language and publish all scientific writings in it. Publication in the national languages could be continued, of course.

However, there are many reasons why using a national language as a world scientific language will not do. Here are two of them. First, the country whose language has become a world scientific language would be in a privileged position. Its scientists would not have to spend from three to five years learning another language and could give the time saved to science. Hundreds of millions of hours of working time would be saved, and the country would be able to forge ahead much more rapidly. Second, it would have big opportunities for economic and ideological expansion. Specifications, prospectuses, catalogues, advertising, newspapers and the radio would follow in the wake of scientific papers. That would give the country tremendous political advantage. Other countries would never agree to this.

There is only one way left that seems to us expedient, and that is to take an artificial language, or rather a regulated language based on a logically constructed grammar and, as far as possible, an international terminology as an auxiliary language of science. It could be introduced into usage in the following way.

The first stage in the sphere of scientific information would be an obligatory summary in the common language of science. The scientist would compile it himself in his native tongue or, if possible, would translate it. This would guarantee the accuracy of the summaries. The publication of summaries on cards appended to magazines or books is already practiced by a number of foreign publishing houses. Annotation of articles by the authors in the Russian language is widely practiced in the Soviet Union.

At the second stage it would make sense to publish scientific literature in both the native language and the language adopted for international scientific communication, or perhaps only in the latter. This would make practicable the publication of research done in narrow fields (most research is in just such fields today) since editions would be several times larger.

We may be accused of proposing a return to the time when Latin predominated in science. What is new, we know, is often something that has long since been forgotten and then is rediscovered. But scientific development proceeds in a spiral, and if something is repeated, it is repeated at a qualitatively different level. Latin is hopelessly obsolete, but the idea of using a single language in science, and a neutral one at that, is undoubtedly sensible.

The world has accepted such means of communication as the sea and air codes, Arabic numerals, musical symbols, medical terms and mathematical and chemical formulas. Are we going to fail to unify the connecting links between these symbols—link words, suffixes and grammar rules?

Courtesy of Literaturnaya Gazeta

COIN
A ? CAPTION

We thank those readers who sent their suggestions regarding possible captions for the photograph, appearing in the August issue, of the photographer who is closely followed by seven little piglets.

Our Coin a Caption photographs have brought much amusement to both our readers and our staff. Our final choices were most difficult to make, depending on one's point of view—either hindsight or foresight, so to speak—so we have chosen several. We hope you will agree with the selection that follows:

When do we get the prints?
J. C. Scanlon
846 Monroe Avenue
Elizabeth, N.J

Keep an eye on him, remember he promised us prints!
Julius Rensch
619 Pondella Road
North Ft. Myers, Fla.

Seven little piglets follow with glee
The man with the camera, plainly to see.
But does he hide a piggy snack to lure the little band?
Turn around, dear man, and bare what you hold in your other band.
Heidi Monk
P.O. Box 415
Concord, Calif.

Animal Farm .
Susan Chaffee
31 North Mast Road
Goffstown, N.H.

Pignip .
J. W. Sampier, Editor & Publisher
Live Stock Producer
155 North Wacker Drive
Chicago, Ill.

A 'hamstrung' caucus .
Rosemary Johnson
1508 Madison St.
Chillum Heights, Md.

Hey mister! Take our picture, or *"Seven after one."*
Mrs. Zena Druckman
2976 Clay St.
San Francisco, Calif.

Hold it kids, if you were dressed decently, I would take your picture .
Mrs. Lorin M. Temple
107 South 6th St.
Millard, Nebr.

Wiggly Pigletts
Mr. Russell Jacob
1577 Thompson Drive
Bremerton, Wash.

Straighten that line up!
Mr. Harry Schulte
7003 Glenmore
St. Louis, Mo.

Follow the leader", or "Seven Up .
Mr. Gorgas Bechtel
8205 Gladstone
Philadelphia, Pa.

The Pigleted Pied Piper , or All Road Lead to the Pigpen .
Mr. & Mrs. E. Aguirre
7801 West Chester Pike
Upper Darby, Pa.

Wagging their tails behind them .
Carolyn Stevens
4412 West Lake Harriet
Minneapolis, Minn.

Ham Actors Hitting the Road .
Mr. Charles E. Sharp
553 Whitney Avenue
Akron, Ohio

LETTERS TO THE EDITOR

Dear Sirs:

As subscribers to your periodical we would like to know if you have published or plan to publish any cumulative indexes?

San Francisco Public Library
Civic Center
San Francisco, California 94102
Att. History Department

In every December issue you will find an insert which is the index to all articles published in the course of the entire year. Editors

Dear Sir:

I have been a fascinated reader of *Soviet Life* for some time, congratulations on a fine magazine. As a Professor of Classics (Greek and Latin) I have an obvious interest in the status of classical studies in the USSR—would it be possible for *Soviet Life* to treat this topic in some future issue?

Sincerely yours,
Theodore F. Brunner
Chairman
Department of Classics
University of California
Irvine, California

Mr. Yuri S. Fantalov
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Pushkin Square 2
Moscow, USSR

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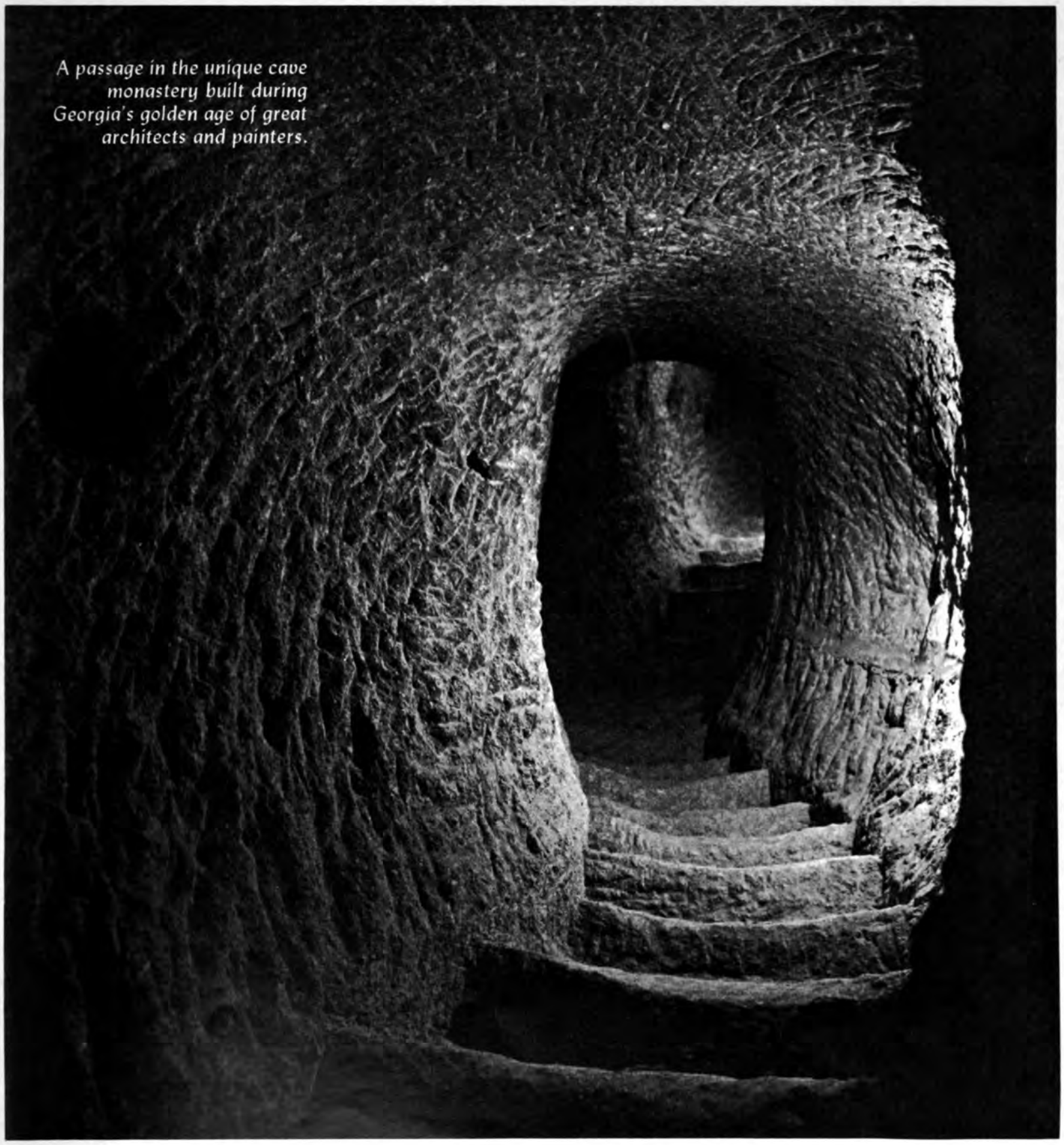
I would be pleased if this letter could be printed in the letters column of the next issue of *Soviet Life*.

Sincerely yours,
Mrs. Sybil Ramsing
Clinton, Connecticut

VARDZIA

CAVE TOWN OF THE 12th CENTURY

PHOTOGRAPHS BY SERGEI ONANOV, ISAAK TUNKEL



A passage in the unique cave monastery built during Georgia's golden age of great architects and painters.

COIN
A ? CAPTION

We thank those readers who sent their suggestions regarding possible captions for the photograph, appearing in the August issue, of the photographer who is closely followed by seven little piglets.

Our Coin a Caption photographs have brought much amusement to both our readers and our staff. Our final choices were most difficult to make, depending on one's point of view—either hindsight or foresight, so to speak—so we have chosen several. We hope you will agree with the selection that follows:

When do we get the prints?
J. C. Scanlon
846 Monroe Avenue
Elizabeth, N.J

Keep an eye on him, remember he promised us prints!
Julius Rensch
619 Pondella Road
North Ft. Myers, Fla.

Seven little piglets follow with glee
The man with the camera, plainly to see.
But does he hide a piggy snack to lure the little band?
Turn around, dear man, and bare what you hold in your other band.
Heidi Monk
P.O. Box 415
Concord, Calif.

Animal Farm .
Susan Chaffee
31 North Mast Road
Goffstown, N.H.

Pignip .
J. W. Sampier, Editor & Publisher
Live Stock Producer
155 North Wacker Drive
Chicago, Ill.

A 'hamstrung' caucus .
Rosemary Johnson
1508 Madison St.
Chillum Heights, Md.

Hey mister! Take our picture, **or** *"Seven after one."*
Mrs. Zena Druckman
2976 Clay St.
San Francisco, Calif.

Hold it kids, if you were dressed decently, I would take your picture .
Mrs. Lorin M. Temple
107 South 6th St.
Millard, Nebr.

Wiggly Pigletts
Mr. Russell Jacob
1577 Thompson Drive
Bremerton, Wash.

Straighten that line up!
Mr. Harry Schulte
7003 Glenmore
St. Louis, Mo.

Follow the leader", **or** *"Seven Up .*
Mr. Gorgas Bechtel
8205 Gladstone
Philadelphia, Pa.

The Pigleted Pied Piper , or All Road Lead to the Pigpen .
Mr. & Mrs. E. Aguirre
7801 West Chester Pike
Upper Darby, Pa.

Wagging their tails behind them .
Carolyn Stevens
4412 West Lake Harriet
Minneapolis, Minn.

Ham Actors Hitting the Road .
Mr. Charles E. Sharp
553 Whitney Avenue
Akron, Ohio

LETTERS TO THE EDITOR

Dear Sirs:

As subscribers to your periodical we would like to know if you have published or plan to publish any cumulative indexes?

San Francisco Public Library
Civic Center
San Francisco, California 94102
Att. History Department

In every December issue you will find an insert which is the index to all articles published in the course of the entire year. Editors

Dear Sir:

I have been a fascinated reader of *Soviet Life* for some time, congratulations on a fine magazine. As a Professor of Classics (Greek and Latin) I have an obvious interest in the status of classical studies in the USSR—would it be possible for *Soviet Life* to treat this topic in some future issue?

Sincerely yours,
Theodore F. Brunner
Chairman
Department of Classics
University of California
Irvine, California

Mr. Yuri S. Fontalov
Editor in Chief
Soviet Life
Pushkin Square 2
Moscow, USSR

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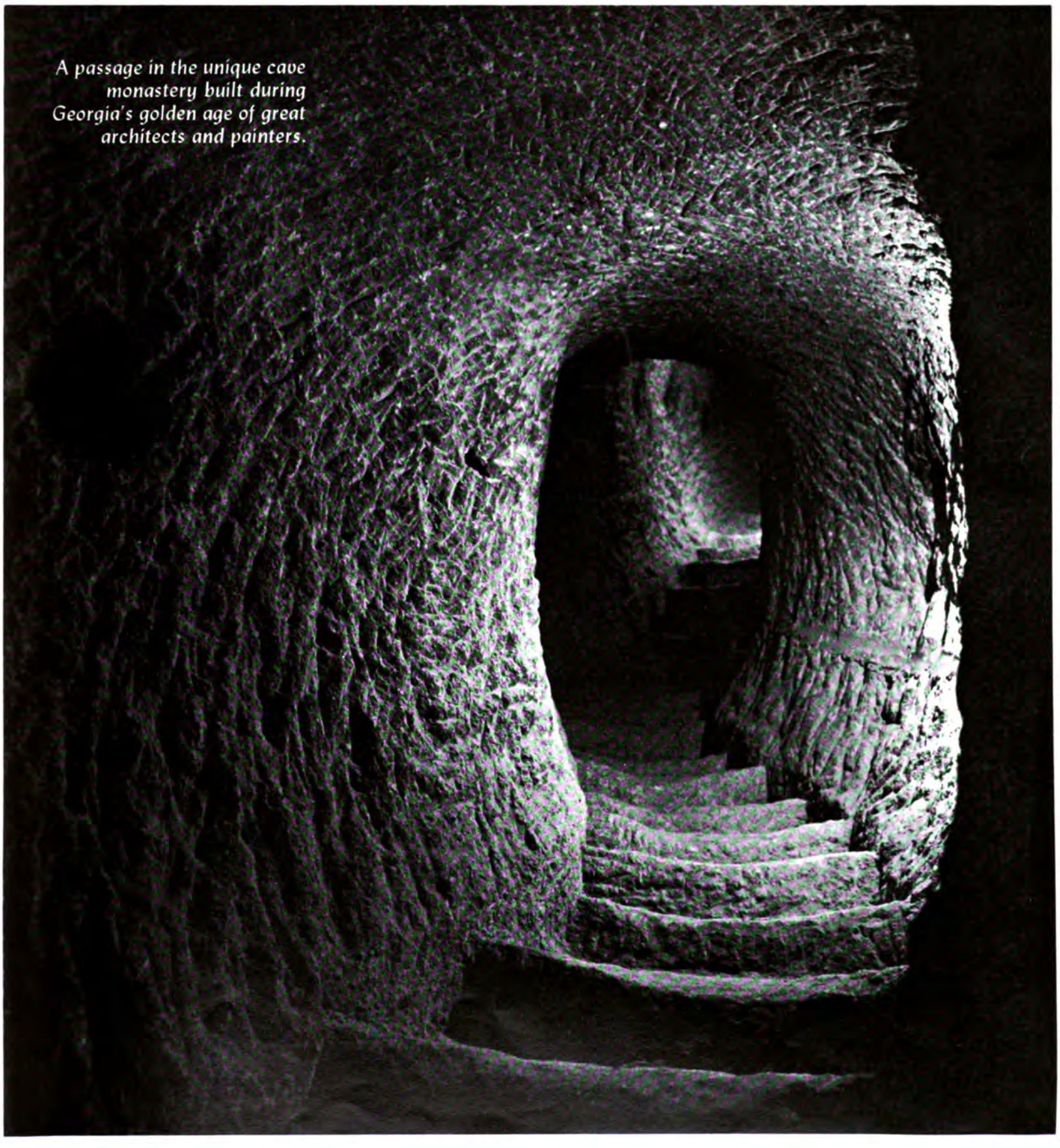
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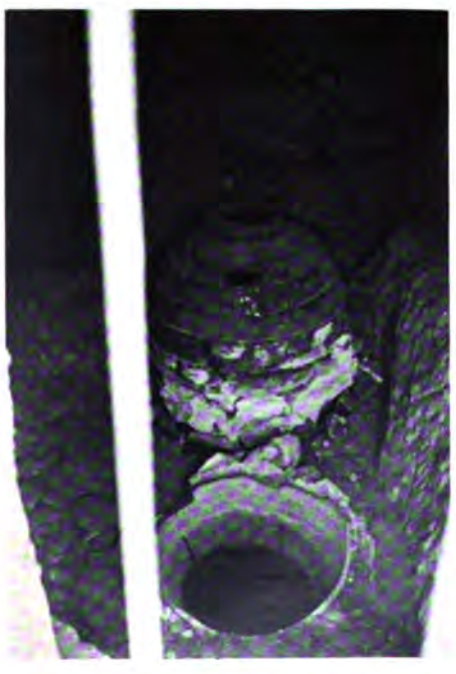
PHOTOGRAPHS BY SERGEI ONANOV, ISAAK TUNKEL



A passage in the unique cave monastery built during Georgia's golden age of great architects and painters.

Against the majestic background of the Caucasus the eight-hundred-year-old monastery looks almost like a setting for an epic play.





From time immemorial Georgians have kept their wine in such great pitchers underground. It helps to preserve the bouquet, they say.

THE DARK CLEFTS in the white wal are entrances to a complete town cu into the vertical mountainside. Vardzia is Georgia's famed cave monastery. Sev- eral hundred caves for living quarters and auxiliary premises, extending fo over half a mile, were hewn in tiers into the cliff. The creation of Vardzia dated from the twelfth-thirteenth centuries, a flourishing period in Georgian history. It was then that the Arab conquerers were driven out, the isolated principali- ties reunited and a strong and inte- grated state established. The economic and political changes brought an extra- ordinary flowering of Georgian culture- an age of great poets, architects and goldsmiths. Shota Rustaveli's epic *A Knight in Tiger's Skin* anticipated the Renaissance by a whole century.

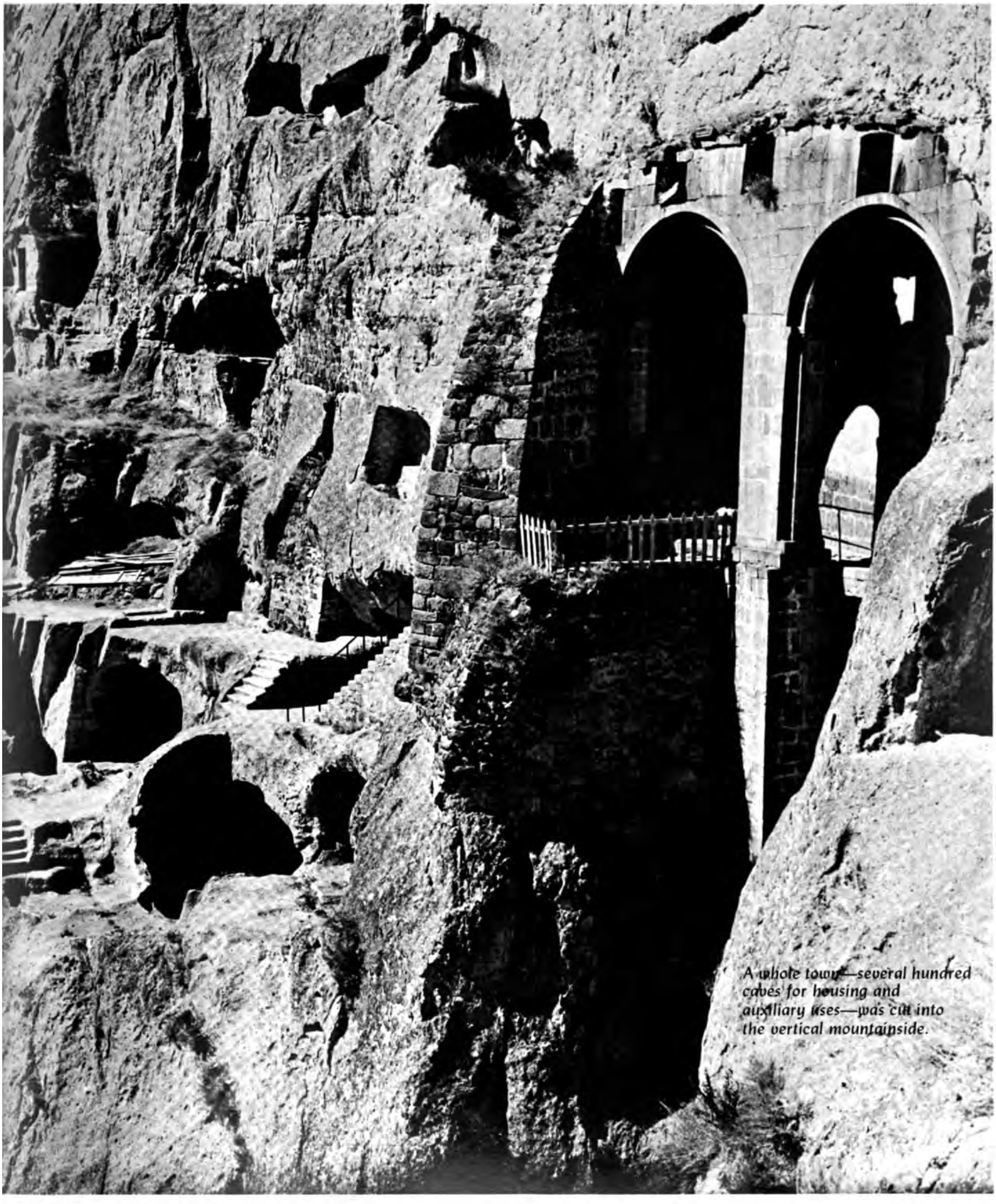
Monumental painting also reached a high point. Church walls and vaults were covered with frescoes. The architecture having some features in common with the general medieval pattern of other Christian countries—Byzantium, Arme- nia and the Roman influenced coun- tries (Georgia was converted to Chris- tianity in 337)—at the same time retained a pronounced originality of its own.

The main, hall-type temple of Vardzia is located in the central part of the mon- astery. The box-like vault, pilasters and supporting arches are all hewn out of the cliff. Against the almost universal back- ground of domed churches, Vardzia is an exception for Georgia where there is only one other architectural structure of this kind. The interior of Vardzia's main temple is decorated with frescoes depict- ing King George III and his daughter, Queen Tamara, who inherited the Geor- gian throne. It was during their reign that the cave monastery was built.

Legends cluster around Queen Tama- ra, who ruled from 1184 to 1213. She was distinguished for her wisdom and beauty. Queen Tamara brought domestic peace to Georgia, ended abuses by the rulers and strengthened the state. She waged successful wars against neighboring countries, defeated two sultans, con- quered a number of towns and extended her possessions. She spread Christianity to the Caucasian mountain tribes and was subsequently canonized. Tamara's reign was famed for its men of letters, among them the great poet Shota Rustaveli. He was hopelessly in love with the Queen, the reason he wandered for years in countries other than his own. His love for Tamara is supposed to have inspired his immortal epic.

The town of Vardzia testifies to the age of Georgia's stonework tradition. All of its ancient monumental structures are built from rock. Rock architecture reached its peak in Georgia in the Middle Ages.

This comparatively small Transcauca- sian republic (area only 29,500 square miles) has about 5,000 architectural monuments, most of them of church origin. These monuments, including the Vardzia Monastery, provide a history of the development of 1,500 years of Geor- gian architecture.



A whole town—several hundred caves for housing and auxiliary uses—was cut into the vertical mountainside.

THE THREE: COMPOSER, SKIPPER, CHEMIST

"Tell me about the happy people," is how Svetlana Petrova begins a letter to the editor. She is a student in a Moscow high school, which offers an intensive course in English, and is a regular reader of ours. After we thought about it, we realized that her request was not simple because after all is said and done, everyone has his own notion of happiness. Perhaps there is still one common element: Are you doing the work you like? Here we have a skipper of a fishing trawler, a chemist and a composer. They are all under 30. What else do they have in common? They like their jobs. Not everyone does. That is why we think these accounts may serve to answer Svetlana in some measure. They were taken from different youth publications: the *Yunost* (Youth) magazine, the newspaper *Komsomolskaya Pravda* and the Siberian paper *Leninskaya Smena*.

VALENTIN SILVESTROV:

Avant-Garde Eruption Is Not Unlike the Outburst of the Romanticists

BY IVAN NIKOLAYEV

MY INTERVIEW with Valentin Silvestrov began with the composer playing a tape recording of his chamber work for me. The easiest way, I suppose, for a man who writes music to talk about it is to play it. As the strains of flute, trumpet and celesta floated in the air, I conjured up visions of the intimate world of three beings caught up in a tentative urge for expression. The three movements of the piece could be three evenings spent in front of a slowly burning fire. One narrator at a time tells his tale, while his two companions listen with sound, as happens only in music....

The scores I heard were provocative and novel. But the new techniques were so utterly unobtrusive, that it was the simple charm and ingenuousness of the music that affected me most. I told this to the composer.

"It is what I aim at," replied Silvestrov. "An ease of expression that is nevertheless new and striking, that can be appreciated by a public that is not unwilling to accept the unaccustomed. And that takes time. It took time, too, for us to learn to appreciate Beethoven and, in the process, to abandon some of our pet prejudices. The ingenuousness I aspire to is coming to musical terms with my own personality."

Silvestrov spoke of the evolution of twentieth century music—from the cosmic flights of Scriabin, through the neoclassicism of the 1920's and 30's, down to the modernistic trends appearing after World War II. These trends, distinct from one another in their aims, aspirations and style, are nevertheless, he said, grouped under the general heading of avant-garde. For all its heterogeneity, there was thus a certain coherence, a common point of departure about this movement. It simultaneously thrust upon the world "concrete" music and "electronic" music, and produced such eminent composers as the Italian Nono, the German Stockhausen, the Frenchman Boulez and the American John Cage.

In developing his point about this common feature of the avant-garde, Silvestrov said:

"Apart from the destructive influences, rightly and wrongly ascribed to it, avant-garde music should be credited with the attempt to probe the origins of musical style, genre and traditions, with the effort to trace, for example, waltz rhythms to the gestures from which they spring. We are used to forthright and tonal music because we have been brought up on it. We accept patterns that our logical perceptions can pigeonhole. To write "tonal" music and stick to "harmony" is certainly the easiest, but hardly the most creditable track for the composer. It may very well lead him into the stagnant waters of inertia. Avant-garde at its best defies the inertia of compositional thinking."

"And does atonal music result from this defiance of the inertia of tonality?"

"No, this widespread term is really a misnomer. There is no such thing as 'atonal' music, but a new tonality resulting in a new expressive medium. Debussy noted that composers carried away by technical showmanship do not truly project their innate gifts. His own music with its scintillating evocative juxtapositions is a study in cogency and tangibility.

"Avant-garde music, too, abounds in 'Debussyisms,'" continued Silvestrov. "They may offend the unaccustomed ear, but within the range of the specific style are not incongruous. Like the cries of birds or the rustle of leaves, they grow out of a void of sound and are less jarring, for example, than the strains of a transistor outside our window.

"For centuries music was confined to the bounds of cathedral space. The avant-garde is one of a number of efforts to break through these limits. These efforts lead us to a closer affinity with oriental musical conceptions. Oriental music, as far as I can judge, has succeeded to a greater extent in remaining within natural bounds. An oriental piece of music, unfettered by finiteness, goes on swelling and expanding like a rolling snowball. Romanticism in its own way tried to overcome the space barrier. As an attempt to break through the present confines, the eruption of the avant-garde is not unlike the outburst of the romanticists...."

Silvestrov spoke enthusiastically of the work of many of his fellow composers and of contemporary music in general. In recent years he has himself written several important compositions, among them two symphonies—*Mystery,* for alto flute and six groups of percussion instruments, and *Projection,* for clavichord, vibrophone and bells. His music is becoming known internationally, played to audiences in Prague, Zagreb, Berlin, Paris and Copenhagen. *Spectres,* his composition for chamber orchestra, was a great success in a recent Leningrad performance, for which the composer says he is largely indebted to Igor Blazhkov, a fine conductor, friend and understanding interpreter of his music.

"My *Spectres* was first conceived as incidental film music but has now been launched on a life of its own. When we finish a score, it leaves us like a grownup son to make its own way in the world...."

Courtesy of the magazine Yunost

ANDREI PRIY:

The Test of Authority

BY TATYANA AFANASYEVA

WHEN I WENT to Tallinn to interview Andrei Priy, I knew he was the skipper of a fishing trawler with a fine record and that he had won the Young Communist League Badge of Honor.

I wouldn't have taken him for the master of a ship that sails the North Atlantic, at the top of the globe, for long voyages. He didn't fit my picture of a skipper. He looked more like a student than a "sea dog."

Andrei Priy is 25, but you take him for less until you talk to him. Then you take him for more. He has the mature judgment of a man twice his years, a man with a long background of experience. He has none of the affectations of the "sea dog."

His men respect him, they like working under him. You wonder whether this is a natural quality he has—this rare ability to lead.

One of the acid tests life puts to a man is authority. At 21 Andrei first sailed as master of a ship. As he put it: "I replaced the captain for one trip only." Maybe it was just luck. But luck favors many. It depends what a man does with the chance. And here was a boy commanding people older than himself. On his skill and judgment depended their work, earnings and even their lives. At sea the skipper is the last authority. What he says goes. Men with experience grow dizzy with power or frightened of responsibility. A young master can either insist upon his own "style" or follow the lead of the more experienced sailors under him.

Andrei managed to avoid these extremes. He listened to what the men had to say, saw how other skippers acted and worked out his own formula. There was always a voice inside cautioning him not to be a "boss." He saw that men were overawed by "bosses," even respected them, but never liked them. At the other end was the "buddy-type," chummy with his crew, but never their leader. The men were easy with him, but he didn't have their respect. Andrei chose a different course: As a captain he never forgot what it was to be a seaman. That attitude came through to the men when he gave orders, it was understood and appreciated.

To Andrei it was nothing more than being himself, being a decent person.

And so he passed the authority test. But there is an equally formidable test—the success test.

I asked him: "Aren't you afraid of success?"

"No," he said, "because I know myself. I believe in self-knowledge. I think a man should know his potentialities."

"And what place has your self-knowledge assigned you?"

"The place and position I have now. Recently they wanted to promote me to a bigger vessel with a crew of nearly a hundred men and better conditions. But I turned down the offer."

"Why?"

"I knew what the job involved. To do it properly would leave me no time for anything else. And I thought that was wrong. A man must leave himself time for a personal life. He must be able to appreciate art and books. He must have time to think, because he is a human being and not a machine."

I couldn't help agreeing. Andrei was in charge of men, which meant that he had to have time for everything, for science and the arts and for ethics. And to "reproduce" his spiritual strength, he had to have time for himself. To lead and guide men you must not only keep up with them, but be a little ahead. This is what generally characterizes a leader and an intelligent person.

Tolerant of other people's convictions, Andrei does not sit on a fence when it comes to his own point of view.

You will hear the sailors say: "The skipper has guts." You might think this was self-understood, that courage is something you take for granted in a sailor. But it is possible for a skipper not to be afraid of the sea and yet be afraid of his superiors, of change and innovation. To earn a reputation for "guts" among sailors is something.

Andrei's is a personality that combines "extremes": strength of character with a good mind, risk with calculation. He will excuse weakness, but not evil. He analyzes other people and himself as well. In short, he has the qualities that make up a spiritually whole man.

Courtesy of Komsomolskaya Pravda

YURI KRYAZHEV:

Blaze Your Own Trail!

BY STANISLAV ILYIN

HAVING PRESENTED his master's thesis on "The Synthesis of Grafted Copolymers" in 1963, three years after finishing college in Moscow, Yuri Kryazhev applied for the job of chief of a laboratory of high-molecular research at the Irkutsk Institute of Organic Chemistry. He got the job. The average age of his staff was twenty-five and the institute itself was only six years old. It is headed by Professor Mikhail Shostakovsky, Corresponding Member of the USSR Academy of Sciences, and one of the country's leading specialists in acetylene chemistry.

After three years' work Kryazhev became deputy director of the institute.

"Kryazhev's growing on the job," a local wit commented on the promotion to everybody's amusement. Kryazhev at over six feet was by far the tallest man around.

But whatever wisecracks greeted the news, nobody at the institute argued the fact that Kryazhev had the best claim to the job. He had proved himself not only a knowledgeable and gifted researcher, but also a brilliant and able organizer who knew how to pick his people, tackle the right problems and guide his staff.

"There are two directions a researcher can take," says Yuri, "follow up a problem that has already been worked on, or explore a new field.

"I prefer the second. Researchers who choose the first get quicker results and meet with fewer setbacks and disappointments. I suppose I could have worked in the field of cellulose, gone on with grafted polymers and followed well-tested roads with the usual good prospects. But I wanted to do some real pioneering, and that brought me to Siberia, as it did Anatoli Polyakov, a fellow student who presented his master's thesis the same day I did. Anatoli is now in charge of a research lab at our institute.

"To my mind the young researcher with some experience in his field and enough confidence to feel that he can strike out on his own should not be content with following paths traced by others. He should go to a research center like ours in Eastern Siberia where everything starts from scratch. When I came to Irkutsk most of our labs were empty, and there were only five others besides myself on the staff. Today we have a staff of thirty-two and first-rate equipment. Three of our people will be presenting their master's theses this year.

"Young scientists have a great future in new research centers like ours where they can choose the problems that really interest them and make the most of their gifts. The fact that so many of our researchers are young women throws a monkey wrench in our work; the birth rate in Siberia is way up. I'm just fooling, of course. But two of our young women working on important problems have just had babies, and the babies have not helped to solve problems. As head of the laboratory and now deputy director as well, I suppose I ought to find this upsetting. But as a young father myself, I'm happy to welcome these additions to our community."

Courtesy of Leninskaya Smena

WOULD D'ARTAGNAN RETURN



BY LEONID LIKHODEYEV

Drawing by Alexei Tertyshnikov

WHEN THE GASCONY BOY, whose name was d'Artagnan, reached the age of 18, his dad told him it was time to start out on his own.

Papa took a sheet of good paper and wrote a letter to an influential fellow countryman of his who served as a captain of musketeers in the city of Paris. Papa asked this influential friend to use his good offices to find the boy a job in the capital.

D'Artagnan took the letter, said "So long!" to his father and set off for Paris. But he had scarcely left his parents' home when the letter was stolen. And we must say that even in those days it was hard to get a position in the capital without pull.

What was a clever youth to do when the prospects were so poor? He should have immediately returned home and said to his father: "Papa, don't get excited. They stole the letter. Write me another!"

A fellow I know suggested this same solution to me. He, too, was 18 years old and had read all the romantic books in his new library.

I was surprised.

"If d'Artagnan had followed your suggestion, there would be no story."

"Maybe so," he replied. "But there would have been a new letter, and d'Artagnan would not have had to risk his life."

I wondered how Papa d'Artagnan would have greeted his son. Papa d'Artagnan was a soldier and a man of strict rules. He would probably have disowned him. He would have turned gray with shame that his own healthy lout of a son could not take a step without somebody's help, that all his son could do was talk a romantic line.

But no matter how he would have reacted, one thing is sure, we would not have had that amusing, romantic book by Alexandre Dumas *The Three Musketeers.* Because a fellow who turned tail when the going went a little hard would certainly not make a good musketeer, and who would want to write about him? And not only would he be unfit for musketeering; he would not be any good as a geologist, a miner, a chauffeur, an engineer, a cosmonaut, a doctor—or anything else.

And so we can draw the conclusion, from this very ancient example, that if a young fellow is not confident of his own powers, if he lacks persistence and independence, no letters that papa may write will help him. On the contrary.

This well-read fellow I know is by no means a coward. He probably has good inclinations. But he is too sober-minded, too calculating for his eighteen years. His interests are too practical and his views too utilitarian. The uninspired grow up like that. To be romantic does not necessarily mean going around looking for heroic things to do. It is nothing so exalted. It is simply the good feeling you have when you rise above your own consumer reflex, when you push out beyond the ordinary, make a lunge for the extraordinary.

And this feeling begins with a simple ability—the ability to cross the threshold. It makes no difference which threshold you step across—your parents' home,the threshold of your own knowledge, the boundary of your curiosity, the fence of narrow-mindedness or the paling of dogma and canon. And jumping the obstacle, you must never think, "What do I stand to gain from this?"

One of our great fliers, Valeri Chkalov, once flew under the girder of a bridge on which his sweetheart was waiting for him. His superiors were absolutely right when they put him in the guardhouse. But they were also proud of him for the crazy stunt.

Of course he could have traveled to the bridge by streetcar without risking his life. But he was in love, and he never thought about the danger.

"What did he gain from it?" the supercalculating person will ask.

What should he have gained? And why must we look at everything a person does from the viewpoint of what he gains?

What does that young man who brings his girl friend the first snowdrop gain? The first snowdrops grow in the woods where one can catch cold. And why should one bring snowdrops to a girl anyway? Can't a person get married without them? People do.

Let them. . . .

One great actor asked his students, "What does the flight of a bird begin with?"

"What do you mean—begin with? It begins with the bird spreading its wings."

"No, you're wrong. The flight of a bird begins with its wanting to fly."

What about your wings, friends? What about your ordinary striving for the extraordinary?

They say there are particularly romantic vocations. Vocations that mean leaving one's home town fall into this category—geology, navigation, road building. These occupations do meet the main romantic conditions, the step across the threshold. But that is merely the external form of the romantic, its garb.

There are no romantic occupations. But there are people with romance in their souls, and people who know "what they will gain." And the latter will, in the most romantic of romantic places, accumulate money because they are not romantics, but self-seekers.

Of course, d'Artagnan is d'Artagnan. He is a literary figure, a symbol. We look at him and think that ours is not a romantic age. Captains as weather-beaten as the cliffs have already discovered all the archipelagoes. The black hearts of villains have already been pierced with swords. The enemies who merited punishment have been hurled into the abyss. But did that fellow who, during a storm, rushed to make firm a girder that was dangling between heaven and earth think, "What will I gain from this?" Does the young man who makes his way across the tundra on skis to perform an operation think of anything except getting to his destination as quickly as possible?

Romance sharpens the emotions. Its noble hero is infinitely honest, bold, courageous, loyal and always ready to pierce the so-called romantic scoundrel with his sword, hurl him into an abyss—or raise his voice at a Komsomol meeting when he disagrees. Although we do not often come across romantic scoundrels, there are still many of them around, and we would like to put an end to them as quickly as possible.

But if we want these feelings to be more intense, we must first see to it that they exist. And that means absolutely concrete talk about actions, values, the urge to be of use to one's society. Romance dies when there is no feeling that you have risen above your consumer reflex. That is when the romantic scoundrels who are still around begin to multiply, to pretend, to adapt themselves. They come out of the books and crowd about in doorways, their low foreheads shortened by forelocks. They slyly trip someone up, and five of them, together, attack one person. They are tickled if there are no d'Artagnans to make them unwelcome, if the d'Artagnans have gone back to their father's house for a new letter of recommendation.

Quite different d'Artagnans make life move ahead—poets for whom soup is food, not the aim of life. They unsheath their swords and bare their chests because they have that compulsion to rise above the ordinary.

If we crush this feeling, then great music, great paintings and great books will all go to the dogs, because instead of a dinner menu, they will have only a sense of the beautiful to offer.

And instead of music and painting and books an indifferent muzzle, one that is satisfied with its mind and dissatisfied with its dinner, will shove itself forward, hiding the sun and stars from us.

The d'Artagnans do not return. They leap forward to meet the unknown, and they are not afraid of it; they attack it and rise above it, seeing it with wide-open eyes.

They wear no armor. Their chests are bared to both friend and foe. Because they do not pity themselves, they do not hesitate to cross the threshold and, what is most important, they do not regret living in this world.



Students favor the saying that life is a striped mattress: The dark stripes are invariably followed by light ones. You hear it a lot around winter exam time. In all Soviet institutes the last exam day is January 28. But no one in his right mind would wait till then to book a seat on a plane or train headed for the mountain ski resorts in the Caucasus, Transcarpathia and Karelia. Nor is it easy to reserve a seat to any other place, not when eight million students, driven by the centrifugal force of youth and curiosity, leave town at the same time. We haven't the space to list all the winter holiday possibilities, but the statistics say that 40 per cent of the students go traveling around the USSR and abroad while 35 per cent spend their vacations at resorts, which become solidly student for the duration. The trade unions cover most of the bill. For a two-week stay the student pays only ten to twelve rubles, a third of what factory and office workers pay. Fifteen per cent stay in their dorms and make the rounds of theaters, concert halls and museums, and 10 per cent visit their families in the villages or in other cities.

STUDENTS' WINTE



R VACATION

After an endless, bottled-up half-year of study, just walking down a village street behind an accordion or taking a sleigh ride is excitement.



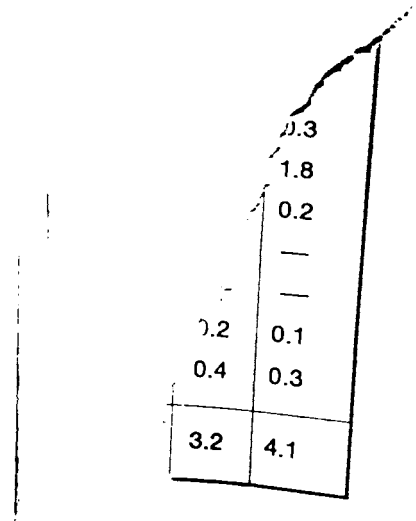
Students favor the saying that life is a striped mattress: The dark stripes are invariably followed by light ones. You hear it a lot around winter exam time. In all Soviet institutes the last exam day is January 28. But no one in his right mind would wait till then to book a seat on a plane or train headed for the mountain ski resorts in the Caucasus, Transcarpathia and Karelia. Nor is it easy to reserve a seat to any other place, not when eight million students, driven by the centrifugal force of youth and curiosity, leave town at the same time. We haven't the space to list all the winter holiday possibilities, but the statistics say that 40 per cent of the students go traveling around the USSR and abroad while 35 per cent spend their vacations at resorts, which become solidly student for the duration. The trade unions cover most of the bill. For a two-week stay the student pays only ten to twelve rubles, a third of what factory and office workers pay. Fifteen per cent stay in their dorms and make the rounds of theaters, concert halls and museums, and 10 per cent visit their families in the villages or in other cities.

STUDENTS' WINTE



R VACATION

After an endless, bottled-up half-year of study, just walking down a village street behind an accordion or taking a sleigh ride is excitement.


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New Year's Miracle

By Gennadi Tsiferov

WHO IS IT? Who is it? It is something knocking ever so gently on my windowpane. Is it a moonbeam? The wind? No, it is crystal butterflies—fluttering blue snowflakes. . . . They beat their tiny wings against the pane and beg me to tell them a New Year's fairy tale. Listen to me, then.

Everybody knows that there are cranks in this world of ours. Only there were far more before, and their eccentricities were far more interesting. In my old town, for instance, there was an old crank who never lighted any New Year's candles.

"What for?" he would say. "When they burn down, everything grows so dark and bleak."

Though everybody around made ready to see the New Year in, he just sat at his window and felt sorry for himself. Mummers passed by on the way to the New Year's carnival with tinkling bells and rattles. But this obstinate crank would not even smile. No, he always spent New Year's Eve in dour solitude. But once . . . listen to what happened once!

Just as the candles were lighted in the neighboring houses, just as the clock struck midnight, somebody knocked on the crank's door.

"That's funny," he said. "Who can it be? Nobody ever visits me." But the door opened and in walked Grandfather Frost himself. Shaking the silvery snowflakes from his sleeves, he looked around in surprise.

"My dear man, where are your candles?"

"Er, you see," muttered the crank, "I'm afraid. . . ."

"Of celebrating New Year's Eve?" Grandfather Frost was still more surprised.

"That's right," nodded the crank. "You see, the candles will burn down, and so will the celebrations, and it will be still darker and bleaker than before."

"You certainly are a crank!" guffawed Grandfather Frost. Striking his golden staff on the floor, he said:

"Celebrations never stop! It's your job to see that one turns into another."

"But I can't," whined the crank.

Striking the floor with his staff a second time, Grandfather Frost said: "If you want these celebrations to go on, you must plant New Year's candles in the spring."

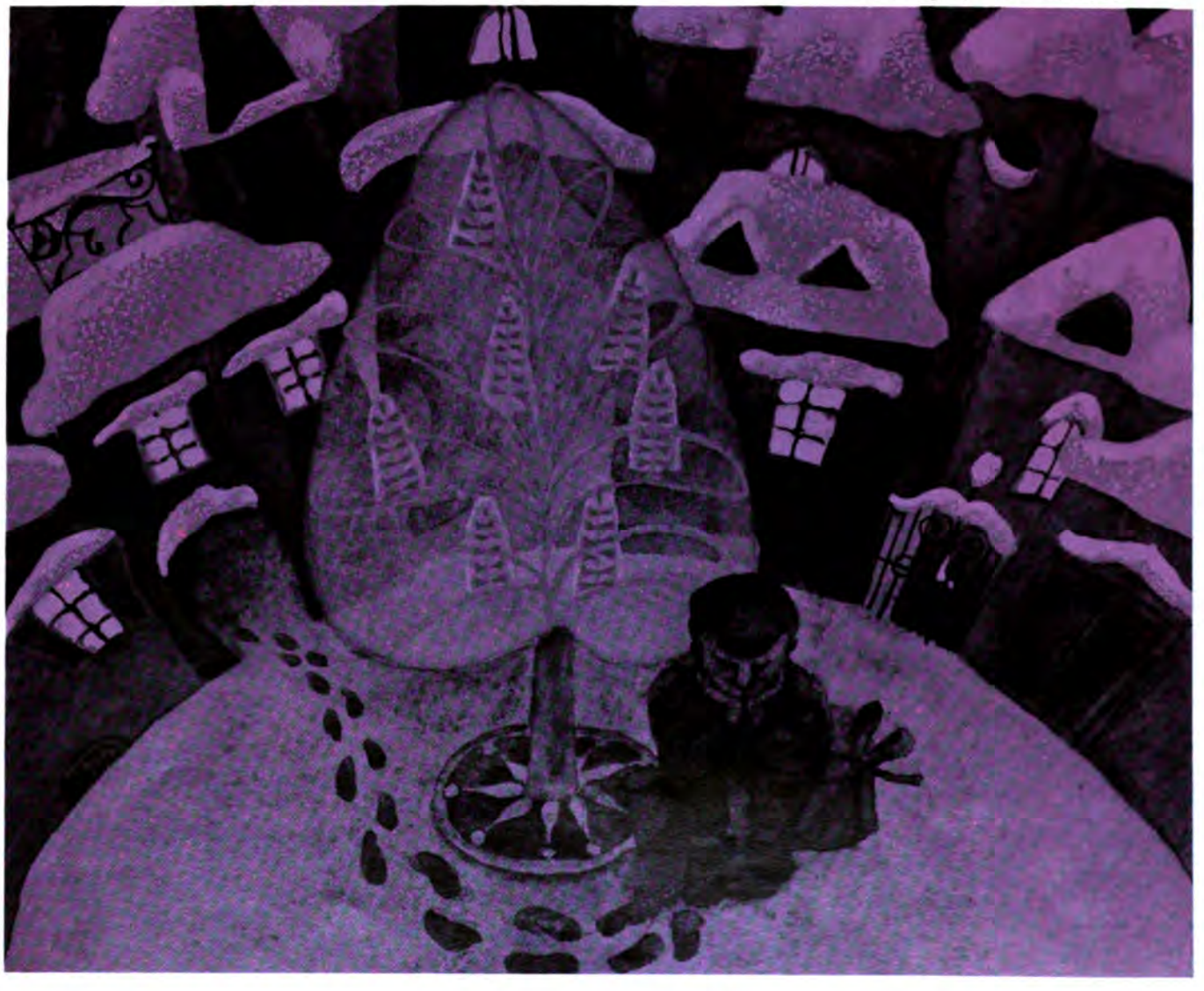
That is what the crank did. As soon as Grandfather Frost departed, he lighted a New Year's candle, and when it had burned halfway down, he put it away in his trunk until the spring.

In a large bed of white roses and velvety dahlias—yes, yes, in that bed of silver and velvet—the crank planted his tiny, golden stick of wax. Everybody laughed at him: "What a foolish thing to do." But soon his neighbors gaped in wonder and delight. A beautiful chestnut tree had grown from the little New Year's candle. If you don't believe me, have a look at the chestnut tree yourself. Aren't its blossoms like little white candles? How could they have grown like that? A miracle?

I told the story of this New Year's miracle to the snowflakes. Now it is time for you to light your candles so that nobody will worry that New Year's celebrations will come to an end.

You see, holidays never end. They go on and on. . . .

Drawing by Leonid Sergeyev





Maxim Litvinov (left) with Cordell Hull, U.S. Secretary of State, at the White House on November 8, 1933.

ROOSEVELT-LITVINOV: MAN TO MAN TALK

HISTORY OF U.S.-SOVIET DIPLOMATIC RELATIONS

By Zinovi Sheinis

THE FIRST EXCERPT FROM THE BIOGRAPHY OF MAXIM LITVINOV BY HISTORIAN ZINOVI SHEINIS APPEARED IN THE JANUARY ISSUE. IT TRACED THE POLITICAL AND ECONOMIC BACKGROUND FOR THE INTEREST OF AMERICAN BUSINESS AND GOVERNMENT IN THE EARLY THIRTIES IN THE RAPIDLY CHANGING SOVIET UNION. AMERICAN INDUSTRIALISTS AND BUSINESSMEN VISITED MOSCOW, MANY AMERICAN ENGINEERS TOOK PART IN CARRYING OUT THE FIRST FIVE-YEAR PLAN OF INDUSTRIALIZATION, AMERICAN JOURNALISTS INTERVIEWED STALIN, AND THE UNITED STATES ARRIVED AT THE CONCLUSION THAT "THE SOVIET GOVERNMENT IS STABLE." IN THE AUTUMN OF 1933 FRANKLIN DELANO ROOSEVELT, THE NEW PRESIDENT, DECLARED THE UNITED STATES READY TO RECOGNIZE THE SOVIET UNION.

LONG BEFORE the arrival of the *Berengaria* in New York, the American press highlighted the coming visit of Maxim Litvinov, People's Commissar of Foreign Affairs of the USSR. Both the failure and success of his mission were predicted. All kinds of stories appeared about the Soviet Union and its envoy. Now it remained to be seen what turn events would take.

On board the *Berengaria* Litvinov made his first statement to the clamoring journalists: "I am entering the territory of the great American republic, aware of the honor that has befallen me to be the first to bring greetings to the American people from the peoples of the Soviet Union as their official representative, aware that in a way I am penetrating that artificial barrier which for sixteen years has hindered normal relations between the peoples of our two states. The aim of my visit is known from the published exchange of messages between Mr. Roosevelt and Mr. Kalinin. Now the abnormality of the state of affairs that has existed for sixteen years has been acknowledged by both sides, which have begun to take steps to eliminate it. We all know that this state of affairs brought no good to either side, and the sooner it becomes a thing of the past, the better for all concerned." [1]

"Call Me Freddie"

As Litvinov was walking up the steps of the White House, special editions of newspapers in New York, Washington, Chicago, San Francisco and innumerable other cities and towns were headlining the "historic meeting of Roosevelt and Litvinov as an end to alienation." All other events—the repeal of the dry law and the New York elections—were relegated to second place.

Roosevelt met Litvinov amiably but with a certain reserve, carefully studying his face and manner. With him in the large, cheerless, poorly lit room were his wife and Secretary of State Cordell Hull. Roosevelt sat in a wheel chair, his large, gray head thrown back slightly. He made an effort to get up and meet the guest, supporting himself on the arms of the chair. Litvinov knew that Roosevelt could not rise and hastened toward him. Roosevelt gave him a firm handshake, asked about his trip and said that he was glad to see a Soviet representative in Washington. He inquired after Kalinin's health. Litvinov replied that Kalinin was quite well and had asked him to convey his heartfelt greetings to the President.

When the short visit was drawing to a close, Litvinov handed Roosevelt a gift—a stamp album, which the President leafed through with unconcealed pleasure.

In subsequent negotiations Roosevelt observed the Soviet diplomat closely, looking for those singular traits that many believed inherent in Russian revolutionaries; he could find none. The somewhat ponderous Litvinov was well dressed, calm, methodical and spoke English well. One is led to believe that Roosevelt was perceptive enough to see into the inner world of the Soviet diplomat. When the negotiations were drawing to an end, he said to Litvinov: "Just call me Freddie."

This was not an empty gesture. Roosevelt never permitted strangers to use that familiar name. When Litvinov returned to Washington eight years later, they met on the friendliest terms. Evidently Roosevelt, that keen politician, had a high regard for Litvinov's realistic way of thinking and saw him as a man confident of the justice of his cause, representing a new world which was unknown to the American President.

Claims and Counterclaims

On the very first day of the negotiations, Secretary of State Cordell Hull enumerated the American claims—the various sums advanced by the United States to the Provisional Government of Alexander Kerensky.

Litvinov said that he could add to the list. The credits granted to Kerensky had also been used to buy arms for Yudenich, Wrangel and other czarist generals. This financing of the counterrevolution had brought great suffering to the Russian people. Nor did it reflect the desires of the American people, who did not want such a policy followed. He, Litvinov, was sure that had the American Government then in power pursued the same aims as the present Administration, Kerensky and the czarist generals would not have received those credits. How could the Russians be expected to pay for guns and rifles that were used to shoot down Russians? It would be as unnatural as asking the Americans to repay the money England had spent on the war in America, a war in which the Americans were fighting for their independence. The attitude of the Russian people toward the American struggle for independence had been different. The progressive people of Russia had followed the struggle of the Americans with sympathy. Roosevelt listened with interest, glancing occasionally at Hull.

After a lengthy discussion of the first item, convinced that Litvinov would not compromise, that it had all been settled in Moscow, Roosevelt turned to the second item, suggesting that the first question could be gone into later.

Hull presented a prepared list of claims made by Americans whose property had been nationalized in Russia after the Revolution and said that the United States Government insisted on compensation.

This question was discussed for several days. Litvinov declared that the Soviet Government had counterclaims. During the Civil War in Russia the United States sent an expeditionary force to Siberia under the command of General Graves. The losses inflicted by the intervention far exceeded those Americans had suffered in Russia.

Hull reminded Litvinov that the expeditionary force had been withdrawn. Litvinov pointed out that Graves was forced to leave because he saw that the intervention was hopeless. Litvinov's counterclaim was admitted to be sound.

Discussion of the next problem proceeded with greater speed and ease. Roosevelt wanted the Soviet Union not to interfere in the internal affairs of the United States in any way whatsoever. Litvinov assured the President that the Soviet Union never had any intention of interfering in the internal affairs of the United States.

This question out of the way, the President asked Litvinov whether Americans—the members of the Embassy in Moscow—would be guaranteed freedom of religion and be able to attend the church of their faith.

Litvinov answered that all embassies accredited to Moscow enjoyed that right.

To Preserve the Peace

These negotiations must have had many nuances that will never be known since the participants have long since died. But the fine points are not nearly as important as the final results. Litvinov's most difficult mission was successful. All the enormous work was brought to completion by two short letters that the President and the Soviet diplomat exchanged on November 16 in the White House. Roosevelt wrote:

> My dear Mr. Litvinov:
>
> I am very happy to inform you that as a result of our conversations the Government of the United States has decided to establish normal diplomatic relations with the Government of the USSR and to exchange ambassadors.
>
> I trust that the relations now established between our peoples may forever remain normal and friendly and that our nations henceforth may cooperate for their mutual benefit and for the preservation of world peace.[2]

Litvinov, on behalf of the Soviet Government, handed Roosevelt the reply:

> My dear Mr. President:
>
> It gives me pleasure to inform you that the Government of the USSR is quite willing to establish normal diplomatic relations with the Government of the USA and to exchange ambassadors.
>
> I also share the hope that the relations now established between our peoples may always remain normal and friendly and that our peoples will henceforth cooperate for their mutual benefit and for the maintenance of peace in the whole world.[3]

Roosevelt congratulated Litvinov and addressed a few warm words to the Soviet Union and its diplomats. Litvinov thanked him and returned the compliment. And they continued the talk in the same businesslike way, discussing the details of future relations, the activity of the American Embassy in Moscow and of the Soviet Embassy in Washington, the possibilities of future trade and what effect this would have on the two countries. And, of course, they talked about world affairs and what was happening in Germany.

The First "Hot Line"

During one of the last talks Roosevelt's aide reported that the

[1] *Pravda*, November 9, 1933.

[2] *Foreign Relations of the United States*, 1933-1938, The Soviet Union, Vol. 2, p. 27.

[3] *Pravda*, November 17, 1933.

American Radio Communications Commission had set up a radiotelephone link with Moscow. The President had a surprise for Litvinov—he asked him to make the first direct Washington-Moscow call in history. Litvinov went downstairs to a circular room where the intercontinental telephone had been installed.

Preparations for the great event were also under way at the Central Telegraph Office in Moscow. When word was received that Litvinov would be at the other end, his family was notified.

Technicians in both Washington and Moscow had worked hard to make the call audible. But as often happens in telephone conversations, the husband and wife said several times over: "Hello, do you hear me?" "Yes, I hear you!" The conversation was recorded in Washington, then broadcast over the radio and has remained as evidence of the event.

Litvinov talked to his wife and then returned upstairs to Roosevelt. The President was leaning back in his wheel chair. He asked how the talk had gone. Litvinov answered that the audibility had been excellent. Roosevelt smiled and said: Mr. Litvinov, such a talk is your best propaganda. When Americans learn that the Bolshevik Commissar has a wife and children, that he is a family man, they will respect both the commissar and his land.

After exchanging letters with Roosevelt, Litvinov spoke at the National Press Club to representatives of America's major newspapers and agencies. The American papers called it the largest press conference of the decade.

The Soviet diplomat made a statement on the course of his negotiations with the President. He said that the peoples of the Soviet Union would receive the news of the restoration of diplomatic relations with sincere satisfaction and stressed that possibilities were now opening up for truly friendly relations and peaceful cooperation between the two largest republics in the world. All honest and peace-loving people, all who were against ill will, suspicion, inimical acts and other abnormalities in relations between peoples would be glad.

The newsmen applauded, then fired questions, and Litvinov felt like a boxer warding off the onslaught of an opponent.

"How will the establishment of diplomatic relations between America and the Soviet Union affect the Third International?"

"The Third International is not mentioned in the documents," countered Litvinov. "One should not ascribe to documents what they do not contain."

"Are not the Russians spreading propaganda in the United States of America?"

"I would ask the journalist who asked that question, in the presence of all, to give me the addresses of Soviet citizens who are spreading Soviet propaganda in the United States of America."

The hall rang with applause.

"I Liked the President's Methods"

On November 23 the Soviet diplomat completed his business in Washington. Roosevelt saw him off cordially and presented him with a portable radio set—a rarity in those days. He expressed the hope that they would meet again. But neither Roosevelt nor Litvinov could know then that in eight years the world would be at war.

When he arrived in the United States on November 7, Litvinov had not had an opportunity to see New York. His train had left immediately for Washington. Now, with Ivan Divilkovsky, Secretary General of the People's Commissariat of Foreign Affairs, he decided to make up for it and see the sights—the city's streets, bridges, monuments. Litvinov visited the 102-story Empire State Building, ascending to the observation platform for a view of the entire city and the harbor.

On the night of November 24 a big banquet was given in New York in Litvinov's honor. Everyone who was anyone in business and politics wanted an invitation to hear Litvinov's last speech on American soil. He spoke to the great audience as a representative of a new world, certain of its future.

Litvinov told about his talks with the President:

> Somehow neither of us was in a hurry to conclude. I think we both felt the approach of the moment when mutual obligations would be accepted and were trying to utilize the remaining period of freedom to conduct a little propaganda between ourselves. The President appealed to me with something like religious propaganda. Although we were hardly able to convert each other, I liked the President's method of discussing problems. I never doubted the results. From the moment the President characterized the absence of mutual relations as abnormal, I was sure that he would do all he could to eliminate the abnormality.
>
> The upheavals produced by the World War in the political, economic

LENIN AND LITVINOV: FIRST STEPS OF SOVIET DIPLOMACY

LENIN AND LITVINOV first met in Zurich in 1902. After that they met and talked many times, mainly abroad, as Litvinov, a professional revolutionary, was a marked man on Russian territory.

After their meeting in Geneva in the summer of 1913 they did not see each other again for five years, but they did correspond. Now they met again, no longer exiles. One was the head of the Soviet Government, the other an experienced Party worker.

Lenin fired question after question. When everything was cleared up, he informed Litvinov, as though the matter had already been decided upon:

"So, Maxim Maximovich, your sphere will be foreign affairs."

On the following day Litvinov was appointed a member of the collegium of the People's Commissariat of Foreign Affairs, and within a fortnight he left for Sweden on Lenin's personal assignment—to try to end the military intervention of the Entente countries and the United States in Soviet Russia. At that time the diplomatic representation of Soviet Russia in Stockholm, headed by Vatslav V. Vorovsky, was the only Soviet diplomatic bridgehead abroad.

On December 23, 1918, Litvinov addressed the Allied powers and the United States from Stockholm with the peace proposals of the Government of the Russian Federation. On the following day, on December 24, he sent a special letter to President Woodrow Wilson, who had just arrived in London.

Litvinov wrote to the President of the United States:

> The principles you proclaimed as the possible basis for solving European problems . . .* prompt me to send you these considerations as the majority of the points in your peace program have been included in a more extensive way in the leading program of the Russian workers and peasants, who are today the rulers of their country.
>
> It is incomprehensible to the workers and peasants of Russia how foreign countries . . . can consider it their right to interfere in Russian affairs today, when the working people themselves, after decades of struggle and sacrifice, succeeded in taking power and the fate of their country into their own hands, wanting nothing but their own happiness and international fraternity, which is not a threat to other nations.
>
> The workers and peasants have decided to protect their dearly won power and freedom against conquerors with everything the vast country places at their disposal; however, considering the inevitable senseless waste of life and values for both sides and wishing to avoid the added destruction Russia would be subjected to if there were further internal and external struggle, they, as this concerns the real interests of their country, are prepared to agree to all possible concessions if they thus succeed in ensuring conditions allowing them to develop their social ideas peacefully.
>
> The dictatorship of the working people and producers is not an end in itself but the means for creating a new social system under which all citizens, irrespective of former class affiliation, will be provided with useful work and equal rights. One can believe in this ideal or not, but this definitely does not in any way justify sending foreign troops to combat it or supplying arms and rendering support to classes interested in restoring the old system of the exploitation of man by man. . . .

The peace action initiated in Stockholm could have developed further, but the Swedish Government, under pressure from the Entente, decided to break off all relations with Soviet Russia and to expel the entire Soviet representation from the country.

In reply to Litvinov's message, William C. Bullitt, head of the political information department of the American delegation to the Paris Peace Conference, arrived in Moscow on a confidential mission in the early part of March 1919. His assignment was to find out on what conditions the Bolsheviks would agree to peace negotiations.

At first People's Commissar of Foreign Affairs Chicherin and Litvinov conducted the talks with Bullitt. Then on March 14 Lenin returned to Moscow from Petrograd. He received Bullitt on the same day. The American diplomat was presented with a draft peace agreement.

In it the Soviet Government expressed its consent to territorial demarcation between all the actual governments which had been formed in Russia, provided the armed intervention were stopped immediately, the foreign troops withdrawn and trade relations resumed.

Wilson realized that all the governments on the territory of Russia, with the exception of the Soviet Government, were supported by foreign troops, and that no sooner would the interventionists leave, than these governments would fall. Wilson turned down the Soviet proposals. The interventionist forces in Soviet Russia continued to assist the Russian counterrevolution until it was routed by the Red Army. Only then were these forces withdrawn.

* He was referring to Wilson's "Fourteen Points," the program statement he had made on January 8, 1918.

and social order of the capitalist world have not been outlived but continue to exert their deleterious influence.

Preparations for new wars are being made in the open. Not only has the enemy resumed and is accelerating the arms race, but what is probably even worse, the growing generation is being trained in a spirit of idealization of war.

Typical of such militarist education is the expounding of the quasi-scientific medieval theory that one nation is superior to others and has the right to rule over and even exterminate them. Songs, music, literature, science—all is made to serve the interests of militaristic training of the youth.[4]

The Soviet diplomat spoke of the failure of the disarmament conference, of the economic crisis and the millions of unemployed, of the continued dwindling of world trade, and rapped out to the silent hall: "All this gives us little hope of an improvement in the economic situation. Against this dismal background my land appears as a ray of light."

Litvinov told the audience of the industrial, technical and scientific progress the Soviet Union had made, of its public health system, its literacy rate, its cultural growth. It was probably the first time most of those New York business people had heard any of this.

About a talk at the banquet with one New York millionaire, Ivan Divilkovsky wrote his wife on November 29, 1933, from aboard the *Conte di Savoia* (the letter was mailed in Gibraltar—*Z.S.*):

At the banquet Friday night I sat at table next to the chairman of the board of directors of the world's largest bank, the Chase National Bank. The man was a 45-year-old one-hundred-per-cent American who has done business with our country for a long time but knows as much about our land as a high school walrus from Franz Joseph Land. He fired the weirdest questions at me. Finally he asked me how much I earned. I told him. How much is that in dollars? Two hundred. He (with a satisfied look): And I get 10,000. I wanted to tell him I wouldn't swap places but refrained. Next: Where do you live? What sort of apartment? Wife? Children? Servants? I answered all his questions. Took a keen interest in you, learned that you were the same age as his wife and that we have the same number of children. Began asking about you: What you did, what dresses you wore, would you wear expensive ones if you had them, and so on. I answered everything patiently (he kept begging my pardon for his questions but said that it all interested him frightfully). Having finally obtained all the information, he suddenly said: "I hope you won't be offended, but I would like very much to do something nice for your wife. One of the men on our board is the owner of New York's largest department stores. Allow me to introduce you to him tomorrow morning. You'll inspect his stores, select the best and most expensive clothes your wife would like, and Chase National will pay for it." All this talk took place in English. But here I turned to his other neighbor, member of the Amtorg Board Rosenstein, and asked him to translate that my wife would be extremely grateful if Mr. So-and-so, on her behalf, would donate money, of which he evidently has more than he needs, to some funds for aiding New York's unemployed. This was done, and the subject was never brought up again. Saying good-by, he muttered something about my "good joke." I'm afraid the unemployed will get nothing on your behalf. I believe that you will not regret the lost opportunity of getting all "the best and most expensive" in New York.

A Fat Turkey for Christmas

Litvinov left for Europe on board the Italian ship *Conte di Savoia.* In honor of the Soviet diplomat and his country, the liner hoisted a red flag.

From early morning a huge crowd had gathered. Litvinov made his way with difficulty to the gangplank and went on deck. Thousands of people waved good-by to him. "Long live Soviet Russia!" resounded on all sides. Also on deck were Postmaster General James A. Farley, who was sailing to Europe on the same ship, and diplomats from Washington who had come to see Litvinov off.

The *New York Sun* reported that in the general excitement over Litvinov's departure, Postmaster General Farley and the other dignitaries were edged out of public notice, forgotten by all except the policemen around them. The ship left the dock to loud cheers for Litvinov and his country.

While the negotiations were still in progress and especially afterward, the American press devoted whole columns to the event. The reports were conflicting. The isolationist press tried to scale down the success of Soviet diplomacy and reproached Roosevelt for letting Litvinov get the better of him. But there were also more sober appraisals. Though that prominent American journalist Walter Duranty proclaimed in the *New York Times* that the agreements were a "Yankee horse trade," he did point out that Litvinov was a "pretty shrewd trader himself." One should not forget, said Duranty, that the blood of Dutch traders and New England businessmen flows in the veins of Franklin Roosevelt, while Maxim Litvinov belongs to a race that has always been famous in the field of commerce. . . . "To sum up, I should say Litvinov is returning home with a pretty fat turkey for Christmas," concluded Duranty.

While Litvinov was sailing across the Atlantic, the radio and telegraph carried scores of reviews and commentaries on the Washington talks. The *détente* between America and Soviet Russia was covered by newspapers in Paris, London, Stockholm, Tokyo, Warsaw, Madrid and other capitals. Commentators differed in their appraisals, but they all conceded that it was an event of historic importance, not merely the signing of another diplomatic document. Even the press of nazi Germany was forced to admit the enormous success of Soviet diplomacy. That newspaper of big business, the *Frankfurter Zeitung,* wrote: "The Soviet Union has really broken through the last blockade that surrounded it." Of course, there was no foreseeing then that this document had laid the cornerstone of the future antinazi coalition.

Soon after the Washington negotiations, the French statesman Edouard Herriot, deploring the lack of consistency and the zigzagging and fruitlessness of French foreign policy, said that he wished his country had a Litvinov for Minister of Foreign Affairs.

The Last Fortress Falls

Litvinov returned to Moscow on December 9. Colleagues from the People's Commissariat of Foreign Affairs, foreign diplomats and journalists came to meet him at the Byelorussian Terminal. *Pravda* carried a drawing by the famous artist Deni on its front page. The artist had depicted a smiling Litvinov with a briefcase under his arm. It bore the inscription: "Peaceful policy of the USSR," and off at the side was a downcast militarist near his gun.

On the eve of the new year of 1934, the Central Executive Committee of Soviets opened its fourth session.

On the first day of the session Kalinin gave the floor to the People's Commissar of Foreign Affairs.

Litvinov was warmly greeted by the deputies. He made one of the most important speeches in his thirty years of diplomatic service. He gave an analysis of the world situation and explained why the United States had to recognize the Soviet Union.

This republic alone among the major powers stubbornly refused not only to recognize the Soviet Union formally, but even to acknowledge its very existence. Thus, it did not wish to formally accept the fact of the October Revolution, continuing to recognize the Provisional Government of Kerensky, which existed for it somewhere out of time and space, and it has maintained official relations with its agents up to just recently. It was recalcitrant not because its differences with us were greater than those of other countries or because it had suffered more from revolutionary laws than did others. No, in essence it was continuing the war declared by the whole capitalist world after the October Revolution against the new Soviet state system whose aim was to build a socialist society. This was a struggle against the peaceful coexistence of two systems. Seeing its associates in this struggle, the other capitalist countries, quitting the field of battle one by one, America said to them, as it were: I understand your point of view, you are weak and in difficulties; you are making great sacrifices and therefore must quit the fight. But I am sufficiently strong to carry on for all of you. For fifteen years it staunchly maintained its position, but now it has finally had to give up the struggle. That is why, comrades, in my exchange of letters with President Roosevelt of November 16, one must see not simply the recognition of us by yet another great power, but the collapse of the last bastion, the last fortress in the offensive against us by the capitalist world, which after the October Revolution took the form of nonrecognition and boycott.[5]

Litvinov was no great orator. Had he lived in ancient Rome, he would have attracted no more than a handful of listeners to the square before the Forum. He did not capture audiences by the timbre or modulation of his voice, but by invincible logic, by the force of internal conviction which he conveyed to his listeners.

Litvinov held the floor for a long time. He spoke of the processes developing in bourgeois society and drew a conclusion that was reiterated for many years by diplomats, scientists and propagandists. He said that a war was brewing, that it was being instigated by nazi Germany and imperial Japan, that it would first be directed against the Soviet state, and for this the army and all the people had to be prepared.

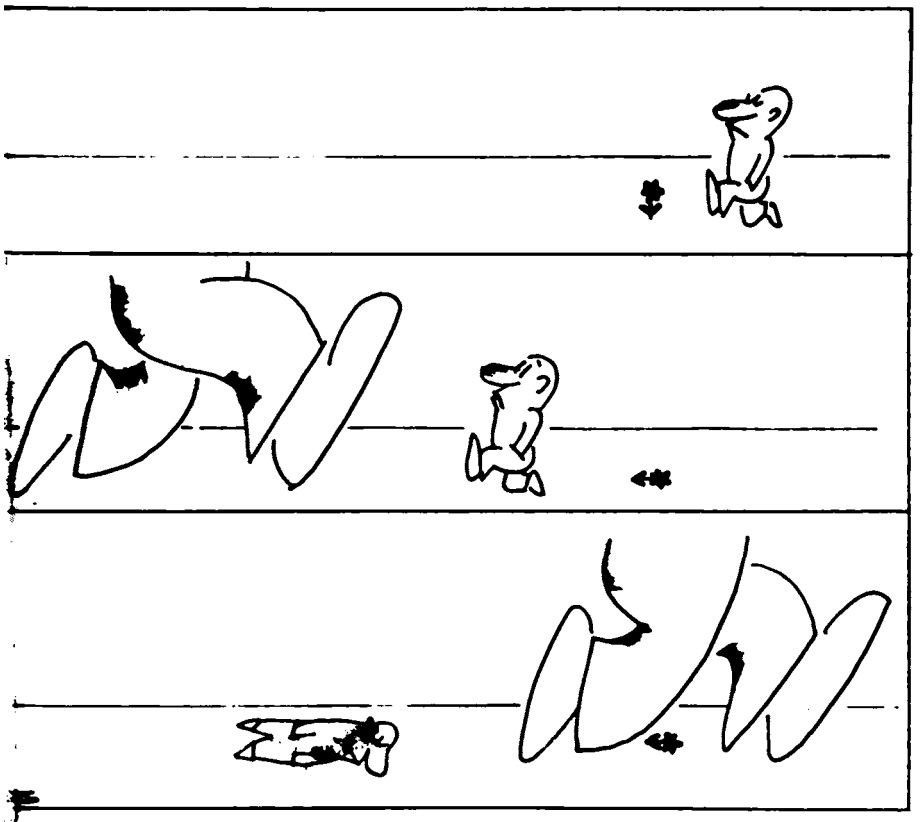
As Litvinov gathered up his papers and stepped down, the deputies gave him a standing ovation.

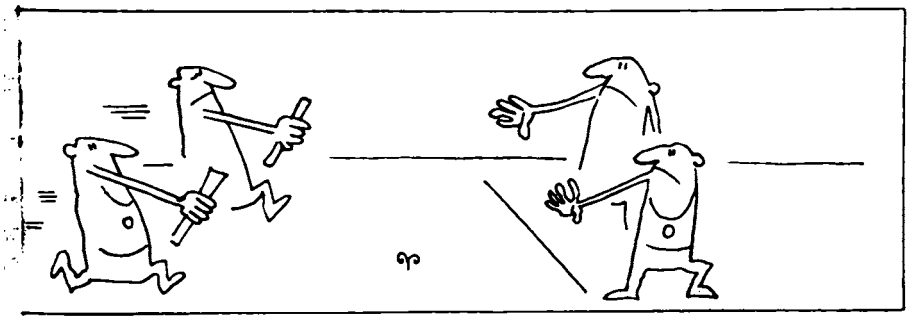
This was on December 29, 1933, in the seventeenth year of Soviet power.

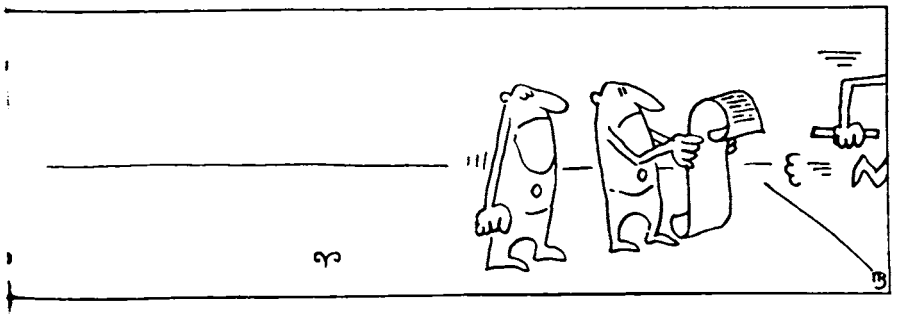
[4] M. M. Litvinov, *USSR Foreign Policy*, Speeches and Statements (Moscow 1935), pp. 61-63.

[5] Ibid., pp. 262-263.

(To be continued)

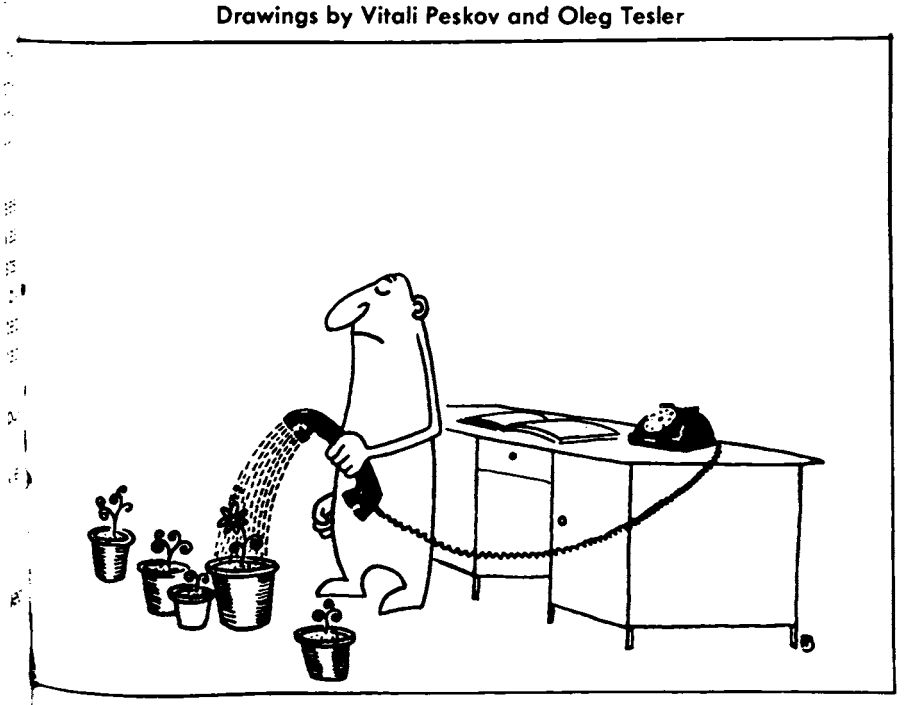




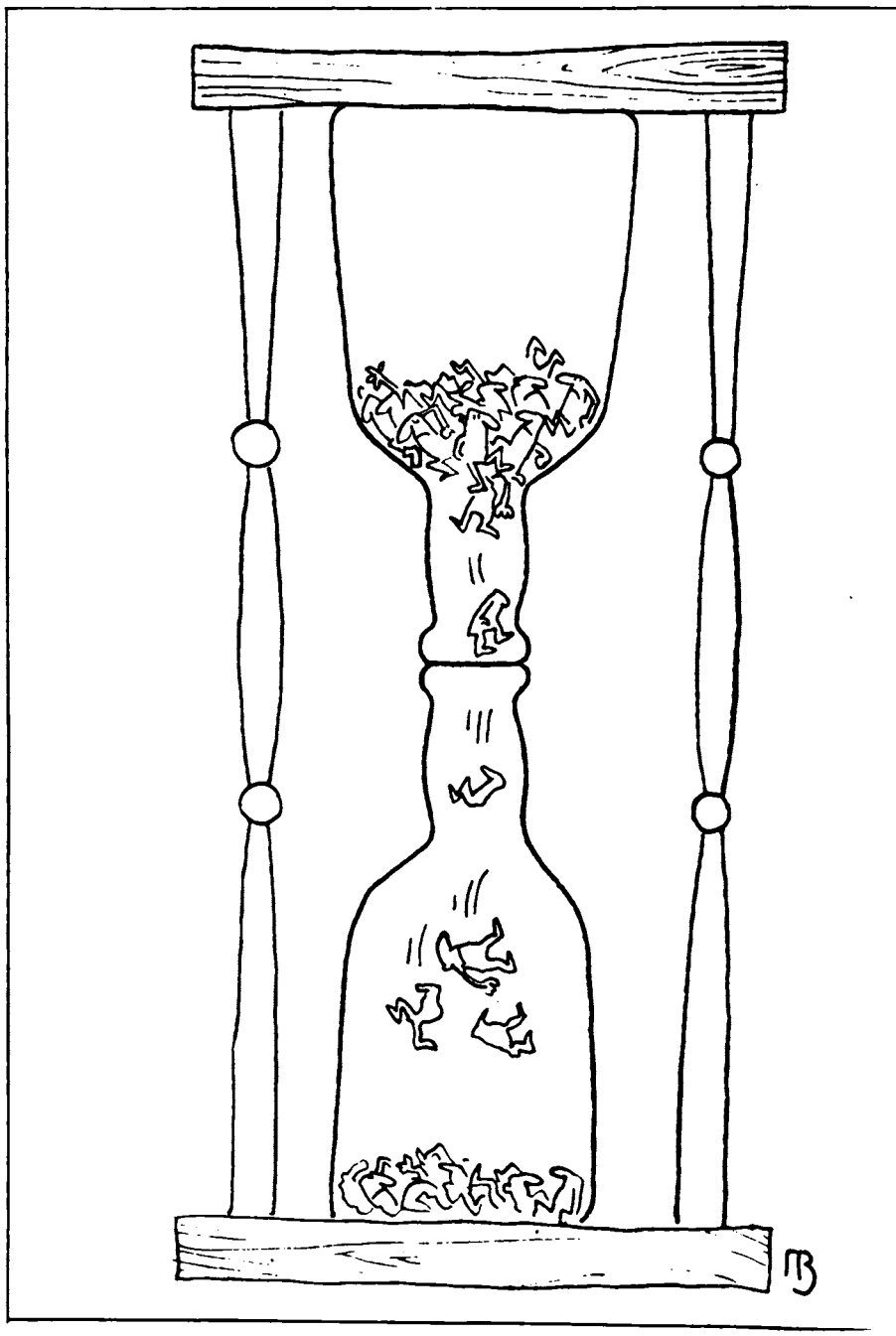


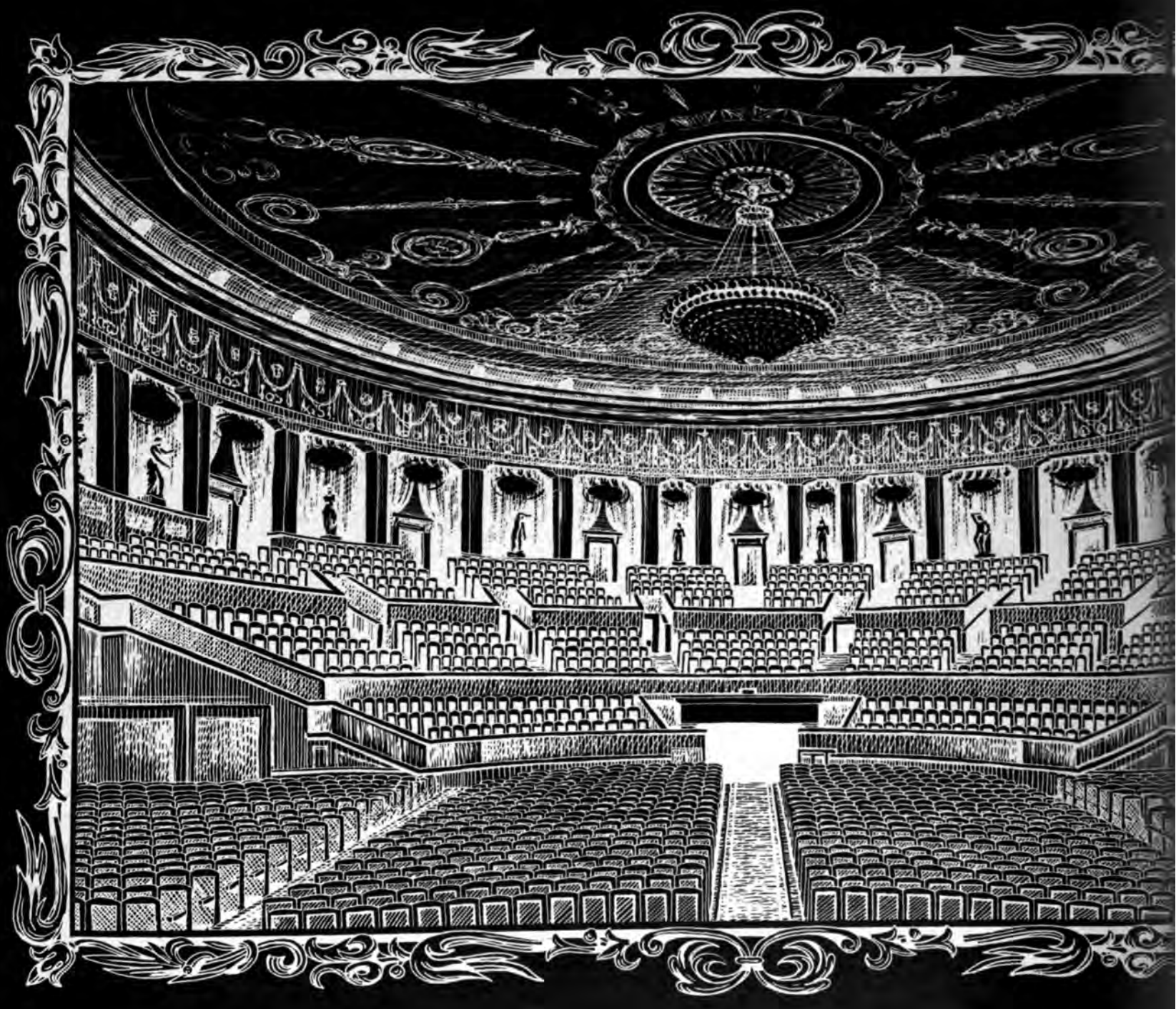
HUMOR

Drawings by Vitali Peskov and Oleg Tesler









THE BOL
THEA
BUT IN SIB

Natalya Lagina
Art Critic



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PARIS CRITICS went out of their way to applaud young ballerina Tanya Vasilyeva for her performance of the variations from Sergei Prokofiev's ballet *Cinderella*. She was awarded a prize named in honor of a famous predecessor, Anna Pavlova. When French reporters asked Tanya which ballet company she was with—the Moscow or the Leningrad—her answer surprised many of them: "The company in Novosibirsk, though I was born and graduated from a ballet school in Leningrad."

"Novosibirsk? But that's somewhere back of the beyond. Why did you go there?"

"I wouldn't call it back of the beyond," answered Tanya with a smile. "Anyway, Novosibirsk has a remarkable theater. Many actors and dancers would be happy to join the company. I'm glad I did."

Shortly thereafter Parisian balletomanes saw for themselves that "remarkable" was no exaggeration. The ballet company's spring 1967 tour of France and a score of other countries was a resounding success.

The opera company of this theater, the youngest of its kind in the Soviet Union, is no less remarkable. Some of its soloists are world famous, and the company has earned itself the appellation "Siberia's Bolshoi."

The theater is twenty-three years old. Its opening performance was on May 12, 1945. Four days earlier, on May 8, the dress rehearsal of Glinka's opera *Ivan Susanin* had been interrupted by the news of the German surrender and the end of the war. In other words, the Novosibirsk opera was born on V-Day. When its company was formed, the city had neither a conservatory nor a ballet school of its own. However, the invitation to cooperate was accepted by many singers and dancers who had studied in Moscow, Leningrad and Kiev. As for the *corps de ballet* and chorus, they were recruited directly from local amateur groups.

"Create, Invent and Try"

What accounts for the quality of the theater? Several things. The key factor is probably experimentation. "Create, invent and try!" this line from Vladimir Mayakovsky's poetry has been the credo of the Siberian company since its inception. It has tried a wide variety of styles and approaches.

Many now famous theater people were trained at the Novosibirsk theater: Roman Tikhomirov, chief stage director of the Kirov Opera Theater, Leningrad; Lev Mikhailov, People's Actor of the USSR and chief stage director of the Stanislavsky and Nemirovich-Danchenko Musical Theater in Moscow; Alexei Krivchenya, a Bolshoi Theater singer; and Gennadi Ledyakh of the Bolshoi Ballet, to mention a few. Yuri Grigorovich, chief choreographer of the Bolshoi Ballet, began his career in Novosibirsk. He staged Sergei Prokofiev's *Stone Flower* and Arif Melikov's *Legend of Love*. Tchaikovsky's *Sleeping Beauty*, now being performed at Novosibirsk, was staged by Konstantin Sergeyev, chief choreographer of the Leningrad Ballet. The designers are Konstantin Yuon and Suliko Virsaladze, whose fame is nationwide.

More opportunities for young people is one of the company's principles. Oleg Vinogradov joined as a dancer when he graduated from the Leningrad Ballet School. Before long he was starring in nearly every production. Then the managers noticed Oleg's penchant for independent choreography, and he was entrusted with the staging of the pastoral in *The Queen of Spades* and the dances in Edward Lazarev's satirical opera *The Bedbug*. The experiment was a success. Vinogradov also distinguished himself as a stage designer for *The Princess of the Circus* and *The Circus Is Ablaze With Lights*. Vinogradov's choreography matures with every new ballet. Today his choreographic style in Prokofiev's *Cinderella* and *Romeo and Juliet*, which he staged in Novosibirsk,



Andrei Fedoseyev rose to fame almost overnight. He is considered one of the country's best in the title role of Mozart's opera Don Giovanni.

and Vladimir Vlasov's *Asel*, which he staged at the Bolshoi Theater, is acclaimed as most original and striking.

Oleg Vinogradov's debut in *Cinderella* coincided with his twenty-fifth birthday. Now he is thirty and considered one of the most promising Soviet choreographers. True, this last season he worked in Leningrad, not in Novosibirsk, but this is apparently the lot of the Novosibirsk theater. As soon as someone makes a reputation, Moscow or Leningrad come calling.

"How do you feel about developing young talent which is enticed away by the theaters of Moscow and Leningrad?" I asked Emil Pasynkov, chief stage director of the Novosibirsk company.

"We take it in stride," he said. "We are even flattered that the country's best theaters steal our people. Besides, they don't break off their creative association when they leave. They take part in our gala performances and direct some of our plays, ballets and operas. There is a continual flow of young talent, and others quickly replace them."

The Young People Set the Tune

Soprano Zinaida Didenko is an example. She joined the company when she graduated from the conservatory in Gorky and sang eight leading roles in one season. Andrei Fedoseyev, a graduate of the Moscow Conservatory, also became a leading soloist almost overnight. Today he is one of the country's most sought after performers for the role of Andrei Bolkonsky (in Prokofiev's *War and Peace* and Don Giovanni in Mozart's opera, and he is also a subtle interpreter of several modern operatic parts.

Most of the young singers are graduates of the Novosibirsk Conservatory. Those especially gifted are on stage long before graduation. Valeri Yegudin, a dramatic tenor, sang a very challenging role in *The Bedbug* when he was a student, and his graduation role was Gherman in *The Queen of Spades*.

That is the most natural way of joining Novosibirsk's ballet and opera companies. But there are other ways too. Sometimes the country is scoured for someone to fill a leading role, though understudies are always there just in case. A happy find of this kind was Lesya Shevchenko, a student at the Odessa Conservatory. In her fifth year at the conservatory she was cast in the new staging of an opera and, after a successful debut, went back to Odessa to earn her degree. She returned to Novosibirsk a full-fledged opera singer.

The theater also signs contracts with artists from other companies. Two such recent newcomers are the well-known Bulgarian singer Ivan Dimov who sang in *Aida* and *Othello*, and Nina Timofeyeva, a ballet dancer from the Bolshoi Theater, who danced in *Romeo and Juliet*.

"We want to push out beyond our own limits," the chief director says. "However, when we invite performers from other companies, we do not think of them as outsiders but as part of our group. Even when we invite stars, we try to infect them with our own Siberian creative virus."

"Do you succeed?"

"I think we do. And that does not only apply to performers. We also involve composers. Antonio Spadavekkia made another version of his opera *The Gadfly* and Tikhon Khrennikov a second version of his opera *A Plebian Son-in-Law* especially for us. Dmitri Shostakovich came to Novosibirsk to help us stage a *Boris Godunov* he had edited and orchestrated. Now we are working on the opera *Khovanshchina*, also orchestrated by Shostakovich, with the composer participating directly in the staging.

This theater does not go in for resplendent stage designs; it prefers understated graphics whenever possible. The dramaturgy of color is as full of impli-



Raisa Antonova and Andrei Levitsky give original interpretations of the Don Giovanni *characters Zerlina and Leporello.*

cations here as in Michelangelo Antonioni's films. The staging of *Othello, Don Giovanni* and *Boris Godunov* is especially interesting in this respect. On the other hand Khrennikov's musical *A Plebian Son-in-Law* is as full of riotous color as a Shrovetide crowd. Next to it the design of *The Sleeping Beauty,* which was staged so successfully a while back, is austerely elegant.

The composers working for the Novosibirsk Theater are as young as its performers. Edward Lazarev was 27 on the opening night of his opera *The Bedbug.* It is based on Mayakovsky's play. The authors of the first lyrical opera, *Alka's Song,* copyrighted by the Novosibirsk Theater, Georgi Ivanov (music) and Anatoli Ivanov (lyrics), are also young.

Yes, young people do set the tune here. On tours all through Siberia and the Far East, the company gets an especially warm welcome from the young people now transforming these parts of the country. In Komsomolsk-on-Amur the company was cited Honorary Builder of the city.

This is a mobile theater in the very best sense of the word. Like omnipresent Figaro, it is constantly on the go. It plays to audiences in the remote North, in the port of Nakhodka, on the construction site of the Bratsk Hydroelectric Station on the Angara, in the country's capital. It has toured Vienna, Tokyo, Cairo and the cities of Australia. Its repertoire is broad, with an especially large representation of Russian and world classics. In the 23 years of its existence it has had one hundred first nights.

"So far everything is rosy. But aren't there any thorns?" I asked the chief stage director.

Siberians Are a Stubborn Lot

"Of course there are thorns. As a matter of fact there are more difficulties than easy successes," he answered. "But I should say that these difficulties are typical of any theater of this kind in our country. Our composers produce too few operas and ballets, I mean really good ones. We turn down anything second rate. Our search is sometimes agonizing. To tell the truth, we have had to resort to theater versions of oratorios because of lack of operatic material. We intend to stage a trilogy of Georgi Sviridov's oratorios based on the poetry of Vladimir Mayakovsky, Sergei Yesenin and Alexander Blok. We hope that Sviridov will write an opera for us. For the time being, however, we have no opera, just a hope.

"And here is another problem while we are on the subject. Our stage is very large, larger than the stage of Moscow's Bolshoi Theater. It's fine for large-scale performances but embarrassingly big for such chamber works as *Don Giovanni.* It taxes all the ingenuity we have to stage chamber operas. To get the acoustical effects we want, we have to bring the stage closer to the audience, almost into the orchestra pit. However, all these problems are not as formidable as they sound. We are Siberians, and Siberians, as you know, are a stubborn lot."

Emil Pasynkov, Merited Artist of the Russian Federation, was born in Leningrad, graduated from the conservatory and worked at the Kirov Opera Theater in Leningrad, where he staged Shostakovich's opera *Katerina Izmailova.* He had a promising career in his native city, and when he was invited to Novosibirsk, he accepted without a second thought. He was thirty years old; the theater was only fourteen. Eight years later, in 1963, the company had won the title Academic Theater, and Emil Pasynkov had established an enviable reputation for his direction.

He will never leave the Novosibirsk Theater. Though he comes from Leningrad, he calls himself a Siberian. And so do all his colleagues. They are honest-to-goodness Siberians, whether they were born here or drawn here by the romance of a new frontier.





The country's youngest opera theater, located in Siberia of all places, stages The Three Musketeers *in really gasconade tempo.*

IT WOULD BE NATURAL for this tall brisk man with gray hair to bear a grudge against everyone. Twenty years ago he submitted the results of his studies to the judgment of scientists. They conflicted with long accepted explanations of the principles of life. He had made a remarkable and wonderful discovery which suffered an unfortunate fate.

"Why do you call it unfortunate?" Volsky asked me. "The path of new ideas has been thorny in all ages and among all people. If you mean the endless arguments with scientists who disagree with my findings, I consider that quite natural. If you mean the difficulties that could break a man's will, I am accustomed to them. I have been studying the strength of materials for forty years, and I believe that a good metal, a "healthy" metal, has no fatigue. At least it shouldn't have."

Steam Boilers to Biology

Professor Mikhail Volsky is head of the Strength of Materials Department at the Gorky Institute of Water Transport. I could speak at length about his many technical achievements—the new locomotive boilers he designed or his boilers for ships. But the discovery that attracted attention has nothing to do with technology. It was a new concept of respiration.

"What was the reason for this unusual shift from thermal stresses in steam boilers to biology?"

"It was pure chance," says the professor, smiling to himself as he recollected wartime Moscow in 1942 and a woman-doctor, a stranger, who had asked him to help her calculate the perimeter of an elliptical trachea for her master's thesis on the physiology of respiration.

"I was surprised to learn that the doctor did not need any other calculations. What about the cross-sectional area of the trachea, the rate of air flow through the respiratory duct, the loss of air pressure and so on? It seemed odd to me that these figures did not interest her. In my opinion they were closely related to the mechanism of respiration.

"I sat down to study. I tried to grasp the underlying basis of the physiology of respiration by translating the biological meaning of existing postulates into mathematical formulas. However, the rigorous formulas were at variance with the conclusions of physiologists.

"I wanted to know whether the error lay with the traditional theory or with my calculations. Well, that was the starting point of my intrusion into the foreign field of medicine."

Volsky had never held a scalpel in his hands. The Strength of Materials Department did not and could not keep animals for experiments or equipment for studying lung activity. But his desire to verify the vague assumptions suggested by his calculations was so great that he set up his own laboratory at his own expense.

The new work required much more than self-sacrifice. Intrusion into physiology, a science with a history of several thousand years, a science where everything had long been clear, habitual, a priori, was sure to bring more grief than success. I believe that this is why today Volsky is so calm and judicious as he shows me dozens of letters and reviews, hundreds of pieces of paper which directly or indirectly advise him to mind his own business and leave physiology alone. However, the "business" was started and produced results that were quite unexpected.

Inhalation and exhalation that follow one another are as natural as life, they bring life. Why do we breathe? What drives the fantastic tangle of alveoli and bronchioles to either dilate or turn into amorphous cells? This would seem to be a simple and a well-known process. Physiologists believed that it was the result of changes in the capacity of the thorax and that in the narrow space between the thorax and the lungs there was a vacuum with a small quantity of liquid.

Volsky's experiments show a different picture. According to the laws of physics, a vacuum in the pleural cavity is impossible. The pleural cavity has to contain air which, on its way there through numerous obstacles, loses its pressure and becomes rarefied.

The lungs are surrounded with air. The changes in pressure with inhalation and exhalation are a necessary element in the process of respiration. This is the main but not the only conclusion drawn by Volsky. He verified this conclusion by experiments which, though very simple, nevertheless continue to provoke argument. It is hard to judge which side is right because there are dozens of pros and cons. Then there is the danger of falling under the influence of impressive opinions. Time is a good arbiter in such circumstances. Of course it would be better if this question were decided as soon as possible because the outcome of this academic argument has important implications for practical medicine. Understanding



Mikhail Volsky was cited by the USSR Academy of Sciences for determining that animals and higher plants assimilate atmospheric nitrogen.

INERT OR LIFE-GIVING?

BY ELEONORA GORBUNOVA

Science Commentator of Novosti Press Agency

Last September 10, the Inventions and Discoveries Committee of the USSR Council of Ministers cited the work of Mikhail Volsky, Doctor of Technical Sciences, as a discovery. "A previously unknown ability of animals and higher plants to assimilate atmospheric nitrogen required for their normal vital activity has been established."

The discovery has been entered in the USSR State Register as No. 62, with priority from December 19, 1951.

the physiology of respiration is the basis for understanding pathological processes and new methods of treatment.

Air as a Nutrient

There were quite a few occasions in the history of medicine when unbidden "strangers" introduced revolutionary ideas. Remember that Ilya Mechnikov had been a zoologist, and Ivan Sechenov a military engineer, to mention only two. Today chemists, mathematicians and physicists render modern biology a great service by introducing the methods and views of their sciences. These specialists are not weighed down by the burden of tradition and therefore have a right to be "ignorant," to doubt the concepts which in biologists' minds have long become synonyms for truth.

Atmospheric nitrogen is an inert, lifeless gas. This is what our teachers and the teachers of our teachers used to say. It was considered an indisputable fact!

Nitrogen is a vital link in the structure of protein molecules and hence in the chain of life. Its sources could have been called sparse if the air around us did not contain twenty-three tons of nitrogen per square mile of the earth's surface. But atmospheric nitrogen is a fiction. It can only be used as raw material for complex modern installations producing compounds the organisms of human beings, animals and plants can accept.

Is it possible that during their agelong evolution living beings did not learn to use atmospheric nitrogen, this vital gas that is inhaled in such abundance with the air?

Volsky considered this problem a natural extension of his study of human respiration. In this case as well his investigations were stimulated by the disparity between numerical data and postulates.

For instance, an embryonated egg is able to build up protein without any external supply of food. Another example which is quite as simple: a man's body weighing about one hundred and seventy-five pounds contains thirty-five pounds of protein or five and a half pounds of nitrogen. The man's daily food ration contains no more than one-fifth to one-half ounce of nitrogen. This quantity is far too small for the continuous process of protein synthesis and for renewing cellular protoplasm. If this is true, what compensates for this nitrogen deficiency? Can it be atmospheric nitrogen? However, this assumption is almost heretical, a violation of the 150-year-old principles prevailing from the days of Lavoisier. Nevertheless, Volsky started conducting "strange" experiments in his laboratory.

Identical groups of eggs were placed in two exsiccators. One group was surrounded by normal atmospheric air. In the other exsiccator the atmospheric nitrogen was replaced by argon. Four days later and at the proper time normal chickens were hatched in the first exsiccator; the development of the chickens in the other was obviously delayed.

"Could this be explained by the injurious properties of argon and not by the fact that the embryo requires nitrogen for normal development?" I asked the professor.

"No," he answered. "A similar result was obtained when nitrogen was replaced by helium, which like argon does not enter into reactions injurious to living tissues under normal conditions.

"We have performed hundreds of experiments with animals and plants, making some of them live in an atmosphere devoid of nitrogen while others lived under normal conditions. The results were invariably the same: The absence of nitrogen impaired development. At the same time their consumption of nutrients increased sharply as if their instinct told them to compensate for the absence of atmospheric nitrogen by absorbing the nitrogen contained in food."

"Then these experiments cannot be considered absolute proof of the fact that atmospheric nitrogen is used for building up protein?"

"Our hypothesis was confirmed by experiments with labeled nitrogen, or to be more exact, by the use of an isotope of nitrogen with which we filled an airtight chamber. On analyzing the proteins contained in embryonated eggs developing in these conditions, we invariably found labeled nitrogen in them."

"If atmospheric nitrogen is really a vital gas and not simply dissolved in the body tissues, there must be ways by which it enters chemical compounds for building protein molecules."

"I believe that there may be several ways of assimilating nitrogen, the main and most important being its acquisition by erythrocytes, *i.e.* red blood corpuscles, containing fumaric, asparaginic and other acids. This process is augmented by the effect of atmospheric ions on the human, animal and vegetable organisms in that they increase the content of hemoglobin, the erythrocyte and the leukocyte counts and improve metabolism.

"Nitrogen may be fixed in the form of ammonia and other compounds due to the presence of such microelements as cobalt, lithium, iron, copper, molybdenum, boron or titanium. It is probable that bacteria in the lungs and the gastrointestinal tract play an important role in this process.

"By the way, isn't it paradoxical that the assumption that some bacteria assimilate inert nitrogen is no longer strange? Why shouldn't we make a further assumption that their relatives inhabiting a live body are capable of the same thing?"

Naturally, the solution of this problem requires further investigation in microbiology, biochemistry, physiology and other fields of biology. The group of scientists headed by Professor Volsky (incidentally, now this group has been formed into a laboratory at Gorky University) is too small for so multifaceted and complex a job. But the indomitable Volsky is making vast plans for experiments to verify the theory that has taken twenty years of his life.

Today there are many more adherents to the theory and more facts proving it right.

Is nitrogen inert or life-giving? The anwser to this question affects the answer to many questions: in general biology, for example, the great problem of the origin of life; and in everyday practice, the problem of plant nutrition and ways of increasing plant productivity. Then there is the eternal problem of the effect of environment on the body, and lastly the problem of creating a conditioned climate on board a spaceship.

VSEVOLOD STOLETOV: FROM HYPOTHESIS TO DISCOVERY

MINISTER OF HIGHER AND SPECIALIZED SECONDARY EDUCATION OF THE RUSSIAN FEDERATION COMMENTS ON THE DISCOVERY MADE BY MIKHAIL VOLSKY

NITROGEN as a chemical element has stirred the minds of naturalists for two centuries, and not without reason. Free nitrogen is chemically inert, while in combinations with other elements it is unusually active. The volume of fixed nitrogen in the earth's crust is negligible; the volume in biological matter is large. Since the end of the eighteenth century nitrogen has been considered unnecessary for life although nucleic acids and proteins, which are essential to life, must contain fixed nitrogen.

As far back as 1946 Mikhail Volsky expressed his doubts that nature had "delegated" to nitrogen, which constitutes 78 volumetric per cent of the earth's atmosphere, the passive and humble role of an oxygen diluent. He began to study the role of nitrogen in the respiration of animals and higher plants. In his search for an answer he decided to determine the content of nitrogen in an embryonated egg at various stages of its development.

The results of this experiment and, moreover, their explanation were most unexpected, and at first the majority of scientists were not ready to accept his assumption. However, further experiments with the incubation of chickens, the pupae of bees, corn and other objects invariably proved this bold assumption. That is the background for this remarkable discovery.

Question: What directions should further studies based on Professor Volsky's discovery take?

Answer: The study of the biological mechanism of assimilation of molecular atmospheric nitrogen by live organisms is most important. Professor Volsky has formulated several hypotheses. They are based on a variety of scientific data concerning the properties of blood and chlorophyll, the effects of atmospheric ions on plants and animals, the role of microelements in life and the role of the microscopic "inhabitants" of plants and animals, *i.e.* microbes and viruses. Every hypothesis requires thorough experimental investigation, and further development will be based on these investigations. These, in my opinion, are the directions for future research.

Question: What plans are there for improving Volsky's laboratory?

Answer: For twenty years Professor Volsky, a true scientist, has energetically and devotedly searched for a solution to a problem that interests him. He is a doctor of technical sciences, but for a deeper understanding of the chemicobiological problem he was solving, in 1964 he wrote a thesis for a doctor's degree in biology.

His self-sacrificing work has not been unnoticed and has received strong support. Professor Volsky now has a good laboratory with first-rate equipment.

The ministry proposes to equip the laboratory with additional advanced equipment and enlarge its staff. The conditions for training more personnel will also be improved. The ministry will also provide for the publication of the studies done in the laboratory.



Ex-Arctic mariners and mechanics (left to right) Ilya Medvedovsky, Arvid Karklin, Sergei Perminov and Dmitri Chukhchin talking over old times.

SEA DOGS RETIRED

By Marina Khachaturova
Photographs by Yevgeni Svet



Polar seamen seem to have chosen Kherson, a town in the warm South, to retire in. This is Arctic Street, where many of them own their own home.



Captain Dmitri Chukhchin's major occupation now is gardening, interrupted on frequent occasions by granddaughter Irina and puppy Sharik.



It's not easy becoming a landlubber if you've sailed the seas as many years as Captain Andrei Burichenko has. He was 72 on his last birthday.

WHY A STREET NAMED ARCTIC in Kherson, in a Southern city? Newcomers wonder, but the name is not out of place. The residents of Arctic Street all used to work in the North. They were captains, navigators, mechanics, or held jobs in the ports, the offices of steamship lines, shipyards. They are people who sailed the northern seas and had permanent homes north of the Arctic Circle, where winter is long and summer so short that dwellers in the middle latitudes would argue seriously whether there was any summer at all.

Some of the retired Arctic and Antarctic seamen have been moving to Kherson for eight years now. The first Northern pensioners to come in 1960 were given plots of land on the city's outskirts, a stretch of wasteland they have transfigured into a flourishing green island. Kherson itself is situated on the Dnieper, where it flows into the Black Sea, and has a population of some 200,000. The port was founded by Prince Grigori Potemkin, favorite of Catherine II, in 1778. Since then it has grown in size and importance, adding factories and mills as well as dwellings. But Kherson's chief attraction is still its setting on the broad, smooth Dnieper, the third largest river in Europe after the Volga and the Danube.

As I approached Arctic Street in a taxi I was struck by the greenery. There are two-story houses on the street, surrounded by vineyards, fruit trees and vegetable and flower gardens. The houses are brick. Each of them was built from the savings of the pensioners plus a loan from the state of 700 rubles, amortized over a 10 year period. The state also paid out 30,000 rubles to build roads, bring in electricity and lay sewage pipes and water mains.

These are two-family houses, divided vertically, each having a dining room, kitchen, bathrooms and sunporch downstairs, and three rooms and a sunporch upstairs. The furnishing is done by the owner. Some of the pensioners prefer antiques, others incline to the very modern. Although Arctic Street is all pensioners, I saw no really old people there. Old is the last word you would apply to the energetic, cheerful senior citizens in this community. A record of 15 years of work in the North entitles you to retire five years earlier than other people: men at 55 and women at 50.

The Art of Staying Young

Old age is something no one looks forward to. It is hardly the best time of life, even with financial security. It is not surprising that a whole field of medicine is working on the miseries aging brings. If, some 100 to 200 years from now, the diseases which accompany old age can be alleviated, many good things will remain: vitality, experience, knowledge and wisdom.

History has many examples, going back to ancient times, of fruitful work done in old age—not only by creative people such as writers or artists, but by all sorts of individuals doing the work they love.

Many people look forward with misgivings to retirement and a life of enforced, although earned, idleness. Before the residents of Arctic Street retired, they spent their vacations in Kherson. They liked what they saw. Growing old no longer seemed so uninviting.

It was not the thought of their own homes, built on plots of land the state would give them, that brought Northerners to Kherson. It was the knowledge that they would have work to do, work within their limitations, when they grew old. Although it would be different from the kind of work they had been doing, it would be purposeful, constructive toil. Children, they say, have to be reared as carefully as a gardener cultivates a tree. Turn that saying around and it fits the people on Arctic Street. They have all raised children; now they are growing grapes, cherries, plums, peaches, apricots, tomatoes and, of course, roses in their gardens. They mastered the art of navigating ships; now they are mastering the art of growing things, learning from books and the example of others. They have said farewell to the icebreakers and returned to the land, to the ancient calling of agriculture.

From the White Sea to the Black

In 1954 the Arctic steamship line was shifted from Arkhangelsk, on the White Sea, to Murmansk, a port on the Barents Sea that is ice free the year round. Some of the seamen moved to Murmansk with their families. Not many of the residents of Arctic Street are native Northerners. Only Captain Dmitri Chukhchin and Nikolai Toropov, who used to be a chief controller, were born in Arkhangelsk Region. The rest come from all over the country. Some have returned south after many years of work in the North. Georgi Azadov is an Armenian from Odessa, for example. Ilya Medvedovsky is a Jew who was born and raised in Kherson, and Anatoli Durov is a Russian from the Donets coal fields. Arvid Karklin was born in Ventspils on the western coast of Latvia, Valentin Domogatsky comes from Vladivostok, the Soviet Far East and Sergei Perminov from Kronstadt, near Leningrad. Despite this geographical diversity, however, long years of work in the North have made them all true Northerners.

The climate of a country always stamps the people who live there, giving them traits and characteristics peculiar to the region. The North shows up a man for what he is worth very quickly. It does a sort of "natural selection" to reveal traits that would be easily tolerable under less rigorous conditions, but are completely unacceptable in the North. The high standards Northerners set themselves have not made them rigid and intolerant. On the contrary, they are kindly, responsive people, always ready to help others, people who set a high value on friendship and cooperation.

True to their principle of thinking of others they planted fruit trees as well as acacias and chestnuts along their street, and let the passerby help himself. On their own plots of land they raise fruit and vegetables, not for the purpose of selling, but because they like the outdoor exercise. All of them have their pensions and savings. Many families have their own cars. Because of the hard working and living conditions in the North everyone who works there, from an ordinary seaman to a captain, is entitled to the maximum pension of 120 rubles a month. The pension is not based on their earnings, for a captain makes 600 rubles a month and a seaman 250.

Although these Northerners have made the South their home, they have not lost touch with the Arctic. They all subscribe to the *Arkticheskaya Zvezda* (Arctic Star), a newspaper published in Murmansk, and correspond with old colleagues, who sometimes come to Kherson for a visit. They are interested in everything that goes on in the Northern merchant fleet: who was appointed to what position, who was made captain of what ship, who has retired or moved away. And they write books—not novels, but books about navigating through the ice floes that they hope will be useful to their successors. One such book, *Sailing the Antarctic,* by the late Alexander Dubinin, captain of the *Ob,* summarizes the experience of Antarctic expeditions. And although it is an account of mooring ships to ice floes, loading and unloading operations and other such things, it is also a story of a full life. The residents of Arctic Street have all led such lives.

They range in age from 55 to 65 years. All of them have traveled widely and seen a great deal. All fought in the last war. Ilya Medvedovsky, a mechanic who retired two years ago, still carries a shell splinter in his chest. Of all the people on Arctic Street he seemed to me the least like a Northerner. Medvedovsky has a carefree air about him that is not typical of the people of the region. He is a jovial man, full of wisecracks, the "life of the party," who likes his drink and still has an eye for the girls, despite his four grandchildren. As a disabled war veteran he is entitled to free accommodations at a health resort for 24 days every year, does not have to pay to use urban transport facilities and gets a 50 per cent discount on railway tickets. As a pensioner he can work two months a year and still draw his pension. Last year he earned 300 rubles during the two months, and received a bonus of 100 rubles from the chief of the port besides. Medvedovsky is also active in community affairs. Twice a month he leads a study group on current affairs for the workers at the Kherson port.

All the people on Arctic Street have children and many have grandchildren. Some of the children are still in high school, others are now in college and still others hold jobs. Only a few of the children live in Kherson. Both sons of Sergei Perminov, who was a mechanic on an icebreaker, are also mechanics and make Kherson their home, as does his daughter, a naval architect. But Ilya Medvedovsky's son, a hydrotechnician, lives in Vladivostok. The daughter of Arvid Karklin married a fellow college student from the German Democratic Republic and went back with him to Berlin. Karklin is sorry his daughter lives so far away. This year Karklin and his wife plan to visit their daughter in Berlin; they want to see their year-old grandson. Karklin sailed as chief mate for many years. From 1954 until he retired, he was chief of the cartographic department in Murmansk. He was in New York in 1949. His ship, the *Murmansk,* ran into a storm on the way and had to lay up in New York three months for repairs.

Senior mechanic Anatoli Durov has made several visits to the United States. The first was in 1935-1936, after we concluded a trade agreement with the U.S. He was navigation officer of the *Kharkov,* which carried optical goods, radio tubes and other items. Then, during the war, he transported food supplies under lend-lease. That was a dangerous business. On one voyage German planes sank 16 out of a convoy of 24 ships. Another time their convoy was attacked by submarines. Durov managed to survive. After the war, in 1946-1947, his ship carried the last lend-lease deliveries from the United States. The last few years before retiring he sailed the Antarctic on the motor vessel *Cooperation.* Durov is a rather gloomy, reserved man, the exact opposite of his neighbor Valentin Domogatsky, also a senior mechanic, who is a lively, sociable fellow. He is a year older than Durov, 59, but looks much younger—you would not take him for fifty. Thanks to his youthful appearance and high spirits Domogatsky "fooled," as he says, a much younger woman into marrying him, and now has a 14-year-old daughter.

The residents of Arctic Street like their new way of life. They all know one another from the time they worked up North and get along well. That is evident from the way they keep their "colony" clean and ordered and the care they give the trees lining their street, but it is even more evident in the attitude of neighbors to one another.

Living History of the Arctic

Every adult on Arctic Street has led an interesting life, but there is one who deserves special mention in this connection, the unofficial elder of the community, the famous Captain Dmitri Chukhchin. He merits a book all to himself.

As we go upstairs to his study on the second floor Captain Dmitri Chukhchin jests that he "hasn't sailed much, only forty-five years," and all forty-five in the North. The study is furnished with an old-fashioned rocking chair, a desk and three bookcases. Among the books, which include Tolstoy, Dickens, Dostoyevsky and Mark Twain, I noticed Fridtjof Nansen's *'Fram' in the Arctic Ocean, Tragedy in the Arctic Ocean* by Frantishek Begounek, a member of the Nobile expedition, and *Sailing the Antarctic* by Chukhchin's friend and colleague Alexander Dubinin, the Antarctic captain. Chukhchin opened an old-fashioned leather album to show me pictures of his and his wife's forebears, native Northerners from Arkhangelsk, with open, resolute, intrepid faces. His great-grandfather, grandfather and father were all seafarers, said the captain. His father took him on his first voyage when he was fifteen. It was fore-ordained that he should be a seaman.

The village near Arkhangelsk where Chukhchin was born was famous for its sailors and captains. There was nothing else the men in the village could become. The village had 200 vessels, all sail; there was no need for mechanics or stokers. In summer only women and boys under 12 or 13 were left; all the men went to sea. They voyaged to the coast of Norway carrying timber, Russia's traditional export. There they sold it, using some of the money to buy fish cheaply. The fish they salted and sold in Arkhangelsk. Dmitri Chukhchin was taken on as ship's boy. That was his first step toward the captain's bridge.

From another album, this one in a modern plastic cover, the captain himself stared out at me, not a gray-haired, sixty-five-year-old pensioner, but first a blond young man in the uniform of a naval school cadet, then a graceful young man in a photograph signed "To my dearest Maria." The picture was taken the year he married charming Maria Nikolayevna, thirty-six years ago, that was. As I leafed through the thick album Chukhchin kept saying, "That was in England . . . that was in France . . . in America . . . in Italy." He sailed on many vessels in his long life at sea and visited many countries. It is easier for him to list the countries he did not visit. One photograph showed him as a famous captain. Most of the pictures were of ships and ice floes, ice floes and ships. But looking at them was not dull; they were recorded moments of a rewarding life.

Dmitri Chukhchin is the living history of the Soviet Arctic. This man's history tells us far more than official chronicles and cut-and-dried accounts, because his was the life of a wise, honest, brave man. He was a part of that history, of the everyday routine and the heroism of Arctic development. In 1932 the *Alexander Sibiryakov,* with Chukhchin as captain, was the first ship to travel the Northern Sea Route from Arkhangelsk to Vladivostok in 65 days, in one navigation season. It proved that navigation through the icebound seas of the Soviet Arctic was a practical possibility. This voyage was so significant that accounts of it are to be found in geography and history textbooks as well as the specialized literature.

During the war Chukhchin was skipper of a trawler. On a number of ships he made many voyages to the United States to take on supplies for the Soviet Union from the Allies. In 1942 the supply ship *Stary Bolshevik* (Old Bolshevik) which Chukhchin commanded was hit by a bomb in the North Atlantic and caught fire. The ship fell behind the convoy. The situation appeared hopeless. But they put the fire out and caught up with the convoy. The British



He may be retired, but he is not in mothballs. Captain Chukhchin is on the accident inquiry commission and the retired captain's council.

escort saluted with "Good for *Stary Bolshevik.*"

After the war Chukhchin began sailing on icebreakers. He was captain of the famous *Yermak,* the first big icebreaker in the world, built in 1898. Afterward, until he retired, he plowed through the ice on the no less famous *Krasin,* the ship that saved the Nobile expedition in 1928. Chukhchin made his last voyage in 1962. He showed me an album of photographs, a record of five years of his life, which the crew of the *Krasin* presented to their captain at the end of the voyage. The TV studio in Murmansk made a film about him called *The Captain Leaves the Bridge,* which was also shown in Kherson.

Despite his larger-than-life biography, Chukhchin is not at all the picture of a "sea dog" we get from books and films. He has none of the stereotyped attributes. He does not smoke or drink, for one thing. He does not wear a beard, nor does he have a stentorian voice. Despite this he was one of the best captains in the merchant fleet. He was not only respected as a captain, but liked as a man for his kindliness, compassion and even temper. Here in Kherson he is also a person to whom people are attracted and for whom his house is always open.

Chukhchin has reared not only his own children—his son is a hydrobiologist and his daughter an engineer—but also a large number of seamen who owe him their character traits as well as their knowledge. He is experienced in taking ships through ice floes and in human relationships, the reason he is an invaluable member of organizations like the Commission on Accident Investigation at the Kherson port and the Council of Retired Captains. Kherson port holds him in high regard. There is practically nothing Chukhchin does not know about fleets and the sea. He has a wide acquaintanceship among seamen. The port workers turn to him first when there is serious trouble.

I asked the captain whether he does not find life on land dull after such a very different life of sailing the Arctic seas from June to November every year for almost half a century. No, he said, he has had quite enough of the sea. Besides, he had planned to move south even before the war. Since his retirement he has had two pressing invitations from Murmansk to captain a vessel for at least one navigation season. He has refused both, feeling he has to put an end to his career at some point.

Dmitri Chukhchin has already grown used to land living. His life is filled with the past and the present, friends old and new, his children, granddaughter, garden and the world around him. And he has remained the same kind of person he always was—one more accustomed to giving than to taking.

FAME CAME LATE TO
NIKO PIROS



The artist loved his Georgian soil, its colors and texture. Pirosmanishvili's landscapes are full of nostalgia for his native mountains, valleys and rivers. His tones are carefully subdued. Bolder, sharper colors would distract from his purpose — to picture the people and animal who live in that marvelously fresh world he created.

MANI

BY KONSTANTIN PAUSTOVSKY
Novelist



Kakhetian Epos



Bear on a Moonlit Night

FAME CAME LATE TO NIKO PIROSMANI



Feast of Three Princes

Niko Pirosmanishvili (1862-1918) occupies a unique place in Georgian art. A self-taught painter, he created an original and highly individualistic style. This is an excerpt from Konstantin Paustovsky's novel Dash Down South.

THE KURA continued its muddy murmuring under the bridges, and the starry sky flushed faintly over Kakhetia, as if some one was holding a lighted match to the edge of a black, inverted crystal bowl. All was still, with only the donkeys in the sleepy yards near Metekha shifting and snorting and turning their warm, fluffy ears.

That wonderful time of the ordinary and familiar day was approaching, when for a few minutes everything becomes emptied of color. The sky, the ashy mountains, the blooming almond orchards all become gray and mysterious. Over all the shadowless, dust-sprinkled earth slowly floats the predawn silence in which you can hear the blood coursing through your stretching and sleep-weary body.

In this silence I have often thought at length about the artist who had created a grayish-black, miniature Caucasus. A Caucasus without shadow or sunlight, illumined by the light of the slowly seeping dawn. That Caucasus which appears only to drunks and vagrants trudging the gray sidewalks at this time of day. I thought of the artist Niko Pirosmanishvili, the destitute and great Pirosman.* But the first orange rays of sunlight on my face and the hoarse cries of venders dispelled these thoughts, and again the Tiflis day, wrapped in heavy blue sky and yellow dust, unfolded like a fiery narrative.

Occasionally, in the evening I would gaze at Pirosman's pictures in the light of a kerosene lamp held high. They troubled me. The old paints, the gray ash of dawn, the broken spines of the mountains, the primitive, at times seemingly printed, pictures of bloated princes awakened anxiety. A whole phantom world of priests, coffee laborers, timid paupers with dog-like eyes, kintos ** and janitors, donkeys and venders, feasting peasants and pitiful actresses from suburban theaters stood out from his oilcloths. Pirosman did most of his painting on black oilcloth and tin. Endlessly intriguing me was another whole world of wary beasts, listening intently to the sounds of the river and the night, beasts staring with most human eyes.

Pirosman was a plain Georgian, a railroad guard, peddler and tramp. He slept in the damp cellars of Nakhalovka and Avlabara, where he painted his wonderful pictures for a meal in a dukhan, a night's lodging, a bottle of cheap wine, to keep body and soul together on the hot streets of the city's outskirts.

A self-taught man, barely able to sign his pictures, he gave them, without visible effort, a perfection of line, a clear-cut, saturated composition and the most rigorous restraint in colors. His work revealed the fine reflections of Persian miniatures, a certain fabulous antiquity in the portrayal of some scenes—an antiquity reminiscent of the ascetic domes of Armenian churches, a childlike naïveté, strange to us Europeans. Pirosman knew well the colorfully sudden Tiflis nights, the weary dusty days, and the gray, snow peaks in the dry mist of dawn.

He painted without hesitation, applying spare and final strokes and lines, leaving the bare oilcloth for black. He painted as we might speak or drink, as a child cries or a ruddy-faced peddler laughs. Crowds of laborers and kintos watched him paint with surprising speed, and expressed their delight with wild cries and applause as portraits and Caucasian scenes were consummated on his oilcloth in half an hour.

I saw a portrait of him. Tall, calm, with a receding forehead and childlike eyes, he bore within him a bitterness, a lucid and mute sorrow for the life that he had given to his visionary and naïve dreams, and from which he had received only a

* Pirosmani or Pirosman (Russianized version), the abbreviated name of Pirosmanishvili.

** Kinto means peddler in Georgian.



Reindeer



Still Life

harrowing sense of wretchedness and fear.

In smoky dukhans reeking of wine fumes, he saw the humble despair of ambals * hoarse with fatigue, forsaken children, street musicians with hands trembling from hunger and drink, paupers with blue, sinewy necks, cigarette venders. He knew them all well—those whom life had condemned to dried tears, who polished the cobblestones of the Armenian bazaar and only rarely shed drunken tears over a bottle of Kakhetian wine, lamenting their mutilated and crushed souls.

He had no words for it. All this sorrow he expressed in the childlike simplicity of his seemingly unskilled lines, in the melancholy colors and the unbearable tension that filled some of his oils. And he was loved there in the dukhans, where five kopecks bought a meal of rotten beans.

Pirosman's life was blighted by a cruel and ruinous love—his love for the actress Margarita, a money-grubbing and coarse performer at a dusty, suburban park.

Love came like a curse, like fate, to bring this gentle man a new and bitter misery. And he bore this love unblemished, sad and beautiful through the smoke of dukhans and all the hapless vicissitudes of his life.

Such was Pirosman.

He was "discovered" some years after his death. Several young artists, who happened to go into a dukhan near a railroad station, saw his pictures on a dark wall and were struck by the force of this unknown artist. Pirosman became their obsession. They sought out his pictures in cellars and remote shops, bought them and attracted public attention to this wonderful and undeservedly forgotten artist of the people. They studied his work, finding new depths, facility and brilliant, sagacious composition. These enthusiasts, profoundly moved by Pirosman, reconstructed the sad and plaintive tale of his life from interrogating kintos and from talking to grocers.

Questioned about Pirosman's last days, his Georgian friends said:

"Where were you before, katso?* Now you're looking for every poster of his, but when Niko was alive, nobody looked for him, though he was slowly dying of hunger. They buried him in the backyard of a cemetery for two rubles. Don't look for his grave, katso, you'll never find it."

Such is the fate of most geniuses: To die in oblivion and then, years later, to rise up above the hustling life that is as muddy as the Kura River. To rise up in all the clarity, purity and sorrow of his creation to evoke in the hearts of men passionate joy and disquiet.

At times Pirosman smiles, but wearily. Then we see the colorful dresses of children under an indigo sky, as if thousands of autumn leaves and patches of sky and sunlight were being driven by a wind down sun-flooded streets. Then tooters with comically distended cheeks play on their grandfathers' horns and grapes are the dull black of a morning. Then, too, his Caucasus and his windblown Tiflis stand out in blazing whiteness, autumnal gilt, summer fires and the mysterious gleam of moonstones. After seeing these one realizes what a wealth of color lived in this sad master.

Pirosman painted many portraits, many festive scenes, many peasants and lords, doormen, donkeys, children, many dark women with penetrating eyes, many taciturn highlanders and rebels. For this reason his oils reflect all of Georgia and all of the beautiful-as-amber Tiflis, the second homeland of all those who have lived in it for at least a little while.

Through the phantom sadness of Pirosman's oils, shines the captivating life of Transcaucasia, the doorway to legendary lands, as monotoned as the roar of mountain streams and as colorful as the costumes of Kurd women.

Pirosman's animals are remarkable. I recall the strange feeling I had on first seeing his *Giraffe*. It was late evening, silence reigned in the empty house, and a cloudy moon hung over the dead hill of David. I looked at the painting, and I was transfixed by the wild, moist and comprehending stare of a tall, yellow beast. It was slowly curving its neck, as if expecting to hear a cry in the empty rooms that would send it off in inexplicable fear into the hazy blue night.

* Ambal—a porter who carries heavy weights.

* Katso—man.



rape Harvest Feast



A Fisherman

BORIS SPASSKY:

TWO-TIME BIDDER FOR WORLD CHESS CROWN

By Yevgeni Bebchuk
Master of Sport



I FLEW INTO SUKHUMI the day the whole thing was over: Boris Spassky had won with a couple of rounds still to go.

Needless to say, when I finally found Yefim Geller down at the beach in the late afternoon, he didn't look very happy. I hesitated for quite a while before I went over to him. We were good friends, having played together for several years on the Soviet Armed Forces chess team. The Odessa grandmaster has been the team leader for a good many years.

We smoked our cigarettes and looked out at the sea, turning dark after sunset. The silence was broken by the third member of our group. As though hearing the question I hadn't asked, Ukrainian Master Yuri Sakharov, who groomed Geller for the match with Spassky, replied thoughtfully:

"So you wonder why the match ended so quickly. You can take my word for it, we lost Boris before the match began. We lost in the food store."

"What do you mean?"

"Just what I said: the food store. You know that Yefim has to be worked up to a fighting mood before getting down to a match. Well, we were resting in Sochi, where I did my best to get him to work up that fighting spirit. But one day we went into that food store to buy something for supper, when somebody grabbed us both round the shoulders. We turned around and there was Spassky, smiling and cheerful. 'You boys going back to the hotel?' he asked. 'Let's take a walk, it's a lovely evening!'

"I could almost see our Geller melting away; all of my effort to work up a fighting spirit wasted."

I told Boris this story after his match with Bent Larsen. He burst out laughing: "Yes, I remember that meeting, but I had no ulterior motive at all, honestly!" Turning serious, he added: "I simply believe and always will that heart-to-heart relations come first. Winning points should have nothing to do with it."

He has always been that way. Fifteen years ago, at a junior tournament, I remember Boris flatly refusing to congratulate his teammate for a victory. It turned out that this chap, finding himself in a tight position, played a mean trick. He wrote down the same move twice, and pushed the sheet of paper over to the other side of the table. His opponent was having time trouble and fooled by those two written moves, thought that the crucial moment had passed. He pondered over his reply and the flag went down before he made that control move.

"No matter how important that win was for our team victory, it wasn't fair," Spassky, a young master at the time, told the trainer of Leningrad juniors, Vladimir Zak.

Even then he felt that the respect due an opponent came first. Boris showed the utmost courtesy and tact to challengers of any age and class. Credit for that goes to Honored Trainer of the USSR Vladimir Zak, his mentor at the Leningrad Pioneer Club where he began playing at the age of nine. A little more than two years later young Spassky, with the rating of a first-category chess player, made the city junior team. Another two-year cycle of intensive training and millions of chess fans heard of a new 14-year-old master candidate. Boris played a great amount of chess willingly, and the experts were amazed at his style on the chessboard, most unusual for a player of schoolboy age. It was not an impulsive combination-type style, but restrained, and, at times, prudently cool, stripped of all surplus emotion and ornament.

Boris' next coach was Grandmaster Alexander Tolush, a first-rate tactician, who tried to put life into his young charge's game. As he put it, "to make the pieces dance on the board."

The gifted player made rapid progress,

and in 1953 he participated in a big international tournament in Bucharest. In the first round this sensational 16-year-old student defeated the aspirant to the world throne, Vasili Smyslov. Later came a dazzling win in a bewildering King's Indian Defense against Hungarian Grandmaster Laszlo Szabo, and the final scorecard showed that he tied with grandmasters for third place and the title of International Master.

Spassky's openings now included a very sharp King's Gambit and puzzling positions of the Janisch Variant in the Ruy Lopez, as well as the complicated systems of the King's Indian and Sicilian Defenses. With his youth, energy and talent his game flourished apace. Judge for yourself: In 1955 he tied Mikhail Botvinnik and Tigran Petrosyan for third place in the national championships, captured the world junior crown shortly thereafter, and a month later, won the coveted International Grandmaster title at the Interzonal Tournament in Goteborg.

The world realized that a new brilliant star had appeared on the chess horizon, that Spassky was steadily ascending the rungs to the world throne.

His third place in the Amsterdam Challengers' Round should have confirmed these radiant forecasts, but it did not turn out that way. No, there were no disastrous setbacks. Spassky moved ahead with ease and elegance to the Soviet Championship Finals, stayed up front for a long time and . . . failed to reach the interzonal stage. This was in 1958, when he lost in the very last round of a national title play to a friend of his own age, Mikhail Tahl. It happened again three years later when, in the course of 17 rounds in the USSR title tournament, he alternately held first and second places, only to earn big goose eggs in the last two rounds, in games with Victor Korchnoi and Leonid Stein.

Boris will remember that game with Stein for a long time. The national press insisted that Spassky, not Stein, be allowed to continue fighting for the world title, claiming that although something had gone wrong with him, he was still the stronger of the two.

The "unlucky" player's new tutor at the time, Grandmaster Igor Bondarevsky, raised strong objection.

"You've got to understand that Boris must prove to himself what he is really capable of doing. He, himself, has to believe in his ability to win."

Everyone now remembers how Boris shared first place with two other contenders in the national championships, how he later became the sole titleholder, and how he went on to win in international tournaments in Britain, Cuba, the United States and Yugoslavia.

And then came that match with world sovereign Tigran Petrosyan. Boris lost, but not like he did in the early sixties. True, he made a bad start: his game was erratic, while his opponent was in top form. Suddenly, a new Spassky emerged. He showed everyone that he had pluck and the will to win. Although he did not completely make up for lost ground, the fans and experts already saw a different man—concentrated, smiling and optimistic. . . .

Soon after his triumph over Bent Larsen, we went over to Spassky's apartment.

"What did you find toughest in your match with the Dane?" we asked him. "Were you bothered by his statements to the press that he would beat you?"

"Not at all. I even like to read such statements to figure out what's behind them. But Bent is a very decent, open-hearted chap. He really believed in his lucky star, and that's why he talked that way. He wasn't boasting at all."

"Before he took you on in the elimination match, Korchnoi said that you play better than Tahl and, perhaps, better than he did too. Yet he'd find it easier facing you than Tahl."

"I suppose that's true if he says so. After all, he and I received our initial chess training from Vladimir Zak at the Leningrad Pioneer Club. We know each other well, and we played together on the same team so long. . . . Hard to say, when you know your partner too well, you find that it's easy and difficult at the same time."

And so, ahead of Spassky is his clash with Tigran Petrosyan in another bid for the latter's world laurels. And behind Boris are victories over such world-famous ace players as Yefim Geller, Bent Larsen and Victor Korchnoi. The coming tilt with Petrosyan will be stubborn, and I, for one, believe Spassky will win.

Here is Spassky's favorite game with his own analysis to give you an idea of both his chess and literary styles.

CARO-KANN DEFENSE

White—B. Spassky Black—A. Reshko

1. P-K4 P-QB3

The Caro-Kann Defense is quite popular now, but it is usually employed by passive-minded players. The main idea of this system is that Black temporarily declines a Pawn battle in the middle and strives, instead, as quickly as possible, to finish deploying his forces, especially the Queen's Bishop, before the King's Pawn move, P-K3. Only after this does he launch vigorous operations in the center. The result is that Black's position is solid, even though passive. The weakness of this system is that it offers White much too wide a choice of possible patterns of development, which provides not only chess, but also psychological, trumps.

2. Kt-QB3 P-Q4
3. Kt-KB3 B-KKt5
4. P-KR 3 BxKt
5. QxB Kt-KB3

Despite its seeming simplicity, this position is very interesting. Black has exchanged his Queen's Bishop for a strong Knight on KB6, believing, and rightly so, that the presence of both White Bishops in a position of a closed nature, is of no essential importance. Following 6. . . .P-K3, Black intends to put his pieces in a more convenient position with moves of Kt(QKt)-Q2 and B-K2.

6. P-K5

By replying here, with 6. P-Q4, White could have made his Bishops more active, having in mind a sacrifice of his Queen's Pawn in the event of 6. . . .PxP; 7. KtxP. However, I selected another scheme, and endeavored first of all to prevent a convenient deployment of the rival forces.

6. . . . Kt (KB)-Q-2
7. Q-KKt3

A reply of 7. P-K6 would yield nothing, because of 7. . . . PxP, with Black being able, and to his advantage, to effect a Pawn advance, P-K4.

7. P-QKt4 P-K3
8. B-K2 Q-QB2

This is a stereotyped reply, after which Black begins to have difficulties in developing his pieces on the Queen's Wing. A stronger reply would be a natural 8. . . P-QB4, to which I intended to respond with 9. P-KB4, Kt-QB3; 10. P-QKt3 with an interesting game following such a continuation.

9. P-KB4 P-QR3

The consequences of a poor eighth move. The reply to an immediate 9. . . . P-QB4 will, of course, be 10. Kt-QKt5.

10. . . . P-QKt4

This is the start of a distracting demonstration on the Queen's Wing. White is ready for a sacrifice in an effort to get his scheme working.

10. . . . P-QB4

The following Pawn sacrifice deserves attention: 10. . . . BxP; 11. QxP, R-KB1; 12. QxP, P-QB4, with a subsequent Kt-QB3 and castling to the Queen's Wing.

11. P-QKt5 P-QB5

This frees the QB4 square for pieces on the Queen's Wing.

12. R-QKtl P-Q5
13. Kt-K4 PxP

And so, Black has won a Pawn, but at the same time, White has noticeably activated his own pieces.

14. 0-0

Naturally, 14. RxP is impossible in view of 14. . . . Q-QB3. And, in general, White's plan is not winning back sacrificed material, but most acutely mobilizing his forces for a decisive offensive on the entire front.

It is of interest to note that the White Rook on QKtl, while not making more than one move, has, nevertheless, played a vital part in the further course of struggle.

14. . . . RxP

Black captures a second Pawn, and later a third, but slows up still more in his own deployment. I believe it more sensible to to have replied with 14. . . . Kt-QB3 with my planned response of 15. P-Q3 providing a sharp game.

15. P-Q3 RxP
16. B-Q1 R-QR7

It is strange that Reshko still does not sense danger, otherwise he would have tried at this point to give his pieces more vigor by sacrificing the exchange through 16. . . . PxP. For instance, 17. BxR, PxB; 18. RxP, Q-QB3, 19. Q-Q3, Kt-QB4; 20. KtxKt, BxKt, with Black, despite the inevitable loss of the Pawn on QB7, having two Pawns for the sacrifice of exchange. Besides, he would be able to complete his deployment. As regards White, he evidently could have made a better reply, 18. R-QKt2, and not hasten to force events. In this case, a complicated situation would shape up, where, in my opinion, his chances would be preferable.

What are the results of White's demonstration on the Queen's Wing? It will suffice to compare the first and second diagrams. White's army is now fully mobilized and ready, at the first signal, to rush into attack, whereas Black has not had time to carry out his deployment to the end. Despite the material advantage Black enjoys, his position is most unreliable.

With his next move, White shows that the distracting operations on the Queen's Wing are over, and that the center of battle swings over to the opposite flank, where the Black King is the target of a direct attack.

17. P-KB5 KtxP

Black is unable to repel the onslaught of half a dozen White pieces plus a pair of Pawns. Here is where other continuations would lead: 17. . . . QxP; 18. P(KB)xP, QxP; 19. R-K1, with a winning attack following this; 17. . . . P(K)xP; 18. R(KB)xP with decisive threats of R(KB)xP, Kt-Q6ch, P-K6.

18. P(KB)xP P-KB3

No great hopes are promised by 18. . . . P(KB)xP, because of 19. B-KB4, Kt(QKt)-Q2; 20. RxP, R-QR4; 21. PxP, with Black being unable to beat off the threats of 22. B-KKt4 or 22. Kt-KKt5.

19. RxP(KB)!

This Rook sacrifice smashes the Black King's cover, and White launches an assault on the enemy's last strongpoint, the K4 square. The White Rook has to be removed, otherwise the fight will be over at once following 20. R-KB7.

19. . . . PxR 21. Kt-Q5 Q-Q3
20. KtxPch K-Q1

Should the reply be 21. . . . Q-KKt2, then the continuation would be 22. P-K7ch, K-Q2; 23. B-KKt4ch, K-K1; 24. B-KR5ch, etc.

22. B-KKt5ch K-QB1

It is impossible to reply with 22. . . . K-K1, because of 23. B-KR5ch, K-Kt-KKt3; 24. Kt-QB7ch.

23. B-KKt4!

The idea of the Rook sacrifice is in this move. The threat now of 24. P-K7ch is mortal. Here are possible variants: 23. . . . B-KKt2; 24. Kt-K7ch, K-QB2; 25. Kt-KB5, QxP; 26. KtxB, Q-Q4; 27. B-KB6, followed by 28. Kt-K6ch and 29. BxKt; 23. . . . Kt(QKt)-Q2; 24. PxKtch, KtxP; 25. R-K1, P-QKt3 (or 25. . . . R-QR8; 26. B-KB4, Q-QR3; 27. Kt-QKt6ch, QxKt; 28. RxR, K-Q1; 29. B-KKt5ch with White going on to win); 26. Q-KB3, B-KKt2; 27. Q-KB7; 23. . . . QxKt; 24. P-K7ch, K-QB2; 25. P-K8 (Queen) etc.

23. . . . KtxB 24. P-K7

This is the only, but sufficient, move for a victory.

24. . . . BxP

Stiffer resistance could arise from 24. . . . RxPch; 25. QxR, B-KKt2; 26. QxKt, Kt-Q2. But in this case, too, White, continuing with 27. RxP, should win, in view of the threat of 28. Kt-QKt6ch.

25. QxKtch Kt-Q2 28. Q-KKt7 K-QKt3
26. KtxBch K-QB2 29. BxKt Q-K3
27. B-KB4 Kt-K4 30. BxPch

Black resigns.



These figures, The Pledge, *stand on the site of the first concentration camp the Nazis erected on Soviet soil, in Salaspils, Latvia.*

Photographs by Yan Tikhonov

THE EARTH GROANS BEYOND THIS WALL

By Irina Kalitenko



The day the memorial was unveiled, on October 31, 1967. The concrete "guillotine" walls off the world of the living from the dead.

HERE THE UNVANQUISHED FOLLOWED THE ROAD
TO DEATH. THE BULLET BROKE OFF
MANY WORDS UNSAID AND YEARS UNLIVED.

INSCRIPTION ON THE MONUMENT IN SALASPILS

IN OCTOBER 1941 the Nazis brought a group of Soviet prisoners of war to a spot in Latvia which had once been a military proving ground. This barren swamp became the "death factory" of Salaspils. A few months later it held tens of thousands of prisoners from the Soviet Union, Austria, Czechoslovakia, Poland, France, the Netherlands, Belgium, Germany and other countries.

People gather from all parts of the country to pay the tribute of memory to the 100,000 men, women and children who were tortured to death at Salaspils. Three years ago an open contest was announced for a memorial to the prisoners of the death camp. There were 150 designs submitted, and the prizewinners were Latvian sculptors Jan Zarin, Lev Bukovsky and Oleg Skorainis. The first two are well known and have won republican and national prizes previously. Zarin, for instance, has 13 monuments standing on Latvia's territory, and his works are in the collections of the country's leading museums. The third prizewinner, Oleg Skorainis, is a young man, and his participation on the memorial was his professional debut. Although this was the first joint effort by the three sculptors, the ensemble has an extraordinary unity of thought and form. It was unveiled last October.

At the entrance to Salaspils is a huge stone wall which bears the inscription: "The Earth Groans Beyond This Wall." Past the wall, a symbol of the separation of life



The figures seem to grow out of the very ground the death factory stood on. This is The Unvanquished, *a man exerting a last impossible effort to rise and show his executioners that he remains unbeaten.*



A continuous pilgrimage to pay tribute to the 100,000 men, women and children from the Soviet Union, Austria, France, Belgium, the Netherlands and other countries the Nazis murdered at Salaspils.



from death, one stands facing the sculptural ensemble.

The impression conveyed is that the earth itself raised these figures from its bowels. The figures seem to have grown out of the ground the camp barracks stood on.

On the site of the women's barracks is "The Humiliated." Where the children's barracks stood is a group entitled "Mother with Children"—a strong and angry mother shielding children with her body.

On the other side of the field, where heather is planted, rises the "The Unvanquished"—a man exerting his last, impossible effort to rise from the ground and show his executioners that, though murdered, in spirit he remains unvanquished.

The ensemble is consummated with "The Pledge"—three people of different nationalities standing side by side to symbolize the unity of peoples in the struggle against the nazi executioners. All the figures are made of concrete and are 53 feet high.

Encircling the ensemble is "The Road of Suffering," along which tens of thousands of people walked to their deaths: young people with hopes for a future, those who had lived out their days, children who were not destined to live beyond their childhood. They, like the 20 million Soviet citizens who died at the fronts, belong to the ages.

In memory of them all, a metronome stands on the site, evenly striking out the rhythm of a beating heart.

SCHOOL LUNCH



IN '43

By Vasili Aksyonov

Vasili Aksyonov, 37, graduated from the Medical Institute in Leningrad and worked as a doctor for four years. His first short stories were published in *Yunost* (*Youth*) magazine in 1959. A year later the same magazine published his novel *Colleagues*, a great success. Since then Aksyonov has written the novels *Ticket to the Stars*, *Oranges from Morocco*, *It's Time, My Friend*, *It's Time* and the satiric *Overstocked Barrels*, as well as a number of short stories.

OH, YES, there is such a theory, or hypothesis, I should say. It is assumed that the movements of Mars' satellites Phobos and Deimos are somewhat arrested by that planet's atmosphere. Consequently they must be hollow inside, don't you see? And we know that hollow bodies can be created only . . . eh, how?"

"Only, only . . ." babbled the first lady like a schoolgirl.

"Only artificially."

"But of course!" cried the cleverer second lady.

"Yes, artificially. And that means they were created by intelligent creatures."

I regarded the man who was recounting this fascinating tale and wondered where I had seen him before. He was sitting opposite me in the sleeper compartment, swinging an elegantly crossed leg. He wore a blue well-tailored but unpretentious suit, an immaculately white shirt and a tie to match. Everything about him indicated that he was certainly not letting himself run to seed, that he was not so old, for that matter, no more than 35. A slight puffiness of the cheeks gave his face a benevolent and pleasant expression. These weren't the things that gave me the feeling I had met him before. It was only his strangely familiar way of contorting his lips and the distant but familiar intonations of his speech that made me scrutinize him more closely.

"The latest finds in the Sahara and Mesopotamia allow us to presume that in times long past the Earth was visited by creatures from outer space."

"Maybe they were the Martians?" gasped the ladies in unison.

"Perhaps. Who knows?" he said with a smile. "Who knows but that we are the direct descendants of the Martians," he concluded gaily, and having plunged the ladies into confusion, he picked up his newspapers.

He had a thick stack of them, with different mastheads, and was reading them one after the other. After finishing one, he would place it on the little table and press it down with his elbow.

Outside, bronze pines and young copses sped past, with bright sunny glades flashing by in between. The forest was warm and serene. I visualized myself walking through it, pushing the branches aside and winding my way through the ferns, imperceptible cobwebs settling on my face—and issuing onto a hot glade, where squirrels regarded me from all sides, bringing pleasant indolent thoughts to mind.

For some reason all this most decisively contradicted what it was that bound me to this man hidden behind his newspaper.

"May I see your paper for a moment?" I asked, pulling lightly at the sheet. He gave a start and peered over it. That was when I recognized him.

We had been in the same class at school during the war, in an overcrowded Volga town all covered with yellow dirty ice. He had been left back for three years, and I had caught up with him in the fourth grade in 1943. I had been a weakling, clad in padded coat, huge top boots and dark blue pants, a donation from the Americans. The pants were stiff, of denim, but by that time they were almost threadbare, with two round patches of a different cloth on the seat. Still, I was proud of those pants. Nobody was ashamed of patches in those days. I was also proud of a trophy fountain pen my sister had sent me from the army. But my pride in it was short-lived, because He took it away from me. He took away everything of any interest to him. And not only from me, but from the whole class. He had two pals—the humpbacked Leka and the skinny, pallid, hot-eyed Cossack. Evenings they sold cigarettes in front of the Electro Motion Picture Palace to wounded men and inordinately husky women. I was friends with Abka Ziperson, and we often went to the movies together, climbing through a coal hole and sitting up in the balcony, near the projection room. Those were the days of George of the Dinkie Jazz, and Antosha Rybkin, and the ludicrous Hitler who always landed in the soup—all you had to do was flick him on the head between his horns and he was finished. The real Hitler was not at all like that—we knew—and sitting in the darkness next to the projection room, we thought up all kinds of tortures for the real one. Put him in a cage and wheel him through the towns so that people could spit and throw cigarette butts at him. No, better to dip him in molten lead. In China they had a swell torture called "A Thousand Pieces."

When we got out of the movies, we always saw them hopping to keep warm and yelling:

"Hey, you rolling stones, buy our cigarettes!"

Abka and I tried to bypass them and keep in the shadows, but they never noticed us anyway. At night they never recognized us, as though we were not in the same class, as though they did not make us give them our school lunches every single day.

At school we were given lunches of sticky rye buns. The monitor would carry them upstairs on a large plate, and we would stand on the upper landing watching that wonderful dish floating up from the school's cold bowels.

"This is interesting news, isn't it?" I asked him, pointing out the place in the newspaper where the interesting item was featured.

He glanced at it, smiled, and commenced to tell me about the event in detail. I nodded and looked out of the window. I just could not bear those blue eyes because they had contemplated me expectantly every day from behind the corner of the school.

"Hand it over," He would say, and I would give Him my bun with my finger dents still fresh on it.

"Hand it over," He would say to the next boy, and Leka and Cossack would be in attendance next to Him.

I would go home and wait for my baby sister. Then we would both wait for our aunt. Auntie would return from the market with a loaf of bread and potatoes. Sometimes she came empty-handed. Auntie fought for me and my baby sister with submissive but practiced fury. Every morning as I got ready to go to school, I saw her passing under the windows, broad-shouldered and squat, with a stub nose and thin compressed lips.

One day she said:

"Nina brings home her lunches, and you don't. Rustam brings his lunch home, and so do all the other kids in the yard, but you eat yours all up at school."

I went out and sat down on a broken iron bed near the terrace. Several rooks were hovering in the gray darkening sky over the linden trees. Girls in military uniform were walking past our fence. What did rooks feed on? Insects? Worms? The air? Things were fine for them. But maybe somebody took everything away from them too? The weathercock on our roof creaked sharply. Some dive bombers were flying low over the town. What was going to happen to me? Auntie had been washing clothes all night long. Behind the screen the water streamed, splashed and gurgled. The pools grew darker, the waterfalls thundered, and Hitler in funny striped shorts was puffing and snorting in the soapy water. Auntie was kneading him with her knobby hands.

The next day was an eventful one. Our buns were smeared with a thin layer of lard sprinkled over with egg powder. I tore a sheet out of my copybook, wrapped the bun in it and put it in my bag. Behind the corner, all tremulous with valor, I grabbed Him by a button and struck Him. Abka Ziperson did the same, and some of the other boys followed suit. A few moments later I was lying in the snow with Cossack on top of me and Leka stuffing my lunch into my mouth.

"Come on, now, bite it!"

"That's exactly what happened," he was saying. "I know, because a close friend of mine had something to do with it. The newspapers give just the bare facts—they sometimes slip over the details, naturally."

"I see," I said, and thanked him. "It's very good of you."

The ladies were meanwhile chatting pleasantly. They treated each other to cherries, saying that those were not cherries at all—you could only find the real thing in the South. Suddenly they discovered that they were both from Lvov, and, my God, it looked like they had even lived on the same street and gone to the same school! There were so many coincidences that the ladies finally merged into a single enormous whole.

The next day, as soon as school was over, I stuffed my notebooks in the bag and turned around to look at the last rows. Cossack, Leka and He were sitting together at the same desk and leering at me. My face must have told them I would fight for my lunch again. They got up and left. I sat on at my desk for a long time, waiting for everyone to leave. I did not want to draw Abka and the other boys into this senseless affair again. When everyone had gone, I checked my slingshot and poured several stones from the bag into my pocket. If they were behind the corner again, I would let them have three charges and get each of them in the mug. Then, like Antosha Rybkin, I would grab one of them by the foot in a judo grip —maybe Leka or Cossack, but Him best of all, and fling Him down on his back. Then let come what may. Let them beat the hell out of me, but I would do the same thing the next day.

Slowly I descended the stairs, fingering the stones in my pocket. Somebody jumped me from above, and He was there in front of me. Somebody else pulled me by the boots. I heard a light contemptuous laugh. They worked fast. They pulled off my boots and unbound

the rags on my feet. Then they hung all those stinky rags on the banister and ran downstairs.

"Here's your boots, bravie!" He shouted, and my boots somersaulted up into the air. Guffawing merrily, the gang left. They had forgotten to take my lunch along.

"Will you have dinner with me in the dining car?" I suggested.

He put his newspaper aside and smiled.

"I was just about to invite you to have dinner with me," he said. "You beat me to it. Please let me treat you to dinner."

"Oh, no," I cried in great agitation. "As we used to say when we were boys, 'I'm leading.' Remember?"

"Oh, yes," he said, looking at me curiously.

I had cried. I had gathered my foot rags and bawled. I had felt so completely defeated it was a long time before I got over it. It was years before I could forget that light, contemptuous laughter and the fingers that had pressed into my face. The bell rang, and there was a loud stamping of feet, and an avalanche of seniors rushed down past me with whoops and cries.

I walked out into the street, crossed it, climbed through a gap in the iron bars of a fence, and strolled down the path of an old neglected park toward whose farther end a crowd of seniors were running. I followed slowly. I wanted to see them play soccer.

There, near the summer reading room which had been pulled down halfway for firewood, were the playgrounds worn smooth by our school. Dividing into two groups, the seniors ran back and forth over it. Each attack was invincible, no matter which side it was directed at. It was swift and wild, with inevitable losses and victories for all. Waves of sweat rolled up and receded as I sat at the edge of the field, and big strong legs, *valenki,* boots rushed by me. As if wishing to assure me of their strength, they fought for their right to the ball still more furiously—those seniors.

Sinking up to the waist in the deep snow, I threw them the balls that flew out into the park.

I still wonder whether it was defeat or victory. Sometimes they—Cossack, Leka and He—stopped me and took my lunch away, and I did not resist; and sometimes, for some strange reason, they left me alone, and I carried my bun home, and in the evening we drank tea with slices of sticky rye paste.

We walked down the length of the cars, and I opened the doors to let him through first, and when he was in front, he opened the doors to let me through. I was lucky—it was I who opened the dining car door.

Somebody had found out that Abka Ziperson's mother was working in a hospital.

"Listen, Old-Woman-Who-Shuffles-Across-the-Street, why don't you bring us some glucose from your ma?" they demanded.

Abka refused for a while, but when they tore his schoolbag to shreds, he brought them a few ampules. They liked the glucose—it was sweet and nourishing. Ever since then they nicknamed Abka Glucose.

"Hey, Glucose!" they would call, "Come over here!"

I don't know what Abka suffered from most—the fact that he had to steal, or that he was given such a silly name.

In any case, I once saw him fighting them. I joined in and we were both badly beaten. Each of the trio was stronger than anyone else in our class. They were three years our senior.

Of course we could have united and fought them together, but according to our school code you could only fight one person, and only till the blood began to flow. Our boyish logic would not permit us to strike anyone weaker, or for three to gang up on one, or for the whole class to strike three. That was the whole trouble—they fought for food, heedless of the code. And what was worse, it was not in defense. They were older.

"Why doesn't he recognize me?" I wondered.

The dining car was deserted, well-appointed and clean. The tables shone in their white starched cloths and only one of them, obviously vacated some time ago, still held the traces of a generous feast.

I did the ordering. Money was no object. I chose the best brandy. This was no time to skimp. It was just the moment to go all out. Too bad that I was restrained by the usual dining car menu of pickled soup, shashlyk and plum compote.

I spoke to him amiably about the change of seasons, and stared at his hands, at the little red hairs protruding from under his watch bracelet. Then I lifted my eyes and recalled still another interesting fact.

His heart was not on the left side but on the right. Later I learned that this phenomenon was called dextrocardia, that it was quite rare, and that only a handful of people were born that way.

Early in the school term, before they had begun to take our lunches, He had bet with us on it. Bet lunch.

"Let's bet my heart's on the other side," He would say, unbuttoning his shirt proudly.

When we found out about this peculiarity of His, He resorted to coercive blackmail.

"Will you bet?" He would ask, sitting down next to you and twisting your arm. "Will you bet?" And He would unbutton his shirt.

"Thump-thump, thump-thump," His heart beat calmly and measuredly on the right side.

The heavy shiny surface of the pickled soup was disturbed by the rhythmical rocking of the car. The amber drops of fat trembled, gathering around the little slices of sausage floating on the surface, and in the recesses of this broth lay all sorts of ingredients—slices of ham, pickles and pieces of chicken.

"This is excellent bread!" I said. "Remember the bread we used to eat during the war?"

"Ah, yes," he replied. "It wasn't so good, was it?"

I mustered up the strength to look him in the face.

"Remember our school lunches?"

"Yes," He said firmly, and I realized from his tone that he had as much stamina as before.

"Those sticky rye buns, remember?"

"Yes, yes," he smiled. "They were pretty awful buns. . . ."

My legs trembled violently. No, not now. No, no. Let him eat his meal. I wanted to see him eat it. Let him finish and I'd pay.

"The lard and egg powder, remember?" I said, laughing lightly.

"The Second Front?" He smiled back.

"But we loved oil cakes best."

"Yes, it was a real treat," he laughed.

What the French do is pour out brandy, spit in it, and throw it in the face of people like him. Collaborationists.

"How about a drink?" I said, raising my glass.

"Your health," he replied.

The *shashlyk* was served.

Chewing the juicy, well-roasted meat, I said:

"Of course this isn't the Aragvi Restaurant in Moscow, but. . . ."

"It's not bad at all," he murmured, nodding as if he were listening to the flow of his inner juices. "The sauce isn't exactly *Tkemali,* but. . . ."

I nearly screamed: "You glutton! You lousy glutton! You know all about wine, and women too, I suppose. Are you still carrying my fountain pen in your vest pocket?"

Pulling myself together, I resumed our table patter in the given rhythm and the necessary tone.

"It's a surprising thing," I said, "but the concept of 'food' seems to have become more complex with the march of time. So many arguments are raging around that concept, so many nuances are contained in it. . . ."

"Ah, yes," he said readily. "And it's really a very simple concept, isn't it?"

"Yes, very simple indeed. Food. The simplest and most important thing for the human being."

"I think you are exaggerating a little," he smiled.

"No, really. Food and women are the most important things on earth," I went on with my naive mystification.

"For me there are things more important," he said seriously.

"What are they?"

"My work, for instance."

"Oh, that comes afterward."

"No, you don't get my meaning. . . ."

He began to develop his idea. I could see that he had not recognized me. I could see that he would never recognize me, just as he would never recognize anybody from our class, except Leka and Cossack. And I understood why he would not recognize any of us. For him we had not been separate entities; we had been the mass with which he had had to fuss a little from time to time.

"Oh, sure, how the hell can I get your meaning!" I suddenly shouted rudely, unable to contain myself. "Of course, for you food doesn't mean a damned thing! You're a direct descendant of the Martians, aren't you!"

He stopped to look at me out of narrowed eyes. His mouth worked.

"Look," He said quietly. "You can't spoil my appetite, see?"

I fell silent and went back to my *shashlyk.* The bottle of brandy was closer to me, and it was never too late to spit into it. Let him only eat his meal, and I'd pay!

Next to us sat a man in a cheap checkered shirt, but there was a gold watch on his wrist. His head hung low over his beer, and he was whispering to himself. He was very drunk. Suddenly he raised his head and shouted to us:

"Hey, you! The Black Sea, un-erstand? . . . Sevastopol, see? Torpedo boat."

He dropped his head, and a low rumble issued from the depths of his chest.

"Waiter!" he called, "Can you remove that man?" He pointed not to me, but to the drunkard. "To avoid any excesses on his part."

"Oh, let him be, said the waiter. "He's not bothering you, is he?"

"The Black Sea . . ." grumbled the man. "Torpedo boat, or maybe I'm exaggerating? . . ."

"Do you really think you are a descendant of the Martians?" I asked him.

"Why not? Who knows?" he said placidly.

"The Martians are nice guys," I said. "With them everything is normal—they've got arms and legs and hearts on the left side. But you. . . ."

"Now just a moment," he said. "I'm telling you, you can't spoil my appetite, so don't try. I can pay for this dinner myself, you know."

I changed the subject, and everything was smoothed out in a few moments. Our dinner proceeded in a brilliant stream of smiles and jokes. So this was what he was like now—a real brick. Cast-iron nerves.

"Look, we haven't even introduced ourselves yet," I exclaimed. I stood up and gave my name, holding out my hand. He also stood up and clasped my hand.

His name was different. It wasn't he at all! It was a completely different man.

The dessert was served.

QUERIES FROM READERS

QUESTION: Have you any science fiction fans? Do you publish American science fiction in Russian translations? (Mike Montgomery, Denver, Colorado)

ANSWER: Science fiction is extremely popular in our country. Scientific adventure stories by Soviet and foreign authors are published in editions that run into millions of copies. There are Russian translations of books, collections of stories and magazine stories by about two dozen American writers of science fiction, published in editions of 100,000 and more copies. The most popular American science fiction writers here are Ray Bradbury, Isaac Azimov, Anne Warren Griffiths, Clifford Simak, Henry Kattner and Robert Sheckley. More than one million copies of books by these authors alone have been printed.

QUESTION: I would like some information on the cost of funerals in the USSR. (L. A. Pouliot, Detroit, Michigan)

ANSWER: Funerals may cost from 30 rubles to 100 rubles, depending on how well-to-do the family is. This includes the price of the coffin (from 6 to 60 rubles), mourning articles (from 5 to 10 rubles) and payment for a cemetery plot (from 4 rubles 50 kopecks to 8 rubles). Cremation costs 5 rubles.

The above sum does not include fees for music by an orchestra or for religious rites.

QUESTION: Please set aside a spot in an issue on the icebreaker Lenin and her trips. Whatever happened to the icebreakers Krassin and Yermak? (Harry E. Black, Spokane, Washington)

ANSWER: The icebreaker *Lenin*, the first nuclear-powered surface vessel in the world, was built in Leningrad in 1959. It has a displacement of 16,000 tons, is 440 feet long, has a 90.5 foot beam and is powered by engines with a capacty of 44,000 horsepower, making it the most powerful icebreaker in the world. It has three atomic reactors: Two of them provide all the power required, while the third is held in reserve and is used only when one of the other two is switched off for repairs. Operating at full capacity, the ship's engines use up between five or six pounds of Uranium-235 in 100 days. Steam engines of similar power operating at full capacity for 100 days would require 27,500 tons of black oil.

The ship provides excellent working and living conditions for its crew and staff of researchers.

Between 1960 and 1965 the *Lenin* covered more than 85,000 miles during the Arctic navigation season, of which nearly 65,000 were through ice. It lead about 500 vessels along the most difficult routes.

The icebreaker *Krassin* was built in Britain in 1916. It has a displacement of 10,800 tons, is 323 feet long and has a 71-foot beam. Up until 1927 it was called the *Svyatogor* and then was renamed in honor of Communist leader Leonid Krassin. In 1928 the *Krassin* participated in the rescue of the Italian polar expedition under Nobile and took the group aboard. In the past few years this veteran of the Arctic has taken 850 ships along the Northern Sea Route from Murmansk to Vladivostock, traveling about 100,000 miles through ice.

The *Yermak* is the oldest icebreaker in the Soviet Arctic fleet. It is 320 feet long, has a 71-foot beam, a displacement of 8,730 tons and a 9,390 horsepower engine capacity. It was built in Britain in 1899 according to the idea and at the order of the Russian Admiral Stepan Makarov. It was the first icebreaker in the world capable of moving actively in thick ice and getting seagoing vessels through it. In 1900 Alexander Popov, pioneer in radio, sent the first radiogram in the world to the *Yermak*, reporting that there were fishermen on an ice floe carried out to sea. The *Yermak* located and rescued them.

The successful principles and design of the *Yermak* were later incorporated in other icebreakers. In 1918 the *Yermak* took vessels of the revolutionary Baltic Fleet from Revel (Tallinn) and Helsingfors (Helsinki) to Kronstadt. Since 1934 it has annually taken ships through the Kara Sea and the Laptev Sea. In 1938 it helped to remove the Ivan Papanin polar expedition from an ice floe off the eastern coast of Greenland. The *Yermak* was decorated with the Order of Lenin in 1949, on its fiftieth anniversary. In 1964, after 65 years of service, it was laid up for good in the Murmansk roadstead.

QUESTION: I would like to know the history of the Ukrainian bandura and its popularity in the Ukraine. (Wasyll Gina, New Haven, Connecticut)

ANSWER: The *bandura*, a Ukrainian pizzicato instrument, is first mentioned in sixteenth century literature. It has a broad, shallow, bowl-shaped body. At the neck the strings are not pressed down but are plucked to form a bass accompaniment to the many strings stretched along the right side of the sounding board which carry the melody.

Wandering musicians played the *bandura*, also known as the *kobza*, to accompany their singing. In the eighteenth century *bandura* playing was fashionable at the court in St. Petersburg.

Today the *bandura* is one of the main instruments in professional and amateur folk instrument groups in the Ukraine. It has been improved over the centuries, and there is now a type of *bandura* for symphony orchestra. Instruction in the *bandura* is given at a number of music schools in the Ukraine and at the Kiev Conservatory.

QUESTION: Can you give me some information about the great rivers of Siberia east of the Ural Mountains and their power capacity? (Murray Brookman, San Francisco, California)

ANSWER: The vast majority of Siberia's rivers rise in the Altai and Sayan mountains and the mountains east of Lake Baikal, all of which form a wide belt along the southern borders of Siberia. Most of the rivers flow from south to north, across the steppe, forest and tundra zones. Their upper reaches have the characteristics of all mountain rivers—deep valleys cut into rock, stony beds and many waterfalls.

As a rule Siberia's rivers empty more than 70 million cubic feet of water annually into the Arctic Ocean. The Ob, Yenisei and Lena rivers account for more than 70 per cent of the flow. The Ob basin covers most of the West Siberian depression. The right bank of the Yenisei basin is situated within the Central Siberian Plateau, from 1,640 to 2,300 feet above sea level. The tributaries of the Yenisei (the Angara, Podkamennaya Tunguska and Nizhnaya Tunguska) and most of the Lena tributaries have big falls, and in some places their valleys turn into gorges. This is particularly true of the basins of the Yana, Indigirka and Kolyma rivers, which flow for the most part through mountain regions east of the Lena.

Siberia's biggest river is the Lena, 2,695 miles long with a flow of almost 18 million cubic feet a year and potential power resources exceeding 144 billion kilowatt-hours. Although the Yenisei is shorter—2,389 miles—it has a greater flow—20 million cubic feet and potential power resources of 158 billion kilowatt-hours. The Ob, the shortest of the three (2,284 miles), has less hydropower resources (51 billion kilowatt-hours). The Angara, on which Bratsk Dam stands, is a comparatively short river (1,165 miles), but its power potential is 94 billion kilowatt-hours.

Another of our large rivers is the Amur, 1,755 miles long, with an annual flow of 12 million cubic feet and a potential of 85 billion kilowatt-hours. The Amur flows into the Pacific.

QUESTION: I would like more facts on civil aviation in the USSR. (C. P. Jessup, Bala-Cynwyd, Pennsylvania)

ANSWER: The civil air fleet plays a significant part in the country's economic life. Its planes perform more than 100 types of work in the national economy, scientific research, the medical services and other areas of the country's life. In 1968 Aeroflot planes will have carried about 62 million passengers and more than 1.5 million tons of freight. In 1970 the number of passengers is expected to reach 75 million. The Soviet Union has about 311,000 miles of domestic air services. Aeroflot has agreements on air transport with 54 countries.

Flying is also a popular sport. Our fliers hold 253 of the 650 world records registered by the International Aeronautical Federation. The records were set with Soviet-built supersonic jet planes, giant transport planes, helicopters and sports planes.

Our fliers captured first place at the Fourth World Aerobatics Championships.

QUESTION: I would like some information about libraries in the Soviet Union. (Gary Shearer, Kansas City, Kansas)

ANSWER: The Soviet Union has about 400,000 libraries with 110 million registered borrowers and a total of 2 billion books. There are both general and specialized libraries. For children there are 200,000 libraries at schools and 5,000 special children's libraries. The government allocates 100 million rubles annually to replenish the public libraries alone, purchasing up to 80-100 million books a year for them. No charge is made anywhere for the use of books or reading rooms at libraries. The public libraries have a staff of 500,000 librarians.

AROUND the COUNTRY



SEAGOING FACTORIES

The Soviet Union is one of the world's five biggest fishing nations with a fleet of 20,000 self-propelled fishing, processing, refrigerated, research and exploratory vessels. Some of the refrigerated trawlers are actually floating factories.

At the International Fishing Industry Exhibition held in Leningrad last summer, the Soviet section displayed the *Ieronim Uborevich* floating fish cannery built at the Admiralteisk Plant in Leningrad. The factory ship of 15,300 tons displacement, with two main engines of 4,000 horsepower, has a capacity of 20 tons of frozen fish and 13 tons of fish flour a day.

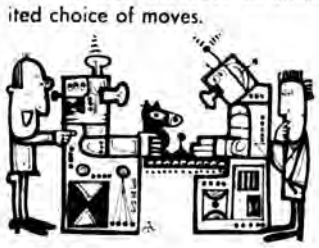
The *Ieronim Uborevich* will sail the middle latitudes of the Pacific for eight or nine months and, like an inhabited island, will service the vessels fishing in the area. The ship provides its crew of 520 with normal living and working conditions. Facilities include comfortable cabins, big messrooms and lounges, a dentist's office and an operating room, a library, laundry, barber shop, post office, delicatessen and Russian baths.

ACROSS THE OB

Another high-voltage transmission line will soon cross the deep Ob River in Siberia. Metallurgists have prepared two giant supports to be set up on both river banks. Thanks to the 616-foot height of the structures, the inevitable sagging of wires will not interfere with navigation in any way.

21ST CENTURY CHESS

Chess games played by electronic computers will be a 21st century sport," predicts Victor Glushkov, Vice President of the Ukrainian Academy of Sciences. But these matches will not be like the computer-run games of today in which the machines operate by a given program. Man will give the computer only ideas, and the machine itself will have an unlimited choice of moves.



NAPOLEON'S ABDICATION FOUND IN YEREVAN

A rough draft of the act of abdication signed by Napoleon in April 1814 has been found in the archives of an Armenian musicologist and collector, Vasili Korganov (1865-1934). It is written on ordinary paper that is faintly yellowed, but otherwise in good condition.

Preserved in the personal archives of Nicholas I, Emperor of Russia, it was later bought by Korganov, who had a rich collection of Goethe, Beethoven, Balzac and Pushkin manuscripts. The document is now in the National Museum of Literature and Art in Yerevan, with the rest of Korganov's papers.



TALKING TRAFFIC LIGHT

Pedestrians are finding it harder and harder to get across wide streets before the red flashes on. To assist them, the traffic authorities in Leningrad have hooked up a tape recorder to an ordinary three-color traffic light. It tells pedestrians when it is safe for them to cross.

DIAGNOSING DISEASE FROM DREAMS

Diseases can be diagnosed from dreams, says Dr. Vladimir Kasatkin of Leningrad.

There is nothing mystical about prophetic dreams. They coincide almost completely with the length of the incubation period of a disease.

"Illness" dreams, unlike ordinary dreams, are usually obsessive and of the same kind, colored by the patient's education and occupation.

If you don't dream, that may also be a "distress signal" sent by the nervous system. Fewer dreams than usual may mean a weakening of nervous processes or mental activity. Responsible, for example, may be higher intercranial pressure. Much research, including that of Soviet Academician Pyotr Anokhin, indicated the existence of "prophetic apparatus" in the human brain.



MILK WEEK

Moscow recently had a Milk Week, organized by the Ministry of the Meat and Milk Industry, the Trade Ministry and the newspaper *Vecherniaya Moskva*. Milk is the main ingredient of more than 500 dishes. Experts say every Muscovite should consume 529 pounds of milk products annually. Muscovites are fond of milk, and the actual consumption figure today is close to 440 pounds a year. New milk products were put on the market for residents of the capital during Milk Week. Scientists, doctors and chefs were available for consultation. Many more milk products appeared on the menus of cafés, lunch counters and restaurants.

CURATIVE PERFUMES

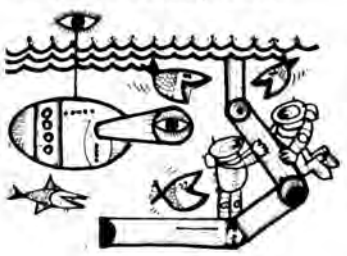
It won't be long before perfumes will be rated by quality, uniqueness and curative properties. The idea is based on phytoncides, unusual antibiotic substances contained in plants.

The cosmetics laboratory at the USSR Research Institute of Synthetic and Natural Perfumes has already worked out a method for synthesizing a vitamin from linseed oil. The vitamin has been incorporated in various creams and pastes.

Biologically active cosmetics cannot cure diseases, but they may have a certain prophylactic and tonic effect. The curative properties of the creams must not, of course, affect the fragrance in any way.

UNDERWATER TV

This TV camera can be used 98 feet below the surface to observe the condition of underwater structures or the installation of pipes. The Crab-2 will work even in muddy or polluted water, since it is equipped with an illumination system. The camera weighs 551 pounds. An experimental model has been successfully tested.



NEW RESCUE DEVICE

A simple and clever device has been invented that will enable a rescue vessel to collect and take aboard, in few minutes and under any weather conditions, hundreds of people scattered over a large area after a shipwreck. Alexei Marantsev and Pavel Nikolsky, two Leningrad engineers, are the creators of this device. The rescue work resembles laying an underwater telephone cable.

The rescue vessel approaches the sinking ship. There are people in the water, clinging to lifebelts and pieces of wood. A thick cable is released into the water from a winch at the stern of the rescue ship. With the help of special devices, long foam rubber floats are attached to the cable at intervals of 30 to 45 feet as it unwinds. The rescue ship is maneuvered in such a way that all those shipwrecked are within a closed oval formed by the cable. Two or three pneumatic rafts and a floating anchor are attached to the end of the rescue cable. The people then climb onto the rafts to wait until they can be taken aboard.



NEW TOWN

A new town, to be called Novy Togliatti, is going up not far from Togliatti, the city where the Volga auto plant is being built. The future town will be divided into districts for 20,000 to 25,000 residents, and those in turn into microdistricts for three to five thousand persons.

Since Novy Togliatti is being built in a forest, trees will be left standing for parks, squares and boulevards in the new town, and the bank of the Volga turned into recreation areas and sports grounds.

A big park, to be laid out near the Zhigulev reservoir, should become a Mecca for campers and hikers. A hotel with accommodations for almost 1,000 guests is now being built on the high shore of the reservoir. Apartment houses of five, nine, twelve and sixteen stories are under construction.

LIFE ON MARS

Conditions on Mars as scientists imagine them are being produced in a research chamber, the "Photostat," at the Institute of Cytology of the USSR Academy of Sciences.

Even when there is only 0.0005 per cent oxygen in the "Photostat" Colpoda mopasi infusoria continue to live and multiply. In the process of evolution the infusoria acquired the ability to dry up and stay alive. A dried-up infusorian (cyst) can stand large doses of ultraviolet radiation and a complete lack of oxygen and moisture. It will turn back into an infusorian even after immersion in liquid nitrogen (minus 125 degrees centigrade).



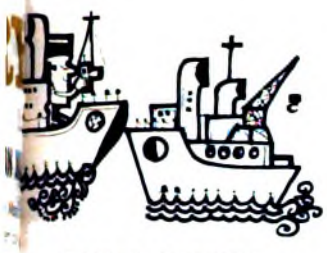
MOVIE-MAKING IN THE ARCTIC

Red Tent, the first movie to be filmed near the Arctic Circle, is an Italian-Soviet project with many well-known Soviet and Italian actors, such as Claudia Cardinale, in the cast. The picture was made in the North Arctic Ocean last summer by a group from the Mosfilm Studio. They traveled aboard the *Ob*, famous for its many Antarctic voyages, to the coast of Spitsbergen and Franz Josef Land.

The film describes the rescue by Soviet fliers and seamen forty years ago of the crew of the Italian expedition led by Umberto Nobile. The "role" of the icebreaker *Krasin*, which rescued the Italian polar explorers, is played by the icebreaker *Sibiryakov*.

NEW VEHICLE FOR GEOLOGISTS

A small, wingless car with a propeller, wheels and pontoons, designed for geologists working in forests, has been put together by a mechanic employed by a field expedition. The vehicle plows through snow, skims over water, crosses swamps and travels fast on dry land. Vladimir Tsvetkov, the mechanic who invented it, has successfully tested the vehicle in forest and cross-country conditions and has even used it as a tug to tow boats loaded with geological equipment up shallow, but practically impassable, forest rivers.



CAMERA JUDGES SHIP COLLISION

For two ships of different nations to collide at sea is an extraordinary event. It involves lengthy and expensive legal proceedings, usually in a neutral court of arbitration.

The Soviet tanker *Lukhovitsi* would have had to go through all that if not for a crew member with a camera. The tanker was proceeding down the Bosphorus in the daytime. Sailing conditions were good and every precaution had been taken.

The Greek ship *Avra* was sailing in the opposite direction. Suddenly the ship swerved and struck the *Lukhovitsi* in the side. A member of the tanker crew resting on deck took several consecutive shots of the strange maneuver of the *Avra* with a camera he had at hand. The photographs were indisputable evidence that the collision was the fault of the Greek ship and lost its owners any hope of even partial compensation.

Marine inspection now advises ship's captains to have cameras ready for action in crowded waters.

SCIENTIFIC COOPERATION

Seventy-eight international conferences, congresses and symposiums were held in the Soviet Union during 1968. About 6,000 scientists, from practically every country where scientific research is done, came to our country in the course of the year.



POSTAL CONVEYER

The Kazansky Railway-Station post office in Moscow is equipped with 15 letter-sorting machines, five semiautomatic installations for sorting packages and the latest in telecommunication devices. It sorts up to 3,600,000 letters, 500,000 packages, 100,000 wrappers and 6,000,000 newspapers and journals a day.

MAMMOTHS

Workers in Northern Siberia, digging at depths of 15 feet, found in the bottom of their dredge the ribs of a mammoth and great chunks of undecayed meat, covered with thick skin and fur. On almost the same day, a bulldozer in the southern part of Western Siberia brought up from an excavation of 6.6 feet or so an enormous jaw, also of a mammoth—an animal that lived at least 130,000 years ago.

It is no rarity to find parts of mammoth skeletons in Western Siberia. They were evidently the most widely distributed animals in that area of the world in prehistoric times.

HIS FRIEND THE WOLF

Berkut was two months old when hunter Dmitri Gulia, who lives in Khabarovsk Territory in the Soviet Far East, found him in the forest. The wolf is now almost two years old, and his owner still finds him easy to train. Berkut enjoys swimming and playing with children.



POPULAR BEVERAGE

Tea Days were arranged at a number of Moscow cafés and restaurants. They were organized by specialists from the Georgian Republic—chief tea producing republic in our country. They acquainted trade representatives and journalists with the various grades of tea and demonstrated numerous ways of preparing this popular beverage.

KUBAN COSSACKS BUILD A HOTEL

Six collective farms in the Kuban have built a holiday hotel on the shore of the Black Sea, at Dagomys, a resort 9.3 miles north of Sochi. Called Friendship House, the four-story hotel of concrete and glass can accommodate 138 people.

Friendship House is the thirty-sixth resort that the Cossack collective farmers of the Kuban have built for themselves. The sanatoriums and hotels can serve 1,500 persons at a time.

RUSSIAN FOR FOREIGNERS

Among the Americans who attended the International Russian Courses offered at the Polytechnic Institute of Leningrad last year, were four teachers of the Russian language, Russian history and international law.

The courses were started in 1967 through the initiative of the Sputnik Young Tourists' Bureau and have become very popular. Those who attended last year were young men and women from the United States, Denmark and Sweden.

The courses are organized on different levels, according to the students' varying abilities in the Russian language. This enables each one to get the most out of his four weeks of study. The program includes six hours a day of language study with highly qualified teachers, sightseeing in Leningrad and meetings with Leningrad writers, painters and composers. Certificates are issued to those who complete the courses.

NEW FINDING ON THE HEART

Soviet researchers have discovered one more fact which explains how the heart adjusts to a heavier load and what the reasons are for cardiac insufficiency. They observed that when the heart is overworked the increase in the size of the heart muscle is accompanied by a fourfold to sixfold reduction in the concentration of noradrenalin.

Noradrenalin "transmits orders" from the sympathetic section of the nervous system to the heart. With a reduction in the noradrenalin "reserves," comes a deterioration in heart control and the force of the heart's contractions and an increase in cardiac insufficiency.

Using this information, the researchers concluded that the "administrative links" of the body wear out before the executive links—the working organs—in this case the heart itself.

12-YEAR-OLD COLLEGE STUDENT

Kiev University in the Ukraine has a 12-year-old freshman, Sasha Dvorak, in its department of mechanics and mathematics. He is the son of a miner in the Donets coalfields. At the age of four Sasha knew how to extract square roots. It took him only a few months to finish a year's work in school and move on to the next grade. He graduated from high school with honors.

Another Kiev University freshman this year is Marina Burik, a 14-year-old Kiev girl, who is also studying mechanics and mathematics.

TO KEEP WIRES FROM DANCING

When electric wires become coated with ice and start swaying in a high wind, they are apt to break and cut off the supply of electricity to whole towns. To prevent the wires from "dancing" the Electric Power Research Institute has invented aerodynamic stabilizers. They do the job.

A GOLD BISON

No jeweler's hand touched this figure of a bison made of pure gold. Nature itself shaped it. This nugget is not the first of Nature's original productions. One in the shape of a five-pointed star was recently found, also at a gold field in the Soviet Far East. Gold nuggets in the form of snowflakes, leaves and flowers are often dug up.

A RARE MASTER

At 22 Nikolai Mitsenko is one of the best restorers of old musical instruments in the Soviet Union. He began his career seven years ago at the Central Music School in Moscow where he worked under Yevgeny Gorokhov, a well-known expert. Today Nikolai works at the Moscow Conservatory of Music, where many rare instruments have passed through his hands.



STONE AGE DRAWINGS

Drawings of dancing people and animals have been found on a rock face along the coast of the Caspian Sea, in the southern part of the Soviet Union. The drawings were found by submarine archeologists of the Azerbaijan Museum of History and are thought to have been elements in a primitive rite of magic for hunters, at the dawn of the Stone Age. Carved images and drawings of dancing figures are usually found hidden in inaccessible places. Sometimes drawings are superimposed on others.

This latest find may tell us more of the ancient history of the territory that is now Azerbaijan, show where the ancient international trade routes ran and help explain the mystery of the cities submerged along the Caspian coast.



EXPENSIVE RACE HORSES

A Kabardino-Balkarian horse named Zadruga was sold for $14,600 at the Fourth International Auction of Runners and Trotters in Moscow. It was attended by buyers from Finland, France, Canada, Switzerland, Denmark, Britain and other countries.

Zadruga was bought by Heinrich Plotke, a West German businessman. Redan, brother of the famous Anilin, the horse that twice won the European Cup, went to Swen Bengston, head of a well-known Swedish firm. An offer of $250,000 was made for Anilin after it won the cup. Bengston paid $7,600 for Redan. Altogether, 73 horses were sold. Some 250 horses have been auctioned off in Moscow in the past four years.

BRIDGE MADE OF GAS

You don't need a raft or a boat to cross this lake, although it's several meters deep. You can wade across it.

Researchers of the Institute of Volcanology working at the Karym volcano on Kamchatka discovered this. They established that the gas which gushes out constantly brings up sand and pebbles from the bottom of the lake. The gas bubbles, sand and pebbles form a bridge that a man could use to cross the lake, if he walked up to his chest in water. There is only one drawback—the water in the lake is boiling hot.

NIGHT DRIVING

One of the many difficulties of night driving is poorly lighted road signs. Chemists are now coming to the aid of drivers with illuminated road signs.

Colloidal researchers at the Lensoviet Institute of Technology have produced a special compound, which they named luminofor, that lights up under the action of an electric current. Metal and glass surfaces painted with the compound will soon be used to illuminate road signs. The compound is already in use in Leningrad. House numbers painted with luminofor can easily be seen in the dark.

. . . And The Friend of The Kalmyk

By YURI ROSENBLUM
Literary Critic

At night he dreamed of the steppes, and it seemed to him that he was again inhaling the spicy fragrance of the steppe grasses, that the green stalks were softly whispering ancient legends. On the grave mounds where the leaders of the mighty nomadic tribes lay at rest, sat stern and bristling eagles. No matter where fate took him—to the rocky shores of the Crimea or the snowy expanses of the Far North—he was drawn to those boundless steppes, where nothing obstructs the view.

There in the Kalmyk village of Abganer Gakhankiny, in a small house of the schoolteacher Kugultinov, David was born in March 1922.

According to an old Kalmyk custom, when a boy was born, a pole was thrust out of the hut's smoke hole so that everybody around would know about the happy event. The schoolteacher's hut did not have a smoke hole and so this type of birth announcement was impossible, but the whole village knew about the new arrival anyhow.

David was a born poet and from early childhood was able to read the wondrous book of nature. In the bell of a newly budded tulip he saw the face of the legendary beauty Ragni, felt his oneness with the world, with his people, with their joys and troubles. And this great fortune endowed him by fate he was to return a hundred fold to his countrymen, transcribing into the music of words their hopes and aspirations.

This small nation has a long and troubled history, handed down through the ages by storytellers in the form of ancient songs and legends.

In the second half of the fifteenth century, scattered Oirat tribes, searching for new pastures, wandered over the hot Dzungar Steppes to the south of the Urals. Periodically they were attacked by warlike neighbors. "When twenty men are not friends, their fortress is of clay; when two men are friends, their fortress is of steel," said the sages. And so the resolute and enterprising Esentaidji united four Oirat tribes into the Dörben Oirat Union—the Union of Four. That was when the neighboring Turkic tribes began calling them Kalmyks, separatists.

Thus began the history of a people whose hard fate brought them two hundred years later to Europe, to lands belonging to the Russian state.

"There are in the world sixty-eight melodies of joy and one hundred and seven melodies of sorrow," says an old Kalmyk song. And one of the melodies of sorrow is the memory of arduous wanderings, which was heard three centuries later, like a distant echo, in the verse of David Kugultinov:

In the comfortless life of long marches,
When we sat by the campfire's glow,
And the hooves of the horses were ringing,
And the murmuring wind whistled low,
It blew dismal or angry or playful . . .
And the road was as far as the sky!
Intertwining with manes wildly flowing,
Were the roads that were speckled and dry.

They traveled along the valley of the Black Irtysh, and when they approached the Siberian city of Tara, they sent a mission to Moscow, to Czar Vasili Shuisky, asking to be accepted as Russian subjects. The sovereign ruled that the request be granted and on February 27, 1608, the envoys were presented with the czar's charter. Thus were the Kalmyk people voluntarily incorporated into the Russian state.

By the middle of the seventeenth century there had grown up on the southeastern outskirts of Russia a semi-independent but militarily strong Kalmyk khanate with developed sociopolitical relations, its own laws, church and written language. But when their new homeland was threatened, the Kalmyks fought shoulder to shoulder with the Russians.

In the Battle of Poltava in 1709 Kalmyk cavalry routed the picked Swedish troops led by Charles XII. During the Napoleonic invasion of Russia in 1812, Kalmyk cavalry crushed the enemy at Brest and Gorodechno, fought in the Battle of Borodino, and then forced the enemy across the lands of the Warsaw dukedom and Germany, all the way back to France. The yellow-pierced banner of the Second Kalmyk Regiment, with an image of a rider on a white horse, was carried in a triumphal procession through the streets of Paris.

But the victorious warriors returned to the rule of the czar's officials, the local gentry and the lamas. Poverty and despotism held sway in the Kalmyk steppes. The worth of a grown man was reckoned at thirteen rubles. Kalmyks were systematically forced off their land, and there were no schools or hospitals.

There came the time, however, when a message from Lenin was brought to the Kalmyk steppe. And the voice of revolutionary Russia resounded in the rear of the White Guard forces in the most distant Kalmyk villages. By the spring of 1920 not a single White Guard band was left in the Kalmyk steppes.

A new life began. A Kalmyk literature and intelligentsia emerged along with Kalmyk writers, artists, composers and architects. Nurseries, kindergartens, schools, theaters and institutes were set up. And by the time David Kugultinov entered the first grade, there were forty schools in the Bolshe-Derbet Ulus attended by two thousand four hundred pupils.

He began writing very early. His first poem was published in a newspaper when he was fourteen. Four years later the first collection of his verse in the Kalmyk language appeared. The book was not big and, of course, it was too early to speak of general recognition, but his singular talent was marked by the critics. Even at the dawn of his creative career the young poet strove to become a bard of his time, of his generation.

The Great Patriotic War began on June 22, 1941. David Kugultinov has only scanty recollections of his life at the front. This is not because of false modesty but the attitude that duty is not an exploit meriting recognition and fame, but the natural behavior of a man and patriot. Only in the trenches did he really understand the nature and true meaning of war. And that discrepancy between youthful and naïve ideas of battle and what he saw through the sights of a rifle resting on the breastwork gave birth to virile and tragic verse. That is how one of his first wartime poems—"The Song of the Autumn Wind"—came to be written.

The wind whistles low as it slides off the shiny bayonet.
The song that it sings is as sad as a heartfelt sigh.
The blue of the sky is pierced by a crescent angrily,
A reddish crescent that through the clouds doth spy . . .

...he Steppes,

But the tragic tone changes in the final lines to the oath of a warrior-bard:

None can escape the moans of the world,
None can ignore the call of the world,
May the steel of the gun all withstand:
My pain and my wrath through it I'll fire.

This statement is very typical of David Kugultinov, always conscious of his participation in the trials and joys of humanity. Perhaps that is why *I* is always transmuted into *we* when he writes of himself.

At the front a man's quality was on trial. It was a stern and merciless test by fire and blood. He came through it with honor, but fate had another trial in store for him.

The injustices the Kalmyks suffered was harsh and painful. The crimes of the renegades and traitors who collaborated with the Nazis during the war cast a shadow on all the Kalmyk people. A wise Kalmyk proverb goes: "On the dung of a single camel slip a thousand." It was hard to reconcile oneself to this bitter truth, but like many other Kalmyks, David Kugultinov was exiled to Siberia. All he had left was his belief that truth would triumph.

In February 1957 the Sixth Session of the USSR Supreme Soviet adopted the law restoring the autonomy of the Kalmyk people.

His home steppe met David Kugultinov as though no time had intervened, as though there had been no parting. "And the genius of life with unheard of bounty" made him a gift of a new image, the image of his native land. But it was no longer a ghost that had sprung up as a memory of the past cherished by a voiceless imagination. For him the steppe again became a reality, and the return to the land of his forefathers was perceived as the natural triumph of Good over Evil and Truth over Falsehood.

Now he felt "the hunger of creativity," the unsaid clamoring for expression:

I put my hand upon my heart and wondered,
Is that a song a'throbbing in my breast,
As yet unborn and with a break still feeble,
A'pecking at the shell of nothingness?

He wrote a great deal but only on themes that excited his mind and touched his heart. He mastered new genres, new literary forms. He wrote the poems "Love and War," "The Prisoner of Moabit," "Living Water," stories in verse and prose and, finally, conceived the large poetic philosophical *Life and Contemplation,* the book he had been preparing for all his life.

The verse in *Life and Contemplation* is all in twelve-line stanzas. Characteristically, the last lines are reminiscent of the traditional Oriental couplets, usually a philosophical generalization expressed tersely, almost aphoristically. The themes shift—now an everyday scene, now an expanded Kalmyk proverb, now a character study.

There are poets who are uncommonly consistent, true to themselves both in life and in poetry. Fidelity to one's self is fidelity to humanity, of which the poet David Kugultinov never forgets he is a part.





Yakutia is where it gets so cold that milk is delivered in baskets and paper sacks, where grade school pupils stay home when the temperature gets down to 58 degrees below zero, not higher (from the fifth grade up they're excused only when the thermometer registers 67 below). Yakutia is a vast land of permafrost stretching north and east from Lake Baikal and occupying a third of Siberia. Oimyakon, known as the Pole of Cold, is located here, and Aikhal, the first town in the world with an artificial climate. But it's not always cold. In summer the thermometer climbs to 86 degrees and higher. That is the time of the gnats. But neither gnats nor cold bring life to a standstill. The Yakuts breed reindeer and horses, work as lumberjacks and trap squirrel, ermine and sable for the adornment of the world's most fashionable women. They also mine the gold for the USSR State Bank reserve. Since March 8 is International Women's Day, there will also be special articles on the fair sex—their problems and accomplishments. A larger proportion of women work in the Soviet Union than in most Western countries. Even with living standards rising, the number of women working is increasing. There is more than money involved, one article by a newspaperwoman suggests. It deals with the psychological aspects of women's need to work.



Stavropol is a city of acrobats, of acrobatic jumpers, to be more exact. Of all the different kinds of acrobatics, only jumping is popular here. At the Twenty-fourth USSR Acrobatic Championship all gold medals in jumping went to the acrobats from Stavropol. In 1967, at the World Acrobatic Championship in London, the International Federation of Acrobatics awarded the highest title of Mr. Jumper to Vasili Skakun of Stavropol. Skakun, whose name means jumper in English, was called the best jumper in history. The article tells among other things, how Stravropol acrobats learned to "tame the crocodile," as they call the trampoline.

Life on a collective farm in the steppes.

LGOV is a small town in the temperate belt of the European part of the country. It is surrounded by forest on all four sides. The forests are not as dense as they once were, but you still hear the wary sounds of game and wild fowl.

The prize catch for local and out-of-town hunters is wild boar. But tracking this savage animal takes doing.

"Beware of its tusk," say the initiated, "don't drop your guard a second. When you track a boar, keep looking back; the cunning beast, sensing pursuit, will make a circle and charge from behind. Be sure you kill your boar, not just wound it. You won't have time for a getaway; the wounded beast leaps like a tiger. In other words, watch your step every second when you boar-hunt."

Hearing all this didn't make me feel too good. This was my first hunting trip, and I had never seen a wild boar, even at a distance.

Izvestia photographer Victor Akhlomov, a little paler than normal, bravely asked the hunters to station him where a boar would pop into sight. He wanted a head-on photo.

The cart carrying the amateur hunters, us correspondents included, approached the boar's lair. Our "team captain," Vasili Zelenin, stopped the lead horse and raised his hand, which meant: Quiet! He's close!

Now we all saw the fresh boar tracks cutting across our road and moved onward in total silence.

We spotted other tracks entering the marsh, rode all around the edge and saw no tracks going out, which signified that the animal was in his den.

We led our horses away, and Zelenin positioned us by "number." We hurried onward, sinking into the snow, trying to move quietly but with no conspicuous success.

No. 1 man was Vladimir Khityaintsev, one of the most experienced hunters in the region, No. 2, Dmitri Starodubchenko, No. 3, Ivan Aleksiuk. He picked a place which gave him a wide range of vision, and then remained motionless.

I took notice of all this and stationed myself, as No. 4 man, behind a cluster of bushes. Position No. 5, the best one for sight, was taken by Akhlomov and Zelenin.

A quarter of an hour later a shot rang out ahead, and the beaters began to make a lot of noise. The minutes dragged on, and the shouting drew nearer. My arm started to numb and





Pirate strains at the leash, eager to go for the boar. Samoilov, an experienced hunter, gauges the moment to let go.

The disgusted look on Khityaintsev's face tells us the whole sad story. Half-baked hunters! We had made too much noise.





BAD DAY FOR A WILD BOAR

BY ALEXANDER CHEMONIN,
IZVESTIA CORRESPONDENT

Photographs by Victor Akhlomov

my vision grew clouded. "Damn it, let him run somewhere else!" I told myself very angrily.

The beaters' cries were already very loud, and a hunter's horn signaled the end of the hunt, but there was no sign of a boar. Was it a mistake, or had he escaped?

We went into a huddle for a briefing. Of course, we had been too noisy before the beaters commenced their job. So the beast had cleared out of his resting place and slipped through between the number positions and the beaters.

Zelenin broke up our huddle by saying that he had an idea where our prey had gone. We hopped into the sleighs and rode off to another piece of marsh.

There we repeated everything, from the beginning. The second and third tries also proved fruitless.

We did the same the following day: found tracks, figured out which direction the beast had taken, circled the place, the beaters went to work, and again, the boar eluded us.

We were all dog-tired when another effort, in the afternoon, failed. But Starodubchenko and Khityaintsev insisted that we follow the trail with a hound. We had sent a messenger the night before to Konstantin Samoilov in one of the villages inviting him to join us with his young, but well-trained dog, Pirate.

We finally came to a spot where the boar had rested on a bed of reeds and dug up all around it searching for food. Pirate whined and strained at the leash: He wanted to go after the boar without a moment's delay. Zelenin straddled his horse, and Samoilov let Pirate loose. We stationed ourselves in a line. We had hardly covered a hundred yards, when Pirate's frenzied barking told us that he had caught up with a boar. He would keep him at bay while we closed in.

I ran through the deep snow and up a hill as fast as I could. The barking grew louder, when suddenly two shots splintered the air on my left. That was Zelenin, for sure, because Pirate stopped barking.

By the time I dashed up, Pirate was tearing away at the carcass. I only had time to see that the boar was almost as big as a horse, when another shot rent the air, somewhere further, below. Pirate was off like a flash. Someone ran after him. I got as far as the middle of the bog when I dropped to the snow from sheer exhaustion. The hunt was over as far as I was concerned.









We approach the beast's lair, this time in complete silence, we hope. We have our last-minute instructions. Every man knows what he is supposed to do. Does the boar, we wonder?





After we get the boar loaded onto the sledge,
even the dog is too exhausted to walk.
We won't have to embroider this hunting story
too much—we're bringing home the trophy.



These branches of a bush in a winter-bound forest near Moscow somewhat resemble African palm trees covered with snow.

Photograph by Victor Akhlomov

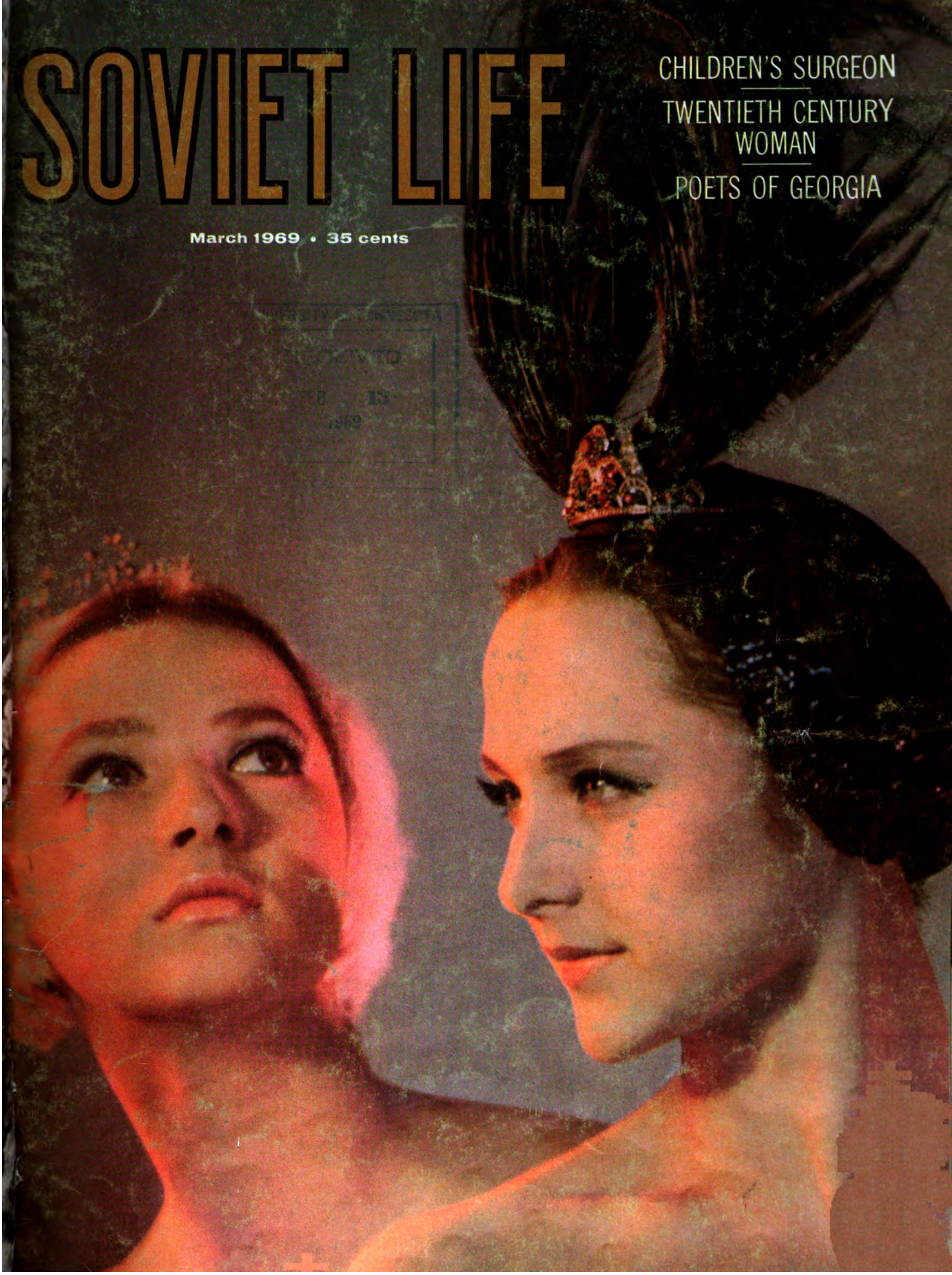
SOVIET LIFE

CHILDREN'S SURGEON

TWENTIETH CENTURY WOMAN

POETS OF GEORGIA

March 1969 • 35 cents



College entrance examinations this year confirmed a trend noted in 1968—that more young people are going in for the humanities and for biology, teaching and medicine. At the First Medical Institute, for example, there were nine and ten applicants for each student place, more than the institute has ever had.

Yunost, the Soviet youth magazine, asked Dr. Stanislav Doletsky, the well-known children's surgeon, to comment on this development. "It seems to me," said Dr. Doletsky, "that the interest in medicine is one example of the growing interest that young people are showing in human personality and psychology. A concomitant is a greater interest in philosophy. That medicine is one of the most human of professions is an old truth. Here we have what I think is a very important opportunity for selection. The more people who want to become doctors, the greater number of suitable candidates for training we have to choose from."

"Science Town in Siberia has, for several years now, been selecting its future math, physics and chemistry undergraduates at high school olympiads and study groups and directly at schools. Do you think similar efforts should be made to select future students of medicine?"

"We did try that. At one medically oriented school in Moscow we got a group together to study children's surgery. The eight high school students who came to our clinic for their practice work did a fine piece of research, although it was not large in scope. They even reported on it to the Moscow Society of Children's Surgeons."

"Did those high school students enter medical college?"

"Most of them did. Those who did not went in for nursing. The study group at school helped them find their vocation."

"How would you suggest that high school students be tested to find out whether they should choose medicine?"

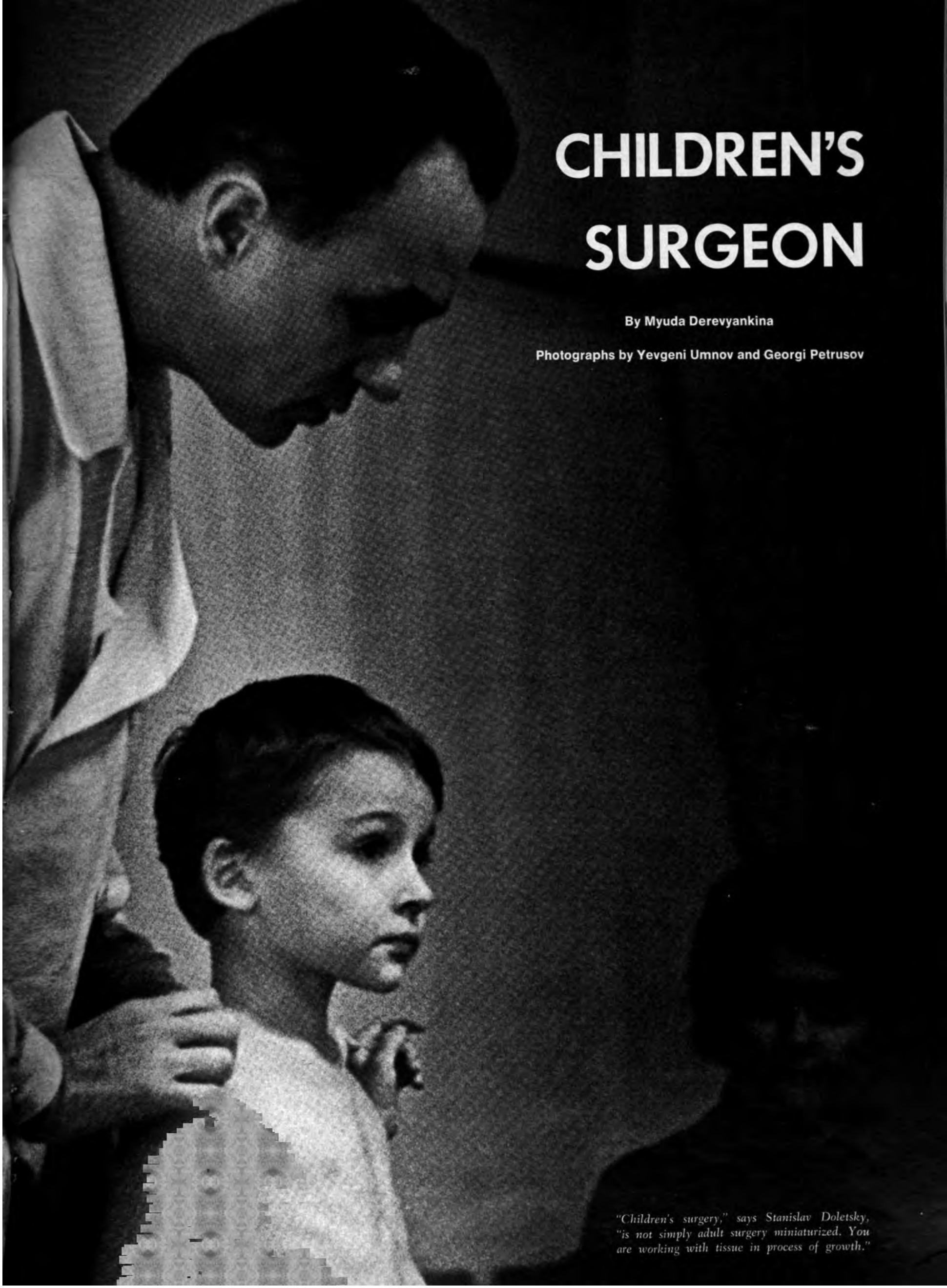
"There is no foolproof way of doing that. I think, though, that medical colleges should admit 20 per cent more students than they plan to graduate. The 20 per cent will drop out in the first and second years. Those without any talent and no desire to work will leave. Under the present system we plan to graduate every student we admit and try to drag every one of them through to the end. This is a mistake, I believe. Not everyone will make a good doctor."



CHILDREN'S SURGEON

By Myuda Derevyankina

Photographs by Yevgeni Umnov and Georgi Petrusov



"Children's surgery," says Stanislav Doletsky, "is not simply adult surgery miniaturized. You are working with tissue in process of growth."

The interview with Dr. Doletsky was continued by SOVIET LIFE correspondent Myuda Derevyankina.

"What, ideally, are the standards a doctor should meet?"

"We'll begin with the fact that a doctor must be intellectually-minded. For a doctor to be intellectually-minded should be natural, although often enough you come across those who are not. The generally accepted meaning of the word intellectual is really not what I'm talking about I have reference to the Latin word *intellectualis,* which means 'understanding.' A striving to understand the complexity of life and your place in the social scheme. Living for the good of society and not at the expense of society is, it seems to me, the mark of the intellectual.

"Such a man should have high ethical standards. A man may be gifted and dedicated, but if these qualities are directed only toward self-advancement, he will not have much left over to give society.

"The main thing is that a doctor should love humanity. For a doctor not to like people should be an impossibility. This is as necessary in his profession as it is for a singer to have a voice.

"And, of course, professional skill. Medicine has no use for the amateur. A doctor must be deeply professional. He must have knowledge, honesty and a sense of duty. He must be critical of himself. He must be determined and enterprising. He must be willing to come to the aid of others at any moment, regardless of his own mood or condition. There must be a willingness to sacrifice himself, self-abnegation. In other words, he must have the traits that have always been required of Russian doctors.

"So you see, the demands are of the highest, while the rewards, other than the spiritual rewards—the consciousness that you have saved a human life, the respect of society, and so on—are not quite adequate to the demands. Doctors' salaries are far from high. When a young person chooses medicine, he does not do so because he expects to lead an easy life."

"How did you get into medicine?"

"By accident. I wanted to be a flier."

An Endless Run

The 17-year-old boy wanted to be a flier. That was as natural in the thirties as it is for 17-year-olds today to want to be cosmonauts. It was the spirit of the time. Boys yearned to be in the sky, or at least at sea. But they were needed most on land.

Doletsky did not make the Air Force College, but not through any fault of his own. So he indifferently followed the advice of his mother, whom he loved, and applied to a medical school.

"Medicine is such a diversified field that it brings out all the talents a man may have," says Dr. Doletsky. "Consequently, I have not been a failure. I went in for surgery."

Surgery called for the same character traits that made Dr. Doletsky want to be a flier—boldness and a willingness to take risks, precision and calculation, and the ability to cope with the unexpected and to make split-second decisions. But while a flier has runs that are much the same, operations are as unlike one another as people are.

Although Dr. Doletsky did not become a flier, he went through the war all the same. In 1941 medical students in their fourth year were not given time to finish their studies; they went straight to field hospitals and operating rooms. His war stint did not end unil 1945.

Twenty-year-old doctors became surgeons, witnessing enough sorrow to last them a lifetime.

"I do not like to recall the bitter moments of the war, or talk of the experience we doctors gathered. It was experience learned the cruel way. But I do like to remember the eagerness with which we returned to our studies. What a revelation were the opinions of an elderly professor, and how necessary we found the textbook truths we had previously thought banal. We now knew what it meant to lack knowledge, and we fell on it ravenously. There were no limits to our thirst for knowledge, our eagerness to learn new facts. I may have chosen children's surgery just because it presented thousands of unsolved problems."

Act Like a Surgeon and Think Like a Pediatrician

Children's surgery is sometimes, and undeservedly, called minor surgery. Probably because all the dimensions are ten times smaller. But a child is more than simply an adult reduced in size. And the problems in this fairly new branch of medicine are not ten times simpler but a hundred times more complex.

"What is the essential difference between surgery for children and surgery for adults? Does the difference lie in the delicacy, precision and caution that small patients require?"

"Is literature for children different from literature for adults only because of the large print and many pictures? That's not too exaggerated a comparison. Children's surgery is more than general surgery made to fit children. It is a qualitatively different stage in the development of medical theory and practice.

"When a surgeon operates on an adult, he wants to restore a definite order, the equilibrium that existed in the body before it became sick. A child is a different problem. His body is still immature; it is still developing, and not always developing uniformly. You cannot simply correct and restore what existed. The organ on which you operate is still going to grow and mature, changing its form. When you put stitches in the lungs or the esophagus, you must be able to visualize what those tiny bits of living flesh will be like in 15 to 20 years. If you don't, and you make the suture one millimeter longer than you should or a bit to one side, then even the most technically perfect suture may, over the years, grow into a thick scar that will pull at a tender organ and prevent it from developing normally. Pediatrics is the branch of medical science that deals with children's diseases. The basic law for a surgeon operating on children is to act like a surgeon and think like a pediatrician. Children's surgery arose as a fusion of old sciences, their common offspring, to whom both surgery and pediatrics have lovingly contributed their finest achievements. Even brilliant technique will not help a surgeon who does not understand the specific nature of a child's body."

"Parents are always terrified at the thought of an operation on their child, especially if the child is still an infant. To what degree are such fears justified?"

"An operation is always a risk. The unexpected can always happen, sometimes with fatal results. But the risk has to be taken. Many of the illnesses which older children and even adults suffer from would never have arisen if the slight deviations from the norm, harmless at first glance, had been eliminated in time. And the earlier the better. It was believed, some five years ago or so, that it was preferable in many cases to wait a few months or even years to let the child grow older and stronger. But as the child grows, he adjusts himself to his defect and after an operation must learn to live without it. Besides, disease drains the child's strength and makes it harder and harder for the body to fight. It is sometimes better for the surgeon to intervene immediately, in the first few days or even hours of a child's life. If he takes the responsibility for the child's life and is willing to risk operating, that means there is no other way out. While we understand the alarm of the parents, we still beg them to trust us, to help rather than hinder us in our difficult work. All Soviet children get regular physical checkups, which helps us detect diseases early. When the child looks and feels well, the parents hope he will recover without an operation. But the doctor knows that a child's appearance is often deceptive, that no matter how well he looks he may still be seriously ill. This happens with peritonitis, for example. In such cases the law permits the surgeon, under special circumstances, to undertake an operation over the protest of the parents."

"Is the surgeon held responsible for a fatality on the operating table?"

"He is always morally responsible. Otherwise, he is held responsible only in case of some grave error. No one is insured against the unexpected."

"Have any of your operations been unsuccessful?"

"Yes."

"What helped you in such cases?"

"I am not callous, and I have never developed a professional indifference to death or misfortune. But neither am I hysterical. I don't get drunk after an operation that was a failure, or beat my head against the wall. I force myself to think of what I have to do in the future to prevent a repetition. That is the way out because that is the way of progress, and it helps me. No other distraction can."

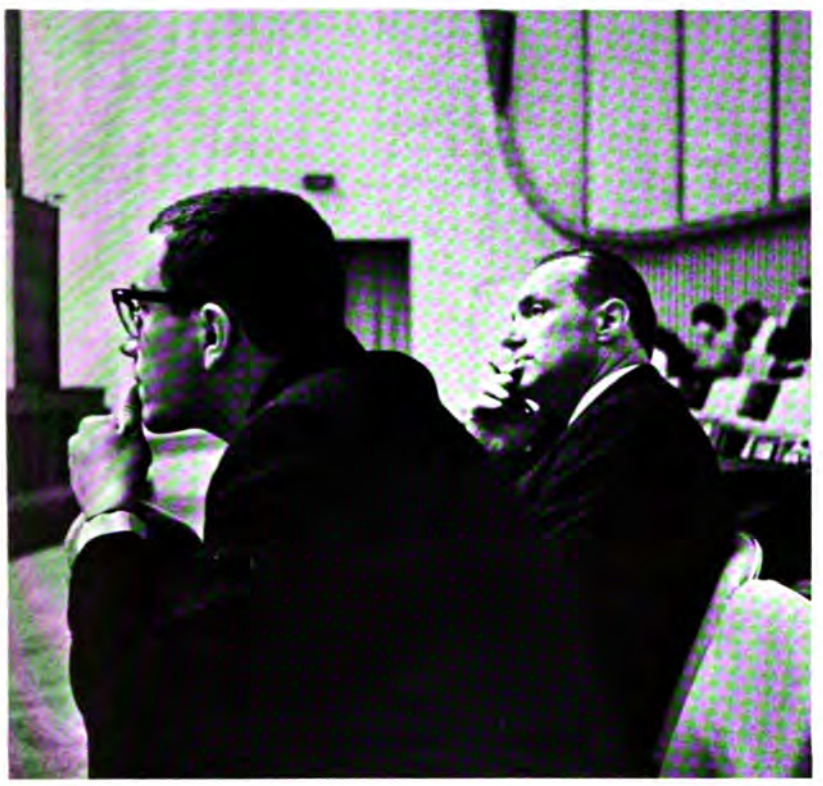
"What kind of an operation would you call perfect?"

"When a surgeon does nothing superfluous, only what is absolutely necessary. Persistent work and constant thought of what you are going to do help make for a perfect operation. It was the writer Anton Chekhov who defined the elegant as the absence of everything superfluous. An operation should be elegant. In the sphere of operational techniques the idea of elegant would correspond to the word laconic, so popular these days in literary criticism."

"What do you think of the latest government decision on measures to improve the public health services?"

"Soviet medicine is now going through a critical period. It has started developing in depth, so to speak. For a long time it was forced to develop 'in breadth,' to increase the number of doctors in Russia, to say nothing of doctors for places like Siberia and Central Asia, where there were practically none before. We had to start from







(Top) Dr. Doletsky, head of children's surgery at the Central Institute for Advanced Medical Training, with visiting Professor G. Imdahl of the FRG.

(Center) Medicine is the family vocation. The surgeon and his son Andrei, a medical student, are among those present when his wife, Kira Daniel-Bek, a well-known cancer specialist, defends her thesis for an advanced degree.

(Bottom) Dr. Doletsky discusses an operation. The Institute students themselves head children's hospitals and divisions of surgery elsewhere.

scratch. Now we have more doctors than any other country. In practically any place in the Soviet Union, in out-of-the-way villages, mountain districts or forest areas, skilled, free medical care is available. But with work on such a broad front imperfections and errors are inevitable. Doctors were graduated after six years of study with the diploma of 'healer,' but specialization remained a matter for the future. That was wrong. There was a shortage of modern equipment and instruments. There was a great deal we could not do because we simply did not have the money.

"But now the time has come when we can and must reorganize much of our system of health protection, to retain what is best, sweep away what is obsolete, and make a new advance. This turning point coincided with the appointment of Academician Boris Petrovsky, prominent scientist and magnificent surgeon and organizer, as Minister of Health. In his two years as minister Academician Petrovsky has given us medical people a great deal. The system of instruction at medical schools has undergone considerable change. We now have a Ministry of Medical Industry. The old medical research institutes are being strengthened, and new institutes are being set up. A tremendous amount of attention is being given to reanimation and anesthesia, two fields we have neglected. I would personally make the most optimistic predictions about the future of our health services."

"What gives you the greatest satisfaction in your work?"

"The recovery of a child who is seriously ill."

"And what causes you the greatest distress?"

"Amateurs, if your question is serious, people who poke their noses into what isn't their business to avoid doing their own work. We have our amateurs, bureaucrats most often."

"And if we're joking?"

"Having to reprimand a pretty nurse."

Women in Medicine and in Life

To take off from Dr. Doletsky's joke, three out of every four doctors in the Soviet Union are women. Besides, everybody knows that the best looking girls go in for medicine. So it is not surprising to find almost all male doctors married to their colleagues. Dr. Doletsky is no exception. He met his future wife on his first day at medical school, when he was waiting to see the rector. A month later 18-year-old Stanislav Doletsky was married to 17-year-old Kira Daniel-Bek, the prettiest girl in the school. But Kira turned out to be more than a pretty wife, although that in itself is a good deal. She also went through the war at the front as a surgeon, ending up with the rank of captain in the medical corps and several orders and medals, among them the Order of the Red Star, awarded to fighting men.

Today Dr. Daniel-Bek holds the degree of Doctor of Medical Sciences and is a leading surgeon at the Cancer Institute in Moscow. The presentation of her doctoral thesis was reported not only in the distinguished Academy of Medicine Journal but also in a magazine which her husband, 20-year-old son Andrei and 13-year-old daughter Alyona put out for home consumption. Alyona's contribution to the magazine confirmed my impression that Dr. Daniel-Bek deserves a medal for valor in peacetime as well.

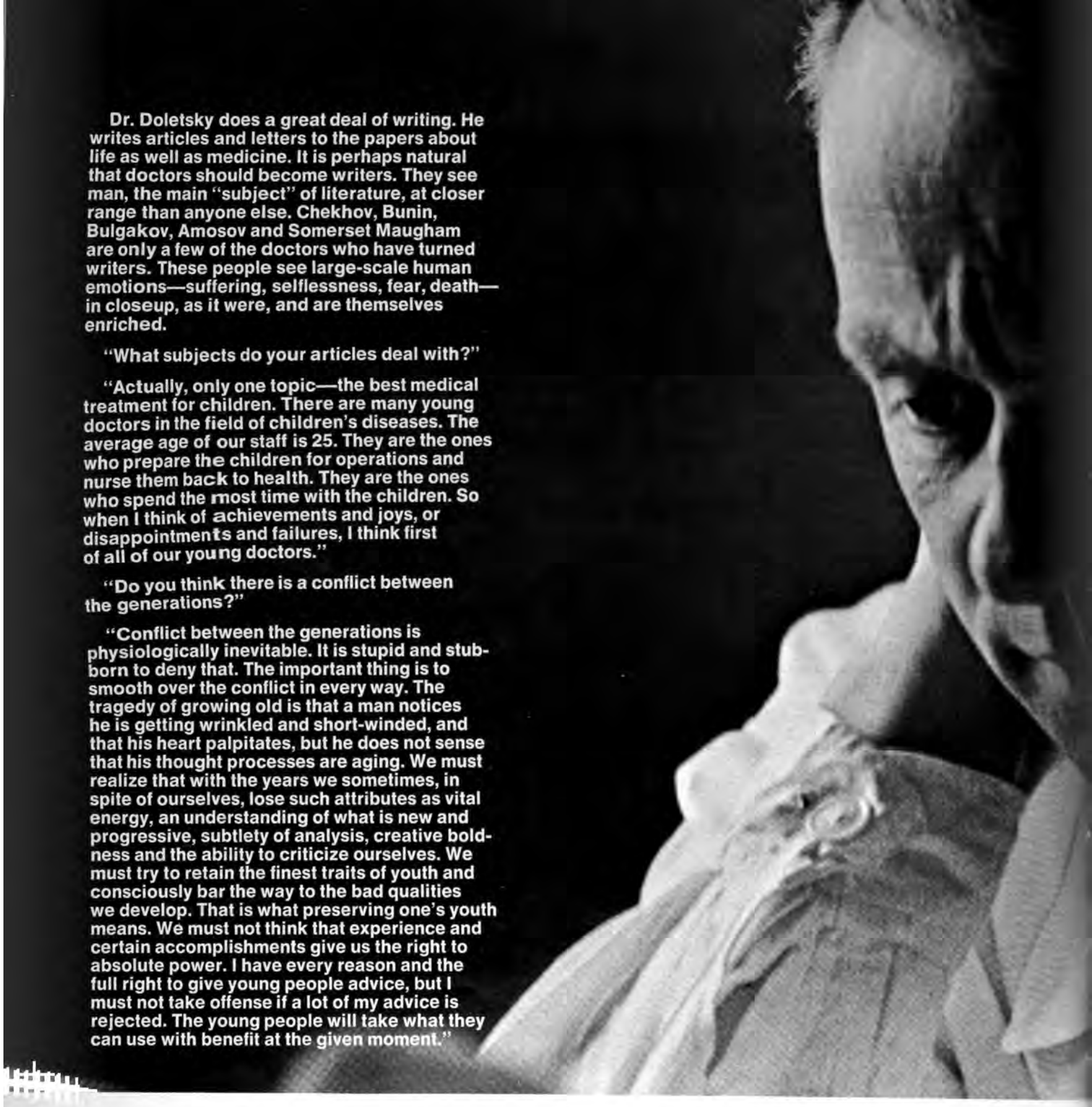
The composition was entitled "How We Helped Mommy Write Her Thesis."

"Last year when Mommy was writing her thesis, we all 'helped' her. I, for example, had the flu six times, and then scarlet fever, so I had to be hospitalized twice. Daddy went on 15 professional trips, first to a congress in England, then to a conference in Leningrad, then to Kishinev to teach the doctors there. He kept telling Mommy she hadn't put the right shirts in his suitcase and, in general, was not looking after him properly. Andrei entered college tempestuously and then, no less tempestuously, wanted to get married in his very first year, saying he was following in Daddy's footsteps. Both of Andrei's projected marriages fell through, but in each case he suffered tempestuously. The result was we were all completely worn out and wanted Mommy to help us because Andrei and I never have enough time and she and Daddy always have time."

Where the Time Goes

Busy people have the most leisure because they value time and know how to husband it.

By eight in the morning Dr. Doletsky is on his way to work. The surgical department at the Rusakov Children's City Hospital is one of the largest in the country. Dr. Doletsky has his office there. He is head of the department of children's surgery of the Central Institute for Advanced Medical Training. In practice this means that besides medical work the clinic devotes a great deal of time and effort to



Dr. Doletsky does a great deal of writing. He writes articles and letters to the papers about life as well as medicine. It is perhaps natural that doctors should become writers. They see man, the main "subject" of literature, at closer range than anyone else. Chekhov, Bunin, Bulgakov, Amosov and Somerset Maugham are only a few of the doctors who have turned writers. These people see large-scale human emotions—suffering, selflessness, fear, death—in closeup, as it were, and are themselves enriched.

"What subjects do your articles deal with?"

"Actually, only one topic—the best medical treatment for children. There are many young doctors in the field of children's diseases. The average age of our staff is 25. They are the ones who prepare the children for operations and nurse them back to health. They are the ones who spend the most time with the children. So when I think of achievements and joys, or disappointments and failures, I think first of all of our young doctors."

"Do you think there is a conflict between the generations?"

"Conflict between the generations is physiologically inevitable. It is stupid and stubborn to deny that. The important thing is to smooth over the conflict in every way. The tragedy of growing old is that a man notices he is getting wrinkled and short-winded, and that his heart palpitates, but he does not sense that his thought processes are aging. We must realize that with the years we sometimes, in spite of ourselves, lose such attributes as vital energy, an understanding of what is new and progressive, subtlety of analysis, creative boldness and the ability to criticize ourselves. We must try to retain the finest traits of youth and consciously bar the way to the bad qualities we develop. That is what preserving one's youth means. We must not think that experience and certain accomplishments give us the right to absolute power. I have every reason and the full right to give young people advice, but I must not take offense if a lot of my advice is rejected. The young people will take what they can use with benefit at the given moment."

research and teaching. The undergraduates here are not youngsters but experienced doctors who study at state expense for six months. These doctors are themselves heads of children's hospitals and surgical departments in cities and villages all over the country. This kind of student body is not easy to please, especially when the instructor is half the age of his students, as sometimes happens. At lectures and during consultation periods you may see an ironic smile or hear someone remark: "What are they telling us that for? As if we didn't know it in Syktyvkar." But things are quite different during operations performed by Dr. Doletsky. Here the gray-haired student really feels like a schoolboy.

"Do you know the kind of hands he has?" Dr. Mamed Gorjiladze, chief children's surgeon of the Abkhazian Republic, asked me with a trace of Eastern effusiveness. "I'd give both legs to have hands like that!"

It is hard to explain what talent is. Usually we say it is hard work plus knowledge and a mysterious natural gift. The gift always comes last. Dr. Doletsky himself believes that almost anyone can become a surgeon, given a certain amount of hard work, experience and technique. I am quite sure he is wrong. I would put that natural gift, so condescendingly relegated to third place, at the top of the list.

It is enough to watch Dr. Doletsky operate to be convinced of that. To me the operation seemed to last a long time, so leisurely were his movements. He would show something to the students and explain it, speaking quietly, without raising his voice, and treating the nurses affectionately, even when they made mistakes. In a word, he did not hurry. Later, it turned out that such a complicated operation usually required five hours. Dr. Doletsky had done it in three, and done it brilliantly. That is the word the student doctors kept repeating, forgetting all about being ironic and knowledgeable. For them the main thing now was to do likewise. Once you have seen an operation performed faultlessly, you think you must do it exactly the same way. Dr. Doletsky, however, does not like slavish imitation.

"The expression 'Style is the man' refers not only to literature," he says. "Every surgeon should have his own style."

The style of the clinic and Dr. Doletsky's department is democracy,



hing and love. Those are the words I want to use here, though may sound sentimental and out of place when applied to a rch institute. Love of children, love of the work, for only love dedication keep a man at the clinic all day and all evening, te the reminders of the doctor on duty. Finally, it is love and ct for one another, the thing that creates a deep sense of con- ce, the spirit of a close-knit group. That spirit, a vague enough pt, is cultivated in quite definite ways. One of them is the Satur- let-togethers that have become a tradition, when over coffee or the woods it is possible not only to joke and sing but also to rankly about the things that trouble you. The spirit also includes ct for young people, no petty squabbles, and a healthy sense mor.

at spirit is not the first reason for the countrywide popularity ed by the surgical department, but neither is it by any means ast. The popularity is reflected in the fact, for one thing, that ers on their own bring their children to the department from ver the country even though the operation could be performed

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SOVIET LIFE

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A nurse helps Dr. Doletsky on with his gown and mask. His operating table is a little more than a foot and a half long; his patient is three days old. Many of his infant patients come straight from a maternity hospital.

perfectly well at the children's clinic in their own home towns.

The popularity of the clinic can also be seen from a semi-anecdotal item the doctors do not like to recall but newspapermen are delighted with.

A troupe of Gypsies once set up camp on the grounds of the clinic, with cooking fires, horses, tents, pots and other unsanitary trappings. The only thing they did not do was sing. There had been an accident in the camp. A little girl named Dunya, a general favorite, had been badly burned. The Gypsies were camping near Moscow at the time. When the accident occurred, the leader had gone to the nearest phone and called an ambulance. He insisted that the ambulance take him and Dunya to the Rusakov hospital. "We have heard it has the best surgeons," he said. "We Gypsies are full-fledged citizens even if we are nomads." Dunya was taken to the hospital. Three days later the rest of the troupe arrived at the clinic and camped on the lawn, despite all protests, until Dunya recovered.

"How is a child usually admitted to the clinic?"

"In three ways. They are sent to us from district clinics in Moscow by the doctors there. Or they are sent by doctors in other cities if the case is complicated, or they are brought to us by parents. Or the children are simply picked up on the street when they are injured or have been in accidents, or have fits or attacks."

"What percentage of teenagers are brought in with injuries as a result of street fights or drinking?"

"The percentage is not high and shows no sign of rising. When I was working in Leningrad in 1958, Eleanor Roosevelt visited our clinic accompanied by a professor of medicine. He asked exactly the same question: Were injuries connected with child drunkenness observed in Leningrad? We had almost no such cases ten years ago, and we haven't any more now."

Patient Is Two Days Old

"What do you demand of the doctors at the clinic?"

"That they should have a highly developed sense of mercy, a word that has gone out of fashion. We children's surgeons must be able to feel the way our small patients do when they are cut off from familiar surroundings and their parents. Their strongest feeling is fear. We must be able to imagine that it is our child, sick, frightened and alone, lying there among strangers. Then there will be concern, attention, a quiet voice and, most important, a pleasant smile and a kind word, more important to the child than a piece of candy. Although candy, too, is sometimes useful."

"What sort of operation would you like to perform, the 'operation of your dreams,' so to speak?"

"A liver transplant."

"Could you tell us what you consider the most important work your clinic and your young surgeons are doing?"

"It is difficult to say. Everything is important—diagnostics and anesthesiology and the technique of the operation itself. Care of the child after the operation is no less important. That is a complex science all by itself.

"One of our young researchers, Dr. Valeri Akopyan, has done an interesting piece of work. We know how thin, tiny and defenseless the blood vessels of a child are and how sensitive they are to any interference. You just touch an artery and it instantly turns into a tight plait under your hand. The smaller the child, the harder it is to examine his blood vessels. Dr. Akopyan's method is so good because it works for the very youngest. It is also good because the surgeon does not injure a single one of the main vessels. The probe is introduced through one of the two umbilical arteries, which hardly bleed at all. All the grave complications of aortography, such as vascular thrombosis, rupture of a vessel and spasms, are avoided."

"What has been the most characteristic feature of the clinic in the past five years?"

"The fact that our patients are growing younger. Today we have patients who are one or two days old. In children's surgery a drop in the age level is most important. This is where the achievements of Soviet surgery are obvious. Many of our patients are brought to the clinic straight from maternity hospitals. Very often these infants, ill from the first minute of their lives, turn out to be perfectly healthy babies a year later."

"Do you see your patients later, after they have recovered?"

"Yes. A year later and many years later. It is always very gratifying."

"Perhaps we'll be able to read about that in a book you'll write on medicine and other things."

The Cause You Serve

"I may very well get down to writing such a book some day," Dr. Doletsky agreed. "But the author will not be the one you have pictured here," and he pointed to my notes. "When I read your notes, my shoulder blades began to itch. That happens when wings start growing. But this earth of ours is no place for angels. You probably think I never have unsuccessful operations, when the child cannot be helped and he dies. Or that I never grumble at work or slam the door at home."

It is true that our earth is not a proper place for angels. But I do not agree that man is made up of clearly defined virtues and shortcomings, and if you give him some of the first you must add some of the second. Dr. Doletsky's shortcomings are, like those of many other people, outgrowths of his virtues—democracy that develops into liberalism, an interest in what is new growing into a desire to undertake everything at once, and self-criticism turning into self-torture. But even a novelist does not always understand human nature, and I am merely the writer of an article about a children's surgeon. Incidentally, Dr. Doletsky was once of service to a novelist when he was a medical student and young surgeon. He served as the prototype for Yuri Gherman's charming Dr. Vagrashek in the novel *The Cause You Serve*.

QUERIES FROM READERS

QUESTION: I would appreciate some information on Radio Yerevan. (John Ajakian, Glendale, California)

ANSWER: The first radio broadcasting station in Armenia went into operation in Yerevan in 1926. Its power output was only two watts, and it reached no farther than the Ararat valley. Today Armenian cities have several powerful broadcasting stations working on long, medium, short and ultrashort waves.

Radio Yerevan broadcasts three full programs for a total of 28 hours a day. It also broadcasts a program for foreign listeners. Yerevan telecasts eight hours a day. Programs are in Russian, Azerbaijanian and Kurd, as well as Armenian.

Radio Yerevan can be heard daily from 6 A.M. to 11:30 P.M. on 1181.1 meters, 347.6 meters and 74.26 meters, and from 2:30 P.M. to 10:59 P.M. on 347.6 meters, 74.26 meters and 41.27 meters local time.

Armenians own more than 300,000 radio receiving sets and 140,000 television sets. Wired transmission is widespread.

QUESTION: How high is the monument to Sputnik I in Moscow?

ANSWER: About 325 feet. The main portion represents the fiery blast of a rocket at takeoff. The monument is faced with polished sheets of titanium. Minus the foundation, it weighs about 250 tons.

QUESTION: Could you refer me to some Soviet analytical chemistry books published in English? (E. Voydanoff, Pontiac, Michigan)

ANSWER: The Mir Publishing House in Moscow has issued a number of chemistry books in English on the college level. They include *Qualitative Analysis* and *Quantitative Analysis* by Vladimir Alexeyev, Doctor of Science (Chemistry); *Textbook of General Chemistry* by Boris Nekrasov, corresponding member of the USSR Academy of Sciences; *General Chemistry* (for students of technical schools specializing in chemistry and colleges not specializing in chemistry) by Nikolai Glinka, Doctor of Science (Chemistry); *Theoretical Principles of Organic Chemistry* by Academician Oleg Reutov; *A Course in Organic Chemistry* by Boris Pavlov, Master of Science (Pedagogy) and Alexander Terentyev, corresponding member of the USSR Academy of Sciences; *Laboratory Exercises in General Chemistry* by Vasili Semishin, Doctor of Science (Chemistry); *Physicochemical Methods of Analysis* by Boris Lyalikov, corresponding member of the Moldavian Academy of Sciences.

QUESTION: Can you tell me if the bodies or ashes of John Reed, William Haywood and Charles Emile Ruthenberg are buried near the Kremlin wall, just back of Lenin's tomb? (Charles S. Stevenson, Shawnee Mission, Kansas)

ANSWER: John Reed is buried in the common grave near the Kremlin, behind the Lenin Mausoleum. He died in 1920, when bodies were not yet being cremated in Moscow. A granite slab on the grave is inscribed with the names of those buried under it. The bodies of Charles Emile Ruthenberg (died in 1927) and William Haywood (died in 1928) were cremated. Urns with the ashes of these two Americans were placed in the Kremlin wall. Plaques give their names and the dates of their birth and death.

QUESTION: How much gold backs Soviet currency? (John Saba, Tucson, Arizona)

ANSWER: The gold content of the ruble is set at 0.987412 grams of pure gold. The purchase price of the State Bank of the USSR for gold is one ruble for one gram of pure gold.

QUESTION: Were any postage stamps issued depicting Stalin?

ANSWER: Yes, about 90 sets. The pictures on the stamps were reproductions of photographs and paintings of Stalin.

QUESTION: How are subjects chosen for postage stamps?

ANSWER: The Ministry of Communications of the USSR has a board responsible for issuing postage stamps. It solicits suggestions for subjects from ministries, public and political organizations, trade unions, cultural and educational institutions, Academies of Sciences and various societies, including the Philatelic Society. Their suggestions are considered by an Art Council and included in a publication plan approved by the USSR Ministry of Communication.

QUESTION: I would like some information on the food processing and distributing industries. (A. W. Stier, Plymouth, Indiana)

ANSWER: The Soviet Union has 18,000 large food enterprises employing about three million people. Another 1,200 factories and mills for the food industry are now nearing completion or are being modernized. The food industry is highly automated and mechanized.

The Soviet Union holds first place in the world in output of sugar, milk and butter, and second place after the United States in output of meat, vegetable oil and all types of canned food.

The Soviet Union produces a large volume of food for export. Soviet food products are presently bought by 49 countries, including Britain and France.

During the current five-year plan period a total of 100 new meat-packing plants, 160 dairy plants and 200 cheese factories will be built.

The country has more than 200,000 public eating places—restaurants, cafeterias, snack bars. These establishments and the trade network employ 4.5 million people, and about 2 million work in allied branches.

The sharp increase in the production of consumer goods (1968 was the first year in Soviet history in which the growth rate of light industry equaled the growth rate of heavy industry) has led to the rapid expansion of retail trade. It rose by nine per cent in 1967 compared with 1966. Under the current plan, the increase in 1968 should be 9.5 per cent.

The Soviet Union has about half a million state-owned stores which take care of two-thirds of the country's trade turnover. The consumer cooperatives that are widespread in the rural areas run another 360,000 stores. Some 4,000 large department stores are to be opened between 1968 and 1970.

Despite all this, there are still not enough stores to meet rising purchasing power.

QUESTION: I should like some information on such youth publications as* Pionerskaya Pravda *and* Komsomolskaya Pravda. *(Brookside Terr, North Caldwell, New Jersey)

ANSWER: *Pionerskaya Pravda* is published for children between 8 and 14 by the Central Committee of the Young Communist League and the Central Council of the Young Pioneer Organization. It is very popular both in the Soviet Union and abroad and goes to 59 countries.

Pionerskaya Pravda has the largest circulation of any newspaper in the Soviet Union: 9.2 million copies. Contributors include leading scientists, writers, public leaders and thousands of children from all over the country.

Komsomolskaya Pravda is published by the Central Committee of the Young Communist League. Circulation is more than seven million. It is a very popular daily because of its regular columns and its bright coverage of political and sport events. The newspaper receives as many as 1,000 letters a day from readers.

QUESTION: Does the government provide an allowance for unwed mothers? (Thomas West, Huntington, West Virginia)

ANSWER: Yes, the government pays unwed mothers an allowance. The war casualties forced legislators to consider how to stimulate population growth. One result was the Decree of July 1944 granting allowances to mothers of large families and to unwed mothers.

The measure had the desired effect of a rise in the birth rate. Between 1945 and 1957 the number of unwed mothers receiving allowances went up. It has dropped since. Millions of men had been killed in the war, and in the years following there were more children born out of wedlock. Today the number of women under 35 is approximately equal to the number of men that age. Women stand a better chance of getting married, and that tends to reduce the number of unwed mothers.

QUESTION: What types of typewriters do Soviet factories produce? (Erich Aggen, Jr., Liberty, Missouri)

ANSWER: The Ukraina, an electric typewriter with an 18.5-inch carriage; the Ukraina, a mechanical typewriter with an 18.5-inch carriage; the Bashkiria, with an 18.5-inch carriage; the Moskva, a portable; the Moskva with two interchangeable carriages: and the Lastochka, a typewriter for the blind. Since Soviet factories do not meet the growing demand for typewriters, the stores also carry imported machines.

→ WARNING—ALTERATION, ADDITION OR MUTILATION OF ENTRIES IS PROHIBITED.
ANY UNOFFICIAL CHANGE WILL RENDER THIS PASSPORT INVALID.

NAME
WILLIAM WILLIS

BIRTH DATE
AUG. 19, 1893

BIRTHPLACE
GERMANY

HEIGHT
5 FEET 8 INCHES

HAIR
GREY

EYES
BLUE

WIFE
X X X

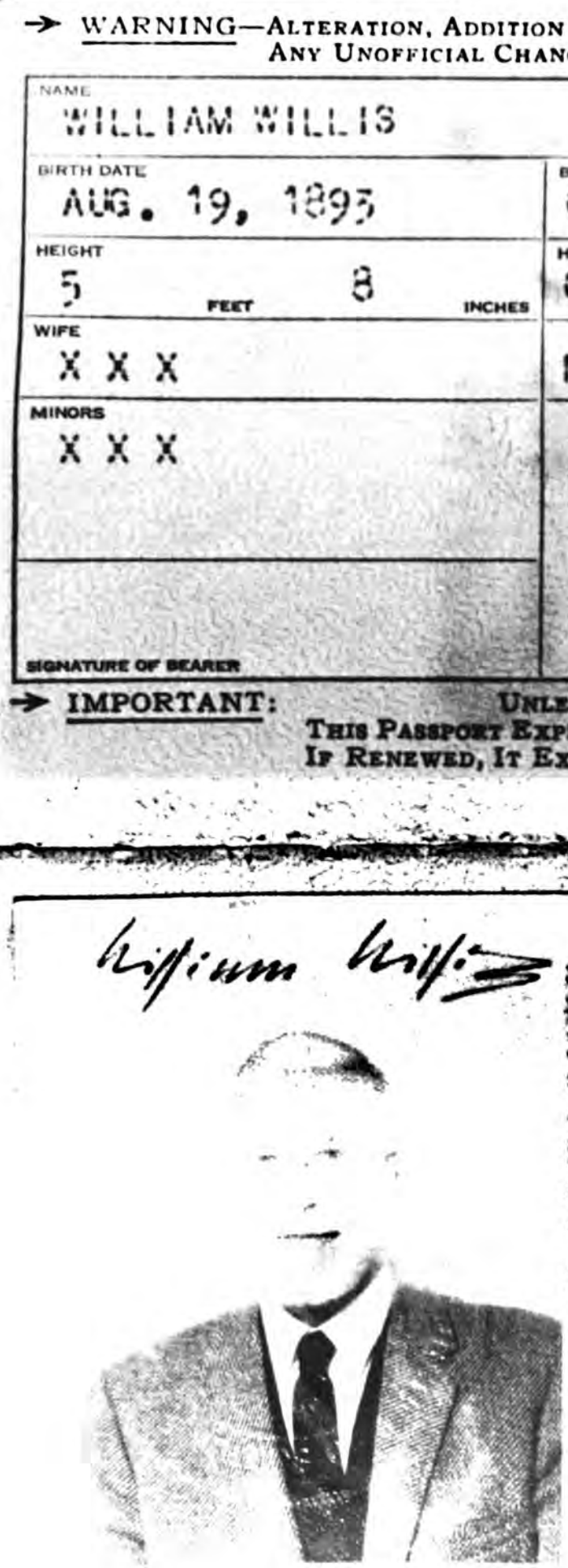
ISSUE DATE
MARCH 18, 1968

MINORS
X X X

PASSPORT RENEWAL

SIGNATURE OF BEARER

→ IMPORTANT: UNLESS OTHERWISE LIMITED
THIS PASSPORT EXPIRES THREE YEARS FROM ISSUE DATE.
IF RENEWED, IT EXPIRES FIVE YEARS FROM ISSUE DATE.



The crew of a Soviet trawler discovered a half-submerged sailboat, the *Little One*, in the North Atlantic last September. Although the trawler searched the area for more than two hours, the *Little One's* owner and skipper, William Willis, was nowhere to be seen.

Lost Captain of the Little One

Photographs by Vladimir Akimov



Little One *on board the refrigerated ship* Yantarny *in Kaliningrad harbor.*

BY IVAN DEMIN
APN Correspondent

LAST OCTOBER FIFTH the refrigerated ship *Yantarny* brought in the *Little One,* a sailboat owned by American William Willis, to Kaliningrad, a Soviet port on the Baltic Sea. Two weeks earlier the boat had been found adrift in the North Atlantic by seaman Lepnev, one of the 25-man crew of the Latvian fishing trawler SRT-4486.

Picked up some 300 miles off the west coast of Ireland, it had no rudder and mast, the sails were torn, the stern was underwater and only the bow was above the surface. The air remaining in that part of the boat kept it afloat. When first sighted it was rocking on the waves a cable's length from the trawler.

There was no one in the boat or in the water around it. The trawler searched the area for more than two hours and found no sign of the owner. His passport, notes, other papers and personal belongings were on the sailboat.

William Willis, a courageous and skillful mariner, was fairly well known in the Soviet Union. His book giving an account of his first voyage across the Pacific on a raft appeared in Russian in 1959.

Where, how and under what circumstances was he forced to leave his boat? What happened to this "author, lecturer, marine explorer," so described by his calling card? At the press conference aboard the *Yantarny,* anchored in its home port, newspapermen, invited to view the sailboat, learned no more than the papers and articles on the *Little One* could tell them.

The boat itself lay on the starboard deck of the big refrigerated ship, which had brought 2,300 tons of frozen fish to Kaliningrad. It measures about 11 feet long, a bit more than 5 feet wide, and weighs 1,100 pounds. The seamen who took the measurements noted that it has a good draft—3.5 feet.

But the deckhouse is a tiny 52 inches by 30 inches. How could a man 5 feet 8 inches tall, according to his passport, have spent that much time in a deckhouse that size. He could have rested only in a half-seated position. It was hardly a comfortable and certainly not a reliable refuge for a man embarking on an ocean voyage, and without modern navigation and communication equipment too.

The papers say that William Willis sailed from New York early in May 1968, intending to reach Plymouth in 75 to 90 days. He carried a letter from John V. Lindsay, mayor of New York, to the mayor of Plymouth. The letter speaks warmly of Captain Willis, a long-time member of the National Maritime Union and an "outstanding seaman." It concludes: "If he delivers this letter to you in person, he will have completed a transatlantic voyage of great merit. Any considerations that you may be able to extend to Captain Willis will be appreciated."

Alas, the mayor of Plymouth was not fated to be the first to read that letter. It was found in a rusty metal box together with the captain's passport and other papers.



Yantarny *Captain Yuri Matochkin hol*
the flag Willis carried on his voy

Captain Willis did not reach England by sailing the English Channel past Bishop Rock, which the sailing directions of the south coast of England found in the boat showed that he intended to do. Nor could he use the checkbook, or send the three letters in envelopes that had evidently been addressed back home in New York since they were typewritten. The letters were for Joseph Curran, President of the National Maritime Union, G. W. Vallentine, sailmakers, City Island Avenue, and his wife.

This experienced sailor must have run into a storm in the middle of July. He gives his last coordinates indicating latitude and longitude on July 13, while the very last entry in the log, made on July 21, gives only the latitude—53 degrees 50 minutes north. His pencil touched the pages of the Nautical Almanac for the year 1968 for the last time on July 20.

It must have been about that time, or somewhat earlier, that Willis wrote his appeal "To the Captain," reporting the loss of a large part of his provisions dur-

"It is hard to believe that a sailor as experienced as William Willis could have left the boat of his own free will," he said at the press conference. "Everything must have happened very suddenly. He may have stepped out of the deckhouse to make some repair and been swept overboard." Captain Matochkin estimates that this must have happened 240 to 250 miles from the spot where the *Little One* was found.

. . . I gently touched the horn-rimmed glasses that the gray-haired captain





2



3

These objects, belonging to 74-year-old William Willis, can serve as the finest exhibit for any maritime museum. The life, too, of this captain, who made lone journeys on a raft and sailboat for thousands of miles in the Pacific and the Atlantic, is a memorial of human fortitude, the same fortitude displayed out on the high seas by Thor Heyerdahl, Alain Bombard and Sir Francis Chichester.

1. *The sailor's trunk in which William Willis' papers were saved.*

2. *The papers and navigation instruments of Captain Willis .*

3. *Newspapermen looking at the log entries captain Willis made.*

4. Little One's *rigging, torn by wind and heavy seas.*

4



Willis made his first entry in the logbook on May 3. Judging from the entries following, day after day in a firm, confident hand, things went well at the beginning.

The captain of a boat with no crew had, of course, plenty to do even when the weather was good and there was a fair wind. Even so, Captain Willis found time to look over articles he had taken with him and edit the notes he had made when he crossed the Pacific on a raft a second time five years earlier. They were found on the boat.

ing the storm and asking for help in making up the loss, promising that his wife or the National Maritime Union would cover the cost if the bill was sent to them.

We can only speculate whether he sighted a ship on the horizon when he wrote the appeal, or only hoped to meet one. In any case, the empty cartridge of a signal rocket was found on the boat.

Captain Yuri Matochkin of the *Yantarny* had examined the objects on the *Little One* more closely than the other members of his crew.

from New York put on every time he had to look at something closely. Someone remarked they were the spectacles of a farsighted man. He would have been at his age; Willis would have celebrated his seventy-fifth birthday on August 19.

Field glasses, a camera, a mariner's compass, parts of fishing tackle, a few clothes, dishes and food were left on the boat. But the courageous captain, who had entered into single-handed combat with the wind and the currents in a fragile craft had vanished, a casualty of the sea.

WOMAN'S PROBLEM

THE RUSSIAN REVOLUTIONARY MOVEMENT made full equality for women one of its demands and wrote voluminously about their depressed position. Women were completely dependent on their husbands for support. Uneducated for the most part, they did not even dream of an active place in political and economic life.

One of the earliest Soviet decrees gave them equal rights with men—the right to enter any educational institution, to a job in any field and to equal pay for equal work. Today women make up 52 per cent of the college-educated population. Seventy-five per cent of the country's doctors, 66 per cent of its teachers, 40 per cent of its scientific workers and 30 per cent of its engineers are members of the "weaker" sex.

For people of my generation it is hard to imagine what that change must have meant for a woman in the Russia of the twenties. Besides her family and her home she now began to take an interest in community affairs and the business of the new state which she had done so much to bring into being.

Along with a sense of economic and intellectual independence came a feeling of equality in the family. Women were now breadwinners like their husbands; they now had a voice in deciding how family income was to be spent, how home life and recreation were to be ordered and how the children were to be brought up.

Much has been done to make it easier for women to have and raise children. Workingwomen have a four-month paid maternity leave, two months before giving birth and two months afterward. The job of a young mother who wants to take additional time off at her own expense is kept open for a full year. Mothers with large families are paid grants-in-aid by the state. Since the very beginning, even when the country was still poor and ravaged by war, it has spent large sums for children's nurseries, kindergartens, boarding schools, summer camps and sanatoriums.

All this has made it possible for women to hold jobs, although it has not freed them from many of the household chores. The problem of housework grew more acute in the postwar years. For one thing the living standard rose, and women had more chance to shop, furnish their homes, make clothing and cook, all of which takes time and energy. Secondly, the worldwide trend toward the family unit consisting only of husband, wife and children who are still minors, is apparent in the Soviet Union as well. You cannot look to Grandma for help any more. Many grandmothers will not think of giving up their jobs, no matter how much they love their grandchildren. A well-to-do family can hire domestic help, if they can find any. With the rise in the educational level no one wants to go into domestic service.

In a word, there are now a great many women's problems that go far beyond such irrelevancies as the length of a skirt or the use of cosmetics. People in the most varied fields—sociologists, demographers, psychologists, philosophers, economists—are now grappling with these women's problems.

The Big Question

Women carry too big a load. In the morning a woman has to tidy up the apartment, make breakfast, take the children to kindergarten, and then rush off to a job. In the evening she shops, picks up the children and comes home to prepare dinner, wash, iron and mend. Besides all that, she would like to read the paper, or a book or magazine. There are also things she would like to discuss with her husband: the buying of some new bedroom furniture, their son's marks, how insensitive her chief on the job is to women's problems,or the latest movie, which made her yawn instead of laugh. And there are only 24 hours in a day.

Some experts propose the simplest solution: cut down the flow of women into jobs.

Vladimir Kostakov, an economist who is studying the distribution of women in industry, says:

"The state no longer needs as many workingwomen as it did thirty or even twenty years ago. Yet since the first five-year plans the feeling has been general that women should be doing socially productive work. That is why our wives feel that they must work, even though there may be no financial need for it. When all jobs are creative and none of them are physically exhausting, and when public services function ideally, women will of course do socially useful work on a par with men. But today, when some jobs are physically taxing and the service industries cannot yet be called modern, it is not obligatory that all women work."

Why Do Women Need to Work?

One answer is that it's dull without a job. It sounds convincing. But as I was interviewing economist Kostakov, I remembered a few years back when I was in the hospital. There were three other women in the ward, a schoolteacher, a salesclerk in the *Detsky Mir* children's store and a weaver. During the month we were there,we learned everything there was to know about each other. We talked about our husbands, children and friends, of course, but most of all we talked about our jobs. The schoolteacher wondered what would happen to the play her class was planning to put on in English. She was afraid the children would have forgotten their parts by the time she got back. The salesclerk asked the friends who came to see her whether the store had at last gotten in a doll that talked,walked and winked and told us how much she missed those excited children's faces on the other side of the counter. The young weaver wept into her pillow. "Here I lie," she mourned, "and my team goes skiing, to the theater and to the swimming pool, all without me."

I, for my part, thought of the articles I had left unedited and longed for my erratic authors. All four of us kept asking our doctor, "When will you let us go back to work?" For all of us work was evidently more than a way of using up excess energy and earning money. It was a way of life, a way of fulfilling ourselves.

All of us were still fairly young; we were not yet tired of working and earning our own living. Inga Kichanova, who has a master's degree in philosophy, describes a talk she had with women pensioners who used to work at the Trekhgornaya Textile Mill. She spoke at a gathering of 150 women between the ages of 55 and 70. None of them had led easy lives. What they had to look back on were years at the loom, the war and, for many of them, bitter widowhood.

"What do you think those women complained about?" Inga asked me. "They said it was dull staying at home, no kind of life at all. We discussed the youth. 'Young people also respect their jobs,' one woman said. 'That's right,' another supported her. 'But it seems to me we didn't complain so much. My granddaughter comes home from the mill all indignant about something; she is going to bring it up at a meeting or go somewhere to complain about it. I tell her that if she is so dissatisfied, she ought to change jobs. She gets mad at me. 'What kind of talk is that!' she says. 'You don't up and leave your mill just like that.' "

The Institute of Applied Social Research of the USSR Academy of Sciences polled 10,000 women workers at factories in Moscow, Leningrad, Gorky and other big cities. Only 53 per cent of these women said they worked because the family needed the additional income. The remainder had psychological motives: the need to feel independent, the desire to be among people, to work with a group, the wish to make use of their training. Zoya Yankova, who holds a master's degree in history and supervised the poll, concludes:

"The majority of them think that a woman who works has more social status and feels more independent, both socially and in family relations."

As we see, it is not easy to persuade women to give up productive work, which ensures them economic independence and social status.

FAMILY AND JOB

BY ADA BASKINA

Women and Consumer Services

Economists, planning experts and sociologists offer many suggestions for making things easier for the woman on the job.

Surveys show, however, that the women themselves think it is more important to make life easier for them after working hours. The Institute of Applied Social Research asked the question: "What should be done to make life easier for women?" About 50 per cent of those answering responded with "Shorten the workday"; about 70 per cent said, "Increase the output of household appliances and the places where they can be rented"; and about 30 per cent said, "Increase the number of laundries, repair shops, tailor shops and other service facilities." But the service area is where we are still behind the demand.

There is a reason for this, of course. During the first five-year plan periods money and labor had to be poured into industrial building. There was simply no money and no people for consumer services. With 20 out of the 51 Soviet years spent in defensive wars and the years in between spent rebuilding, we had no time to think of comforts and conveniences. All we wanted was to get things rebuilt and have sufficient food, clothing and places to live. Household chores and other such things could be managed somehow. They did not seem important.

But when life settled down and the most urgent needs were beginning to be satisfied, the problem of services arose. The government adopted a special resolution "On Measures for the Further Development of Consumer Services."

The number of laundries, dry cleaning shops, repair shops and beauty parlors grew. Ready-made foods showed up in the stores; neighborhood stores were opened where ready-made dinners could be bought. A delivery service is being developed. There are a good many tailor shops. It is estimated that if the number of items made by Moscow tailor shops were evenly distributed, every second woman in the capital would be wearing a made-to-order coat or dress.

The so-called Home Services Bureaus opened in recent years are probably the most popular of all the service facilities. The bureaus save women a lot of hard work. They will send you people to polish your floors, wash your windows, do general cleaning and repairs, sit with a sick person or a baby, or prepare a holiday meal.

The service industry is developing fast, but not fast enough.

Something About Men

Since the position of women in the family has changed, it is natural that wives should expect their husbands to share the domestic chores. It hasn't turned out quite that way though. The wife is still doing 73.5 per cent of the household work by herself; only 26.5 per cent is done by the wife and husband together. True, more and more men are helping to raise the children, but they still do less than the women. A survey made by the Institute of Applied Social Research says that about 65 per cent of the women who work at a candy factory in Moscow regularly supervise their children's homework, visit their schools and take the children to the theater and exhibitions. The remaining 35 per cent share these duties with their husbands.

Marx believed that a man's cultural level could be judged from the way he treated women. This is undoubtedly true, but that can be interpreted in various ways, ways that are often contradictory.

After polling several thousand workingwomen, both verbally and with questionnaires, Zoya Yankova discovered that middle-aged and elderly women (40-60 years old) whose general cultural level is rather low continue to believe that looking after the needs of a family is strictly women's work. Younger and better educated workingwomen believe that an efficient housewife is the one who organizes the housework instead of doing it all herself. They believe household chores should be divided among the members of the family. This led Zoya to a rather categorical conclusion. She thinks housework should be divided equally between husband and wife, by law.

Vera Bilshai, who holds a master's degree in law, finds this an oversimplified understanding of equality and disagrees. She thinks that women, being women, will always devote more time than men to household duties and children. Therefore, men should be encouraged not so much to help with the housework as to respect women for their work in the home. "A husband should be a friend,adviser and partner,not a seamstress and laundress woman," she says.

There is still another point of view, a kind of combination of the two. According to Lydia Libedinskaya, who has written widely on women and their problems, if a husband is a real friend he will help out as a matter of course when his wife is overworked. In family affairs like raising children, supervising their homework, taking them to kindergarten, playing with them and reading to them, the husband must assume at least half the responsibility. When it comes to the domestic chores proper, his participation will depend on how well the household is equipped with mechanical aids. Vacuum cleaners, floor polishers, self-service laundries and dry cleaners have brought the stronger half of our society, with their love of things technical, much closer to domestic work.

"The Human and the Feminine"

My neighbor, a 30-year-old engineer, told me the following story as a joke:

"Somebody wanted to introduce me to a girl, twenty-two, a beauty, with an angelic character. What does your angel do? I asked. Is she in college? Or working? Neither, I was told. She couldn't get into college, tried and failed three times. And she doesn't have to work because her father is the director of a bank. What does she want? I asked. To get married, I was told. That's not enough of a goal, is it?"

The story is significant. When you choose a wife, things like appearance, age, character and the family the girl comes from are all important. A man might also like to know how well-off she is, the most important being whether she has an apartment of her own. But for all that,what interests him most is her personality—what she does, what she aspires to and what her interests are. If a girl has no interest in life other than getting married, life with her might quickly prove to be a bore. When a man marries he is looking for a friend who will not only help him with his career but who will have an intellectual world of her own. In this respect he makes no distinction between himself, a man, and her, a woman.

Women have long since grown used to this attitude. If a girl wants to be popular with men,she knows that she must do interesting work, keep up with current events, read a lot and be knowledgeable. In the early Soviet years, however,there was an overemphasis on intellectual values to the detriment of others. In the early thirties, for example, for a girl to be fashion conscious, have a stylish hairdo, or use lipstick and dress well was considered bad form. This was even more true during the war. Only in the fifties did most women suddenly discover that although they might be naturally pretty,they were less attractive and elegant than they wanted to be. "Beauty" swept the country like wildfire. Newspapers, magazines and television carried fashion notes and photographs and the advice of beauticians, fashion and diet experts. Women flocked to fashion houses and to international fashion shows. More fabrics appeared in the stores; more tailor shops, hairdressing salons and beauty parlors opened. The whole thing started to worry the mothers of teenagers and the serious-minded people of the older generation. They feared this heightened interest in appearance would lead to inner impoverishment, an overconcern with the world of "things." But that did not happen.

Even though Soviet women are much more stylishly dressed now, they have not lost their intellectual and mental beauty. They have learned, as Klara Zetkin, fiery champion of women's equality, put it, "to combine the human and the feminine."



The Three Musketeers



Igor's work demonstrates marked talent, a free-wheeling fantasy and considerable erudition.

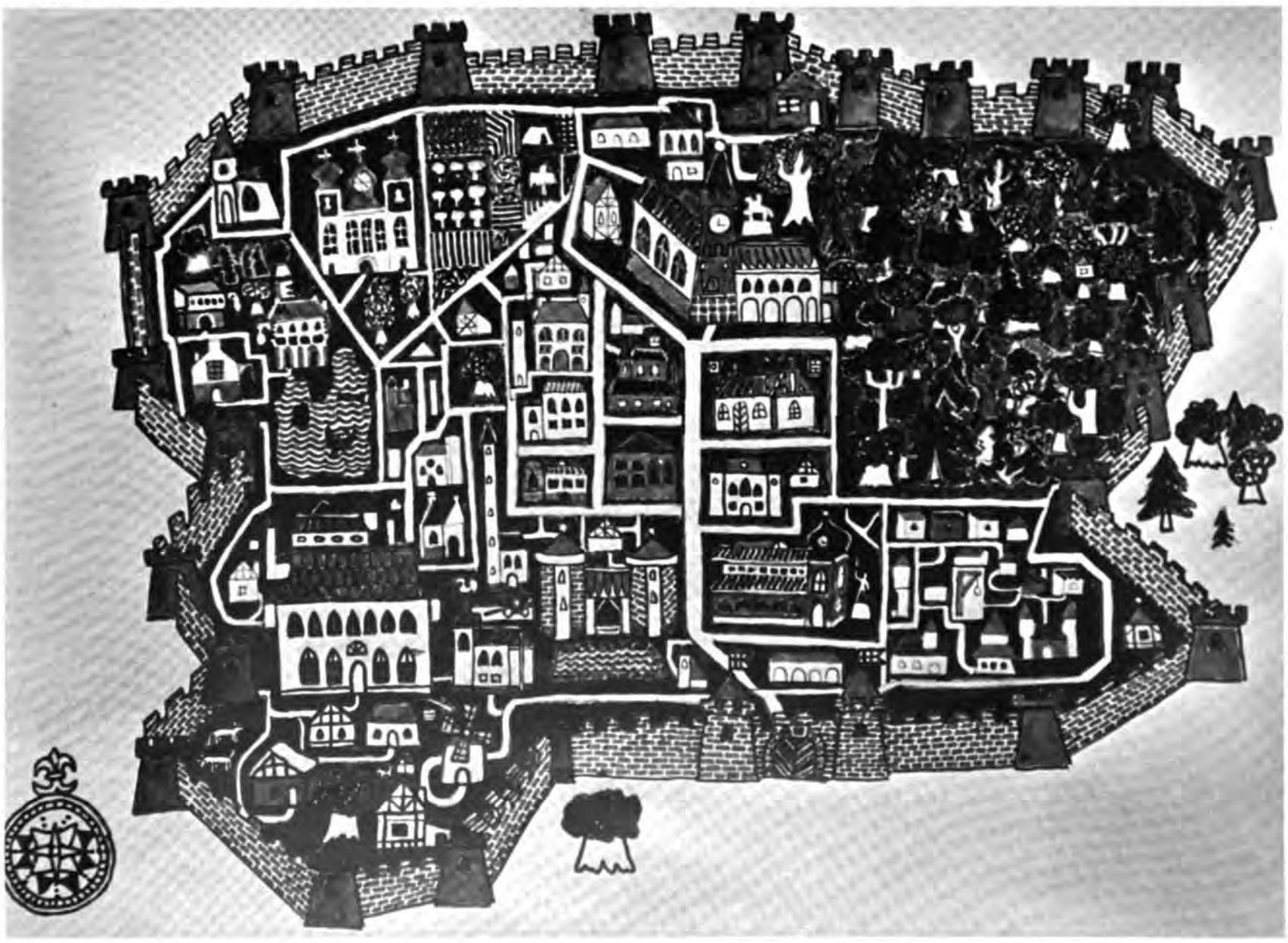
SIBERIA'S 12-YEAR-OLD ARTIST

TWELVE-YEAR-OLD Igor Sokol recently had a one-man show in Novosibirsk, the scientific center of Siberia.

The detailed drawing, the many-planed composition and the color harmony are so mature that it is hard to believe this is a child's work.

Igor has his own heroes, appropriate to his age. His medieval towns are peopled with knights, musketeers, kings and madonnas.

A Medieval City





Imitation of Italian Renaissance Painting

But he is also interested in present-day themes, as we can see from his latest work, *Youth Café,* his impression of the Under the Integral Café in Science Town, which is near Novosibirsk.

Igor works in water color, fountain pen and colored pencil.

He spends many hours on his pictures before showing them to his father, painter Vladimir Sokol, who did frescoes for the interiors of the Institute of Nuclear Physics, the Golden Valley Restaurant and the House of Scientists in Science Town, where the Sokols live.



Pan Playing the Reed Pipes



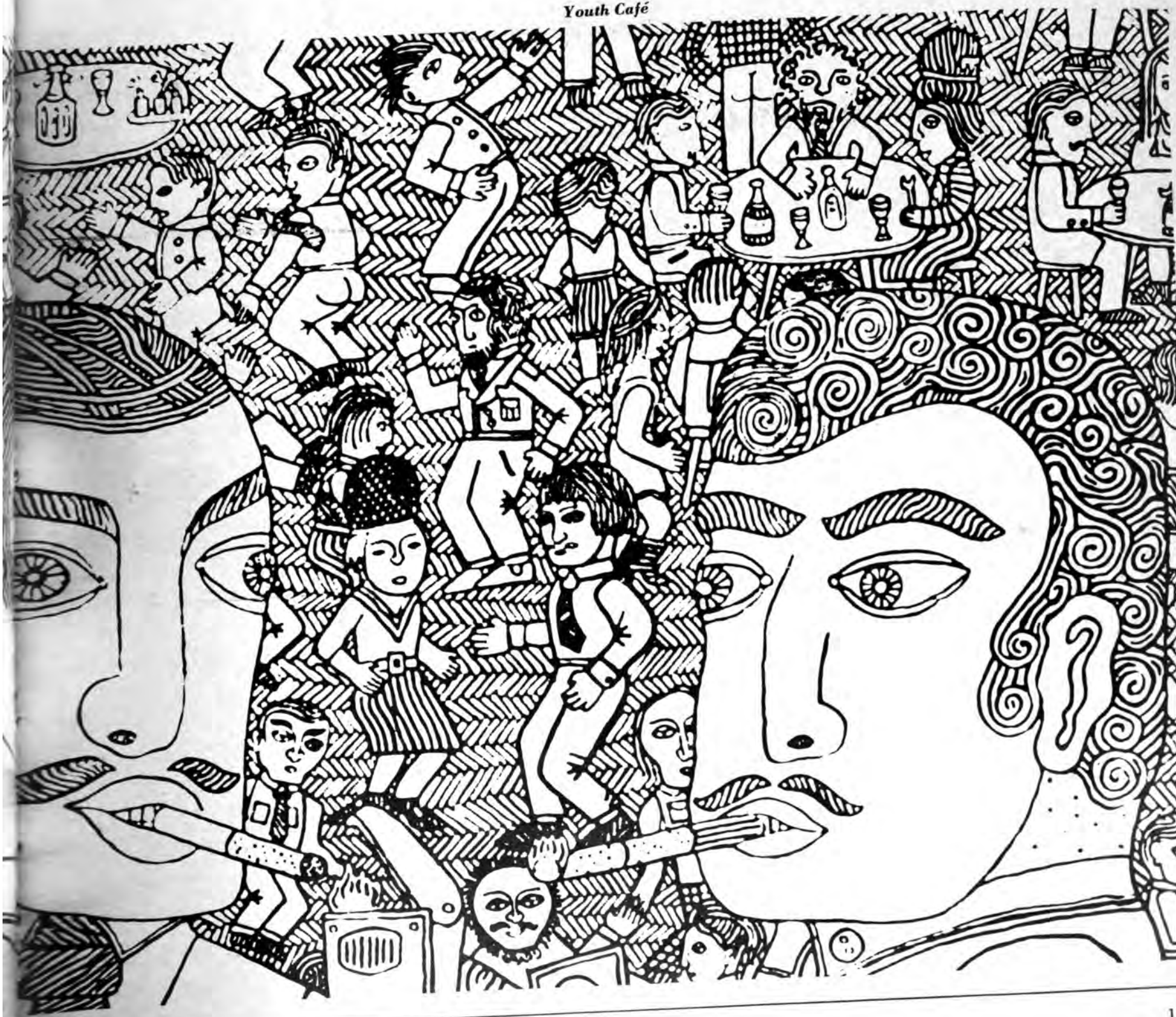


One of the early drawings of this twelve-year-old, inspired by familiar Russian folk tales.

Don Quixote



Youth Café



AROUND the COUNTRY

ELECTRICALLY INDUCED ANESTHESIA

A novel solid-state device for inducing anesthesia by electricity, the NEIP-1, is the invention of Professor Mikhail Kuzin, rector at the Moscow First Medical Institute, and engineer Sergei Agasaryan. The device looks like a typewriter. The anethesiologist taps on the keys, to which electrodes are attached, that send impulses to the patient's brain. In a minute or two the patient is fast asleep.

The NEIP-1 is simple and convenient. It is equipped with several batteries so that it can be used under all conditions. The device itself regulates the dosage.

More than 150 successful operations have been performed at the institute clinic using the device. It is now being manufactured at several factories.



LOBSTERS FOR EXPORT

Lobsters from the Volga-Akhtubinsk floodlands in the Lower Volga are now exported to France, Norway and Finland and shipped to Moscow and other Soviet cities.

Commercial lobstering in this region by collective and state farms is a relatively recent development. After they are caught, the lobsters are washed, sorted, packed in three layers in special boxes, and flown to market. This must all be done in four days, while the lobsters are still fresh.

MEMORIAL FOR A BOXER

In October 1917, when the Revolution broke out in Russia, Sidney L. Jackson, a professional American boxer, was appearing in Uzbekistan, Central Asia. He decided to make Uzbekistan his home and joined those who were fighting to establish the Soviet system.

Jackson was a much admired fighter in the United States. As boxing coach he contributed markedly to the development of sports in Uzbekistan. Many of the boys he trained became well-known Soviet boxers, some of whom fought abroad.

A memorial was set up for Jackson when he died in 1966 at the age of 80. The top Jackson Prize goes to the winner in a weight category up to 112 pounds. Boris Kalchinov of Frunze, Kirghizia, is the latest winner, after bouts in which boxers from many towns in Central Asia and Siberia took part.



SOVIET TRAVELER'S CHECKS

Traveler's checks in denominations of 5, 10, 20, 50 and 100 rubles are now being issued by the USSR Bank for Foreign Trade. They are sold for freely convertible currency to Soviet citizens going abroad and to foreign tourists and businessmen.

Through the use of traveler's checks people can avoid the neea to carry large sums with the danger of loss or theft. The tourist signs each check at the time he buys it. They can be used only by the signer.

Since they are in ruble denominations, the foreign tourists can more easily settle accounts with Soviet organizations for services rendered. The Bank for Foreign Trade traveler's checks are cashed on the territory of the Soviet Union at face value, without charge. Soviet and foreign citizens outside the USSR may exchange the checks for the currency of their respective countries.

The checks are sold and cashed by the Bank in Moscow, a branch of the Bank in Leningrad, branches of the State Bank of the USSR and foreign banks. They are good for a year from the date of purchase. The Bank for Foreign Trade will refund checks that are lost.

More than 50 large foreign banks in the United States, Britain, Belgium, the Federal Republic of Germany, Denmark, Spain, Italy, Canada, France, Sweden, Switzerland, Japan and other countries have concluded agreements with the USSR Bank for Foreign Trade to handle Soviet traveler's checks.

EVERYTHING ABOUT THE WEATHER

A branch of the World Meteorological Center in Moscow has been opened in Obninsk, a suburb of the capital. Hydrometeorological data, chiefly of the Eastern Hemisphere, will be collected and processed there. The complex includes information, computer and oceanographic centers, a communications center, archives, a laboratory building and several other units. Computers in use include the highly productive Ural-14 and Ural-16 models.



BRUIN LIKES MOSCOW BEST

The boon companion of Moscow college student Slava Zmazney is a bear he brought back from Siberia a year and a half ago when the orphaned cub was a month old. Since then Feeshka has accompanied his owner to the farm areas being developed in Kazakhstan and to a ski resort in the Northern Caucasus. But what the bear likes best is to wander around Moscow on Sundays with his master.



ETERNALLY YOUNG UZBEK POET

Thousands of people from all over the Soviet Union and 46 foreign countries gathered in Tashkent, capital of Uzbekistan, Central Asia, to mark the 525th anniversary of the birth of Alisher Navoi, Uzbek poet and scholar.

Navoi's poems have been set to music and his aphorisms have become proverbs. New folk tales have been created around his characters Farkhad and Shirin, Leila and Medjnun, and Dilaram. Operas, musical dramas, motion pictures and stage plays have been built around his poems.



DIAMOND COUNTRY

One of the largest concentrating mills extant went into operation last year in Mirny, a town that has grown into the diamond-mining capital of Yakutia in the past 13 years. The geologists who make up the greater part of the population continue their search for new mineral sources in the forest in which the town is situated.



AROMA INDUSTRY

The Fourth World Congress on Volatile Oils brought more than 700 representatives from 25 countries to Tbilisi, capital of Georgia. For four days they discussed problems of the volatile oils and perfume industry and the production of synthetic and natural fragrant substances.

The next congress will be held in Sao Paulo, Brazil, in March 1971.



UNDERSEA OIL FIELD FIRE FIGHTER

When the alarm sounds, it takes the crew of the fire-fighting ship *Otvazhny* only a few minutes to get moving out to the oil wells in the Caspian Sea. This time it was only a fire drill, but the ship is always in a state of readiness.



NAPOLEON'S WINE

A three-liter bottle of clear wine labeled "France. Bordeaux. 1812" was found on a Byelorussian state farm by a worker digging a foundation pit. Further digging brought to light more than 60 bottles of this 150-year-old wine. When the French were retreating through Byelorussia in 1812 one of Napoleon's commissaries must have hurriedly buried the wine he was carrying.



GALLERY OF ROCK PAINTINGS

Armenian archeologists have discovered a "picture gallery" in the Sevan Mountains, almost 10,000 feet above sea level. The gallery is 1.5 miles long.

The paintings, done on rocks, are several thousand years old. They depict hunting scenes, the taming of wild animals and various rituals. Some of the pictures have between 50 and 70 figures.



CONTEST WINNER

A diploma, a gift from the Central Committee of the Young Communist League, and a prize offered by the newspaper *Komsomolskaya Pravda* went to Kestutis Ibenas, a young man employed at a machine-tool factory in Kaunas, Lithuania. He was the winner in a countrywide contest of young milling machine operators.

A SOCIABLE DOLPHIN

A five-foot dolphin by the name of Alma was the major attraction last summer at the beach at Yevpatoriya, a resort in the Crimea. Alma popped up when called, in the hope of being fed, let herself be patted and had no objection to small children climbing up on her back for a ride.

CAT IN A NEW ROLE

A blue fox died after bearing a litter of 13 at a fur breeding farm in Magadan Region, the Soviet Far East. Eight of the cubs were given to other foxes to raise, and five were turned over to a cat. All five cubs are doing fine with their foster mother.

PLASMA KNIFE

This knife will cut through anything. Made by a group at the Institute of Theoretical and Experimental Physics in Moscow, it produces a fine stream of nitrogen plasma at a temperature three or four times higher than the temperature on the surface of the Sun.

The knife—its identifying number is ITEF-20M—is unequaled for its simple construction, durability and universality, according to the certificate issued by the Committee on Inventions and Discoveries of the USSR Council of Ministers. It can be used to work castings, cut sheet steel almost 13 feet thick, and fashion parts from rolled nonferrous metal. The knife operates with remarkable speed. I will finish a band of 5-inch thick superdense aluminum to perfect smoothness in an hour. It is readily adaptable to both manual and automatic operations.



"THE BLUE BIRD" RETURNS TO ART THEATER

Maeterlinck's famous *The Blue Bird* is back at the Moscow Art Theater. The play was first staged there by Konstantin Stanislavsky sixty years ago. Since then there have been 3,000 performances of the Stanislavsky production. The only change is in the generation of actors.

This year all the roles in *The Blue Bird* are played by the Art Theater's youngest actors.

SUBTERRANEAN OIL FIND

A new subterranean repository of oil has been discovered north of the Arctic Circle near gas deposits that are among the largest in the world. The oil lies at a depth of no more than 2,600 feet. Several days before the Russkaya oil deposits were found, a large gas deposit, the Arkticheskoye, was discovered in the middle of the Yamal Peninsula, north of the 70th parallel. This is the northernmost gas deposit in the country.

WHERE COSMIC RAIN FELL

The Meteorite Committee of the USSR Academy of Sciences has sent a new expedition to the area where an enormous fireball, known as the Sikhote-Alin bolide, fell on the quiet, frosty morning of February 12, 1947.

The bolide exploded while it was still in the air, raining down "drops" that ranged in weight from several tons to a hundredth of a gram over a large area.

Experts on meteorites, minerals and magnets, as well as geologists and chemists from Moscow, Leningrad, Kiev and other cities will study samples of soil containing meteor dust and the structure of the craters formed in the mountain rock where the largest pieces struck. The expedition will also study the magnetic properties of the meteorites and the rock that fell.



EAGLE GUARDS MELONS

The proud, freedom-loving eagle, king of the sky, is hard to tame. But Caucasian grower Alexei Schulga tamed an eagle and trained it to guard his melons against susliks, or ground squirrels.



A CITY 2,750 YEARS OLD

Yerevan, the capital of Armenia, has just celebrated its 2,750th anniversary.

The Arinberd Hill dominates the southeastern outskirts of the town. The walls of the fortress of Erebuni—now Yerevan—were erected here 782 years before the Christian era. This was learned from a cuneiform inscription on a basalt slab: "By the God Khaldi and the might of Argishti, the son of Menua this mighty fortress did build, giving it the name of Erebuni."

The anniversary festivities were attended by many guests from the other union republics, and by Armenians living in France, the USA, Bulgaria, Syria, Lebanon, Argentina and other countries.

UNDERGRADUATE CREATIVITY

Over 700 undergraduates are members of the student research society at the Institute of Chemical Machine Building in Moscow. Student work is exhibited repeatedly at special expositions.

This picture was taken in one of the laboratories of the department of Chemical Equipment Design. Undergraduates Mikhail Arshakuni and Matvey Bulatov are working on an installation for freshening salt water.

SOVIET ASTRONOMER HONORED

For the first time a citizen of a socialist country was elected president of the International Council of Scientific Unions. Academician Victor Ambartsumyan, prominent Soviet astronomer, was chosen to lead the Council for the next two years at the Twelfth General Assembly. The academies of science, scientific centers and scientific societies of more than 60 countries are affiliates of the Council.



RAISING REINDEER

Breeding reindeer is the most profitable farm occupation in the Nenetsk National Area (the north of European Russia). About 150,000 deer graze annually on the great stretches of the Bolshezemelnaya tundra.

REMINDER OF THE WAR

Teenager Volodya Cherepanov doesn't know why he happened to notice the rusty piece of metal that lay in the attic of a shed on Victory Avenue in the town of Yuzhno-Sakhalinsk, Sakhalin Island.

Volodya examined the piece of metal curiously and suddenly realized it was a mine.

Captain Georgi Zhitnitsky, summoned to the shed, said it was a 3.2-inch mine that had lain there more than 20 years. It had no safety valve, so that a careless movement might easily have exploded it. Captain Zhitnitsky got into his car and held the mine out of the window. Somebody drove him several miles out of town, where he detonated it.

HEALTH RESORT IN A CAVE

Experiments and research done by Dr. Vladimir Apostoluk and his assistants have shown that the constant temperature and pressure in the Krivchensk cave in the Ukraine and its unusually pure air, filled with light ions, have a salutary effect on patients suffering from bronchial asthma, high blood pressure and cardiac insufficiency.

At Dr. Apostoluk's suggestion a hospital is to be opened in the cave. Comfortable armchairs and folding cots will be set up in a grotto where patients will spend several hours a day under a doctor's care. They will live at a sanatorium being completed nearby.



LENINGRAD TURBINES

The Leningrad metal works named for the Twenty-Third Congress of the Communist Party of the Soviet Union manufactures 200,000-kilowatt turbines for thermal power stations inside the country and abroad. The plant has just completed tests of a new turbine.



THE GOLDEN STREETS OF KOLYMA

Where don't people find gold in the Kolyma country! Nuggets have been brought up by anglers and dug up by children playing in the sand. A gold nugget was once found in the crop of a rooster. One of the latest finds is a nugget weighing 1.16 ounces. Geologist Valentina Fedorova picked it up on the street in the town of Strelka.

How did it come to be lying there? Easy to explain. When the dirt road was repaired, fresh earth was dumped on it, and Kolyma earth often contains the precious metal.

The largest nugget found along the Kolyma and in the Chukchi Peninsula last year was picked up by a bulldozer operator, Lev Anokhin, at the Gastello gold fields. It weighed 9.6 pounds.



RUSSIAN FIAT

On exhibit at the permanent USSR Exhibition of Economic Achievements in Moscow is the Fiat. It will be manufactured by the automobile plant in the town of Togliatti on the Volga. The car seats four to five passengers, has a 60-horsepower, three-cylinder engine and can travel at speeds up to 87 miles per hour. It averages 26 miles per gallon of gas; the car weighs 2,030 pounds.

HISTORIAN OF BEES

While working on his five-language dictionary on beekeeping, Zurab Makashvili, researcher at an apicultural experimental station near Tbilisi, Georgia, got the idea for a novel dictionary which beekeepers in many countries would be able to use. Each word in the dictionary would be given in 11 languages and illustrated.

Makashvili began his selection of illustrations for the 77,000 words with postage stamps. Then he collected matchbox covers, coins, badges, postcards and envelopes on which bees were depicted. This historian of bees is still collecting material for his dictionary, but it won't be long before we will be leafing through his *History of Bees in Pictures*.

RELIC OF BERING EXPEDITION

Varicolored glass beads, thought to have belonged to one of the Bering expeditions have been found in Komandor Bay on the island that bears the famous 18th century navigator's name. The beads, which have lain in the sand for 227 years, are well preserved.

This particular Bering expedition was exploring the northern part of the Pacific Ocean up to the coast of America, in search of lands lying north of Kamchatka. The expedition carried sacks of beads to be traded for food from the natives. The voyage ended in disaster. The island on which the sailors spent several months after the *St. Peter* was wrecked still shows evidence of their stay.

AROUND the COUNTRY

LITVINOV: BACK IN



HARNESS

SECOND MISSION TO THE UNITED STATES

NOW AT WAR

By Zinovi Sheinis

IN THE JANUARY AND FEBRUARY ISSUES WE PUBLISHED EXCERPTS FROM THE BOOK "MAXIM MAXIMOVICH LITVINOV: REVOLUTIONARY, DIPLOMAT, MAN" BY HISTORIAN ZINOVI SHEINIS, TO BE PUBLISHED SHORTLY. AT THE REQUEST OF OUR READERS WE OFFER ANOTHER CHAPTER, SLIGHTLY ABRIDGED.

WHEN WORLD WAR II BROKE OUT, THIS DISTINGUISHED SOVIET STATESMAN, ENTRUSTED WITH ESTABLISHING DIPLOMATIC RELATIONS WITH THE UNITED STATES IN THE THIRTIES, HAD BEEN RETIRED FOR SOME TIME. SOON AFTER NAZI GERMANY'S ATTACK ON THE SOVIET UNION ON JUNE 22, 1941, LITVINOV RETURNED TO ACTIVE DIPLOMATIC WORK. HE WAS APPOINTED AMBASSADOR TO WASHINGTON.

THE ADVENT of the first autumn of the war saw the Germans advancing along the entire front. In the North they had reached the vicinity of Murmansk; in the South they had overrun almost all of the Ukraine and were driving toward the Caucasus. Their purpose was to take the oil regions and then penetrate the Middle East.

On the Soviet Western Front the situation was critical. Hitler was driving sixty infantry and tank divisions toward Moscow, which he hoped to capture before winter set in. On October 2, after lengthy preparations, the German armies launched an offensive east of Smolensk, bypassed Kalinin from the north and Bryansk from the south, and began hammering at the armies of the Western Front. Vyazma fell and then Gzhatsk. The Germans reached the town of Mozhaisk, the gateway to Moscow, and captured it after furious resistance. They then began a pincers movement against Moscow, took Volokolamsk and stood outside the capital.

On the morning of October 16 Moscow's factories closed down, and crowds of people began to leave the city for the East, getting in the way of military traffic—guns and vehicles of all kinds—on the Gorky Highway. It was impossible to foresee in this turmoil and chaos that in a few weeks fresh Siberian and Urals divisions would reach the capital and deal Hitler's armies a smashing blow. Soon the Germans were to fall back along the whole front, abandoning their weapons and leaving behind numberless bodies of their officers and men. The Red Army was about to frustrate Hitler's maniac plan right there, at the gates of Moscow, where he was on the verge of reaching his goal.

On the evening of October 16 Litvinov left Moscow for Kuibyshev. The trip was a long one, six days and nights. The train was slow, made frequent stops, waited for hours at stations, letting army trains pass westward. The stations were invariably jammed.

By the end of October a number of People's Commissariats and other central government agencies were working from Kuibyshev, among them a group from the Foreign Affairs Commissariat. The city was packed with evacués, and the Litvinov family had to live in a tiny apartment, together with his private secretary Anastasya Petrova.

In the evening acquaintances and friends would drop in. They included the writer Ilya Ehrenburg, who lived across the street, and the diplomats Konstantin Umansky and Yevgeni Rubinin. Umansky had been recalled from Washington but did not know when he would return. He was eagerly awaiting the order to fly back to the States. Following the occupation of Belgium, Yevgeni Rubinin, the Soviet ambassador there, had returned to the Soviet Union and was now living in Kuibyshev.

There was an abrupt change in Litvinov's life in November 1941.

Late one evening Molotov telephoned from Moscow to the Foreign Affairs Commissariat and asked the official on duty there whether he knew where Litvinov was living. Receiving an affirmative answer, Molotov went on, "Listen carefully. Go to Litvinov immediately and tell him that I am acting on instructions from Comrade Stalin. Tell Litvinov that he has been appointed People's Vice Commissar of Foreign Affairs and Ambassador of the Soviet Union to the United States of America."

Litvinov informed his family that he was back in harness and left

by plane for Moscow the next day. The flight is described in the reminiscences of Nikolai Palgunov, former Director General of TASS, who was also called to Moscow:

> We left Kuibyshev at about 11:00 a.m. November 9 on a passenger plane that was filled to capacity. It was equipped with a revolving machine-gun turret, which was manned by a gunner and radio operator soon after we started. Among the passengers were Maxim Litvinov, just appointed Soviet Ambassador to the USA, two generals, myself and Vladimir Kozhemyachko, an official of the Press Department of the Foreign Affairs Commissariat, and several officials of the Council of People's Commissars. As we approached Noginsk, the pilot was instructed to turn back because Noginsk was being heavily bombed by the Germans. We were flying at almost treetop level when a new order came for us to wait a few minutes because the Germans were apparently leaving. We circled in the semidarkness over the woods until another radio message informed us that the Germans were now bombing the Noginsk-Moscow Highway and that we could land in Noginsk.
>
> We landed on a field that had been plastered with bombs. Fifteen minutes later we were in a Moscow-bound bus. The road was untouched, but nazi planes were flying overhead. When it grew quite dark, the Germans began to use flares which lit up the scene. We heard anti-aircraft fire in the distance and from time to time the explosions of German bombs nearby.
>
> It was pitch dark when we reached Moscow late in the evening. Overhead we could hear the drone of aircraft and the alarm sounding.

It was three weeks since Litvinov had left the capital. The city was much changed, stripped down and military. Its boulevards, once full of children playing in the snow and tobogganing down snow hills, were deserted. The streets were now full of marching soldiers, and trucks were placing barrage balloons in position. There was a quiet warlike air about the city. At factories and workshops, at railway stations, on highways full of marching troops, in the dugouts near Perkhushkovo where General Georgi Zhukov had his headquarters —everywhere an unceasing and complex effort was under way. The vast array was being synchronized into the mighty and precise blow that was soon to hurl back the nazi hordes from the capital, upset all of Hitler's calculations and usher in the beginning of the Red Army's victorious advance to the shores of the Elbe.

Litvinov arrived at the Kremlin at the appointed time and was immediately received by Stalin. The months of war had left their mark on Stalin's face. His severe and reserved expression had grown even gloomier, and there were dark circles under his eyes. He greeted Litvinov warmly. Stalin was wearing his usual semimilitary uniform, Litvinov the same jacket he had worn to a diplomatic reception in the first days of the war.

Molotov sat some distance off, in silence.

Stalin and Litvinov sat down across from each other. Stalin said nothing about the past, as though there had never been that May night in 1939 when Litvinov had been told he was no longer a member of the Central Committee. Stalin was not in the habit of explaining his actions. That was not the only reason he made no reference to the past. He knew Litvinov very well; indeed, they had known each other for almost forty years. He got down to business at once. In his colorless voice he formulated Litvinov's mission; it was to get the Americans to enter the war as soon as possible. He, Stalin, was aware of the difficulties confronting Roosevelt.

Litvinov sat in silence, looking Stalin straight in the eye. Then he asked him about the situation at the front. He would have to do a great deal of speaking in America and would have to be kept informed.

Stalin promised to do so. War deliveries, he said, were important, particularly while Soviet industry was being reorganized. That matter would require much attention.

The main questions disposed of, Litvinov asked what Ambassador Umansky would be doing. Stalin looked at Molotov and said: "We'll find him a job." Molotov agreed, adding that Umansky would be kept busy. Realizing that this was a moment of decision for a man he thought a capable diplomat, Litvinov said to Stalin: "I understand that Umansky is to remain here as a member of the Collegium of the Commissariat of Foreign Affairs."

"Yes, as a member of the Collegium," Stalin replied, and Molotov nodded in agreement. Before leaving, Litvinov asked Stalin whom he could take with him to the States.

"Take anybody you want," Stalin replied, and wished Litvinov a safe journey.

The Eve of Pearl Harbor

Normally, it is 4,350 miles across the Pacific Ocean from Asia to America, but the flight from Kuibyshev to Washington was almost double that, 8,000 miles, in a gigantic arc across Asia, touching Astrakhan, Baku, Teheran, Baghdad, Calcutta, Singapore, the Philippines and Hawaii. From Iraq to San Francisco Litvinov traveled by seaplane.

This roundabout route was made necessary by the war. The Atlantic was no longer usable.

Litvinov, his wife and his secretary left Kuibyshev on November 12, 1941. From the Volga city they flew on a Douglas equipped with machine guns to Astrakhan, Baku and Pahlevi-Teheran, where a British warplane awaited them.

For the first time Litvinov saw at close range this part of the world, with its extremes of fabulous wealth and immeasurable poverty. At Government House in Calcutta, where the wife of Governor General Herbert gave a splendid party in his honor, everything followed a routine established a century ago—stately reception rooms, servants bowing low, elegantly dressed women, Hindus cooling the air with punkahs. In 1941 those who ruled this jewel in the British crown had no idea that a storm was soon to sweep over India.

Mrs. Herbert chatted with Litvinov, trying to impress him with her grasp of politics: "Mr. Litvinov, I have heard that the Russian government is on excellent terms with its natives. How were you able to solve the colonial question? I understand the Uzbeks simply love the Russians. I must tell my husband to make a study of your methods of solving the colonial question."

After a brief stopover in India Litvinov flew to Bangkok by seaplane where he was met with the traditional garlands and cordial greetings. He was addressed in Russian by a representative of the Siamese Government who had once been an army cadet in Russia. There was another surprise in store. While the official speeches were in progress, Litvinov noticed a group of Buddhist monks in their orange robes standing to the side. All of them had long red beards. After greeting the diplomats and public figures, Litvinov went up to the monks to greet them. As he did, they pulled their hands out of their voluminous sleeves and addressed him in pure Russian with the words: "Long live the great Soviet Union! Long live the heroic Red Army!"

They were Latvians who had converted to Buddhism in prerevolutionary Russia and had been living in hermit cells at the Buddhist temple in St. Petersburg, then the capital. They had emigrated after the Revolution, since they did not know how Buddhists would be treated in the Soviet Union, and had ended up in Bangkok. The monks expressed a lively interest in the affairs of their former homeland and spoke admiringly of the Red Army. This was not to the liking of the local authorities, and some time later a monk who had been outspoken in his praise for the Soviet Union paid for it with his life: He was found drowned.

A Japanese attack was to be expected at any moment in Indochina, for the battlefronts were creeping up to this part of the world. The negligence of the local civil and military authorities was incredible.

In Singapore the general in command of the British garrison claimed that the fortress was impregnable, a claim repeated by the British press. Though a civilian, Litvinov could not help asking the Governor General why no civil defense training was being offered and why there were no signs of preparations to repel attack. He was assured that the fortress was in a state of full combat readiness.

When the Japanese attacked Singapore, the fortress capitulated almost at once. It did not even have a sufficient supply of water.

This lack of concern was also evident in the Philippines and even at the American naval bases on Wake Island and Midway Island.

The island of Guam was the last stopover before Hawaii, from where he would make a nonstop flight by seaplane. Here war preparations were in evidence. Officers' families were being evacuated to the United States, though nobody seemed to believe that the war would reach this distant corner of the world.

After a brief stay on Guam, Litvinov set out for Honolulu, where he was met with blue skies and breathtaking tropical vegetation. The entire American garrison seemed to be quite undisturbed.

The general in command was most affable, inquired about the situation in Europe, but shrugged off the questions the Soviet diplomat had been asking on all his Pacific stopovers: Why there was no blackout and why there was so little concern about the possibility of an enemy attack. He did not seem the least bit worried. This was December 4, and in a matter of days Pearl Harbor was to become the graveyard of 3,000 Americans and many American warships.

The next day Litvinov took off from Honolulu on board the last passenger plane to leave.

A Second Front Is Needed

On his arrival in Washington, Litvinov was met by a great crowd

that included representatives of the State Department, the press, cameramen and even Joseph Davies, former ambassador to Moscow. This was no stiff and formal reception but a colorful scene, with writers, artists, businessmen and clerks from federal offices and private firms bringing flowers. Litvinov was asked for an interview but he stepped straight up to the microphone. "My first visit to this capital," he said "took place at a most vital moment. This time I have come at an even more vital time, when the fate of all peoples, of all mankind, is at stake. I know with what tremendous interest and sympathy the American people are watching events on the Eastern Front. I can assure the American people that the Red Army and all the armed forces of the Soviet Union will continue to carry on the struggle against Hitler Germany with the same stubbornness and courage that have evoked approval and admiration throughout the world."

Several hours after Litvinov's arrival an event took place which might have been expected. The radio network interrupted broadcasts to inform the country that the Japanese had attacked Pearl Harbor and were bombing Honolulu.

Events were moving at headlong speed. Secretary of the Navy Knox reported the losses at Pearl Harbor: the battleship *Arizona,* five other warships and about 3,000 naval officers and men.

All America waited for news from the Pacific theater. Congress was addressed by the President, whose every sentence was a hammer blow. He said that many Americans had lost their lives and that reports had been received of American ships torpedoed on the high seas between San Francisco and Honolulu. The preceding night Japanese forces had attacked Malaya, Guam, the Philippines and Wake Island. Midway had been attacked that very morning. Roosevelt asked Congress to declare a state of war between the United States and the Japanese Empire as of December 7, 1941.

The Americans had learned that the Pacific and the Atlantic Oceans were no longer wide enough to keep them out of the war.

Litvinov was literally inundated with welcoming letters and telegrams. He was deeply moved by these messages and pleased at the popularity of the Soviet Union. How times had changed! On his first visit eight years before, many Americans had held greatly distorted views of the Soviet Union. Industrialization had only just begun, and mighty capitalist America was frankly skeptical of the Bolsheviks' fantastic plans. Roosevelt, however, proved more farsighted and practical.

Only eight years had passed, and now Russia was saving not only itself but the whole world. Litvinov was always being stopped by people in the street who would slap him on the back and say: "You must be Mr. Litvinov! I saw your picture in the papers." The Red Army was winning universal admiration. But this was only the beginning. Litvinov knew the kind of struggle that lay ahead and how hard it would be to get friendly Americans moving and to force the hostile ones back.

He was invited to the White House on December 8 and went there in the hope that he would be able to establish the kind of contact with President Roosevelt that was more than protocol. He knew that the President had many opponents in Congress, isolationists who would block his every effort.

Though obviously fatigued by his speeches to Congress and on the radio, Roosevelt was very friendly. He tried to be affable and optimistic, but he could not hide his concern over the Japanese attack. The presidential schedule was tight, and the official ceremony to accept Litvinov's Letters of Credence began at once. Newsmen were besieging the White House, the cameramen had switched on their klieg lights, and the radio stations stood ready to broadcast the official announcement of the ceremony.

Litvinov was tired after his long trip; his eyes burned and his heart was giving him trouble, but here, as in San Francisco and at the Washington airport, he was thinking of how the war had reached the coast of America and of the struggle that would now be waged in common. He made this the theme of his speech, speaking of the threat to the world presented by "the criminal program drawn up in advance by Hitler for the destruction of the political and economic independence of all lands and the enslavement of all peoples."

Indeed, of all peoples. Let nobody think that one could stand aside. The Soviet Union was bearing the brunt of the struggle. The attack against America, Litvinov said, was engendered by the selfsame ideology of fascism.

Roosevelt was obviously pleased with the speech; he liked the parallel Litvinov had drawn between the German attack against the Soviet Union and the Japanese attack against the United States. That was something not every diplomat would do. Japan was not at war with Russia, but its forces stood poised in the Far East to deal the blow. It was good that Litvinov had given that candid an appraisal of the Japanese aggression. Roosevelt wanted to know whether Litvinov had made the statement on instructions from Stalin or on his own initiative. He had hardly been able to get instructions from Moscow, events had moved so rapidly.

It was now the President's turn to speak. He began by giving his opinion of the Soviet diplomat. He said it was a good thing in those tragic days, when the preservation of mutual understanding and confidence between the Soviet Union and the United States was so critical, not only for the two countries but for the future of mankind, that the Soviet Government had seen fit to send as its representative to the United States a statesman who had already held such high office in his own country. He went on to note that Litvinov was entering on his duties on a historic day—America would now be fighting against Germany.

After the official ceremony the President had a long talk with Litvinov, who informed him of the situation on the battlefronts.

The correspondents who were besieging the White House were told there would be no communiqué on the talks between the two men.

As Litvinov was leaving, Roosevelt said to him in a most friendly way: "Max, come over with your wife this evening for a game of bridge. Mrs. Roosevelt and I will be glad to have you."

Ten days after his call at the White House, Litvinov wrote to his son and daughter in Moscow: "I am very busy. I have to pay many visits and receive hosts of people. There is no time for walks or rest. I get awfully tired by evening and don't get enough sleep. An ambassador to Washington has to do twice as much work as in any other capital, and besides, it is such a crucial time. I sometimes think that I have undertaken a task that is beyond my strength and too much for my years. . . . I tried to go to a concert at the invitation of Egon Petri, but after the first number I was summoned to the President. I have already seen him four times."

Neither his age, his health, which had been undermined by decades of tension, nor his temporary absence from diplomatic work could prevent Litvinov from again becoming a leading statesman, not merely an ambassador to Washington. Upon him fell the burden of inducing that great country, with its mighty resources and its complex interplay of political forces, to play its part in the struggle against nazi Germany and, moreover, to play its full part.

Very soon Litvinov had to fly to New York to speak at a Madison Square Garden meeting called by Russian War Relief. The huge hall with its 15,284 seats was filled to capacity; there was not even standing room. In front of the platform stood a guard of honor from the Women's Auxiliary Corps, handpicked, in uniforms designed by Dior.

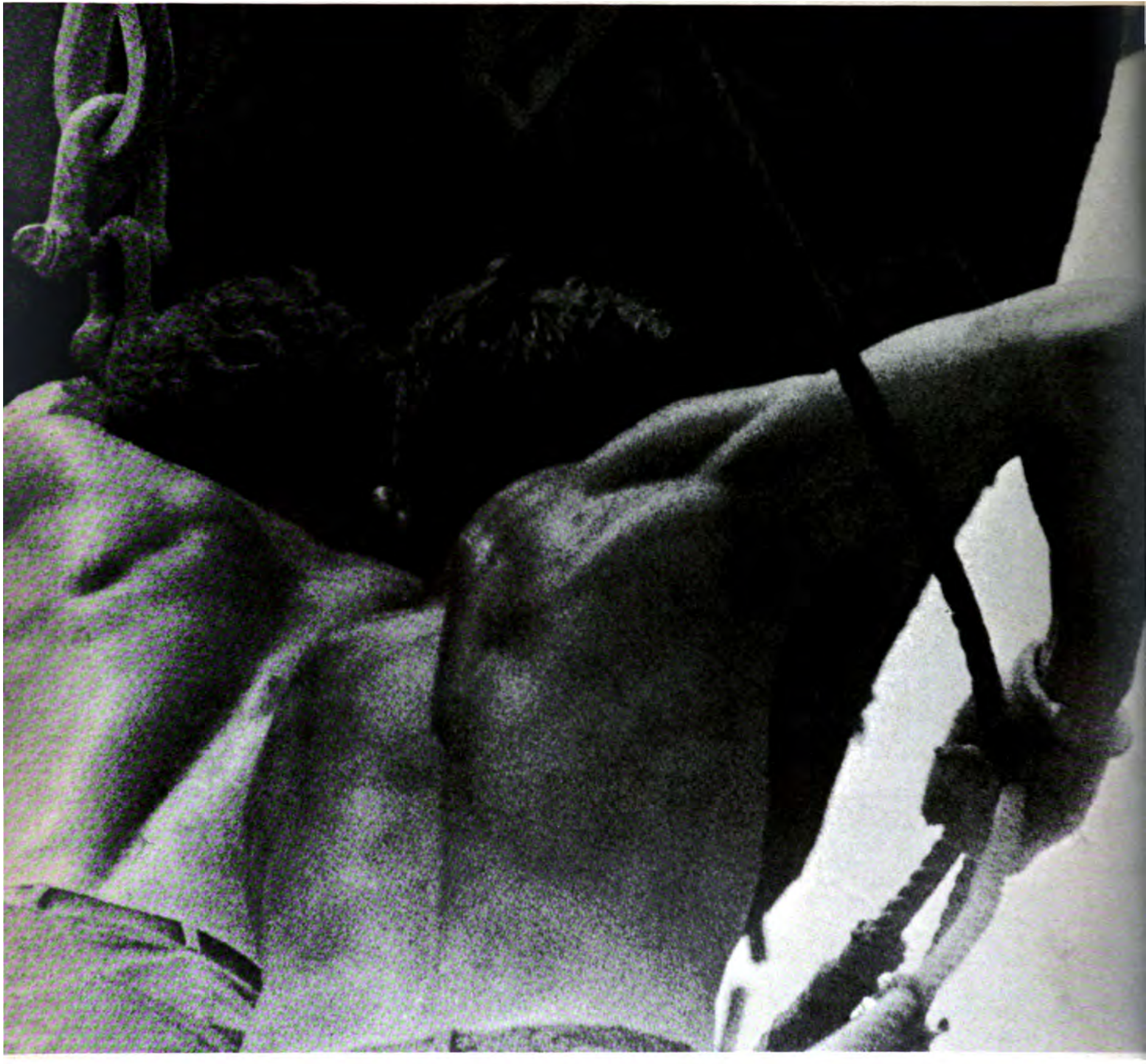
With every fiber of his being and every particle of his old and tired heart, he felt linked with his homeland. His thoughts were far away, on the snow-covered plains around Moscow, where the army of General Zhukov had begun the offensive. He stood shoulder to shoulder with them. He was again in harness, and would fire his own salvos.

He went to the microphone. When had he last addressed an audience? In Geneva some years back. He began to speak in English, without either interpreter or notes. One telling sentence followed another, each making its impact. "My homeland, the Soviet Union, is locked in mortal struggle against the fascist hordes. . . ."

He spoke of the sufferings of the people of Smolensk and the Ukraine, the sacked Byelorussian villages, the massacred children, dishonored girls, and the soldiers who hurled themselves, grenade in hand, under the tracks of German tanks.

The vast auditorium was silent. Then someone burst into tears. A woman in the first row ran up to the platform, tore a diamond necklace from her neck and threw it at Litvinov's feet. Her example was followed by a second woman and then a third, and soon there was a rain of diamond rings and bracelets. The first check was sent up, followed by another and then by hundreds of them. A man cried out, "Here's my contribution," waving a check for 15,000 dollars. The pile of checks grew, with girls from the guard of honor passing them on to the platform. Madison Square Garden was one great surge of feeling.

Litvinov went on, "Ladies and gentlemen, a second front is needed!"



THE OCEANS OF THE WORLD are a major source of food. Scientists and demographers of many countries and of the United Nations agencies concerned have been investigating their possibilities. Indeed, the oceans may appreciably reduce the disproportion between the population explosion and the much lower rate of farm production increase.

The oceans have a productive layer, if we can call it that, of more than 650 feet; dry ground has only a 6.5-foot equivalent. Though estimates of biological productivity vary by a rather wide range, there is no doubt that the present catch of fish and other seafood is far from the limit. The well-known Soviet oceanographer Lev Zenkevich believes, for instance, that we are getting only a tenth of the fish—though fish is not the only food the ocean can provide. Algae and the many invertebrate varieties of marine life—squid being the most promising—would add another 40 to 50 per cent. More intensive exploitation of these resources would not only increase our food supply by millions of tons, but would also help to reduce the fish catch and thus benefit reproduction.

All fishing areas up to depths of 650 to 800 feet, within the coastal shallows or the so-called continental shelf, are known. Since any sizable unexplored areas here are not likely, fishermen have been striking out into deeper areas, to depths of 5,000 feet, and have already added from 3 to 4 per cent to the over-all sea-fishing catch.

PHOTOGRAPHS BY GENNADI SCHERBAKOV



FISHING THE ATLANTIC



Sea Shepherds Round Up Swimming Flocks

The need for larger catches is serving to extend the geography of fishing pastures and to revolutionize fishing techniques—a process observable in the USSR, too.

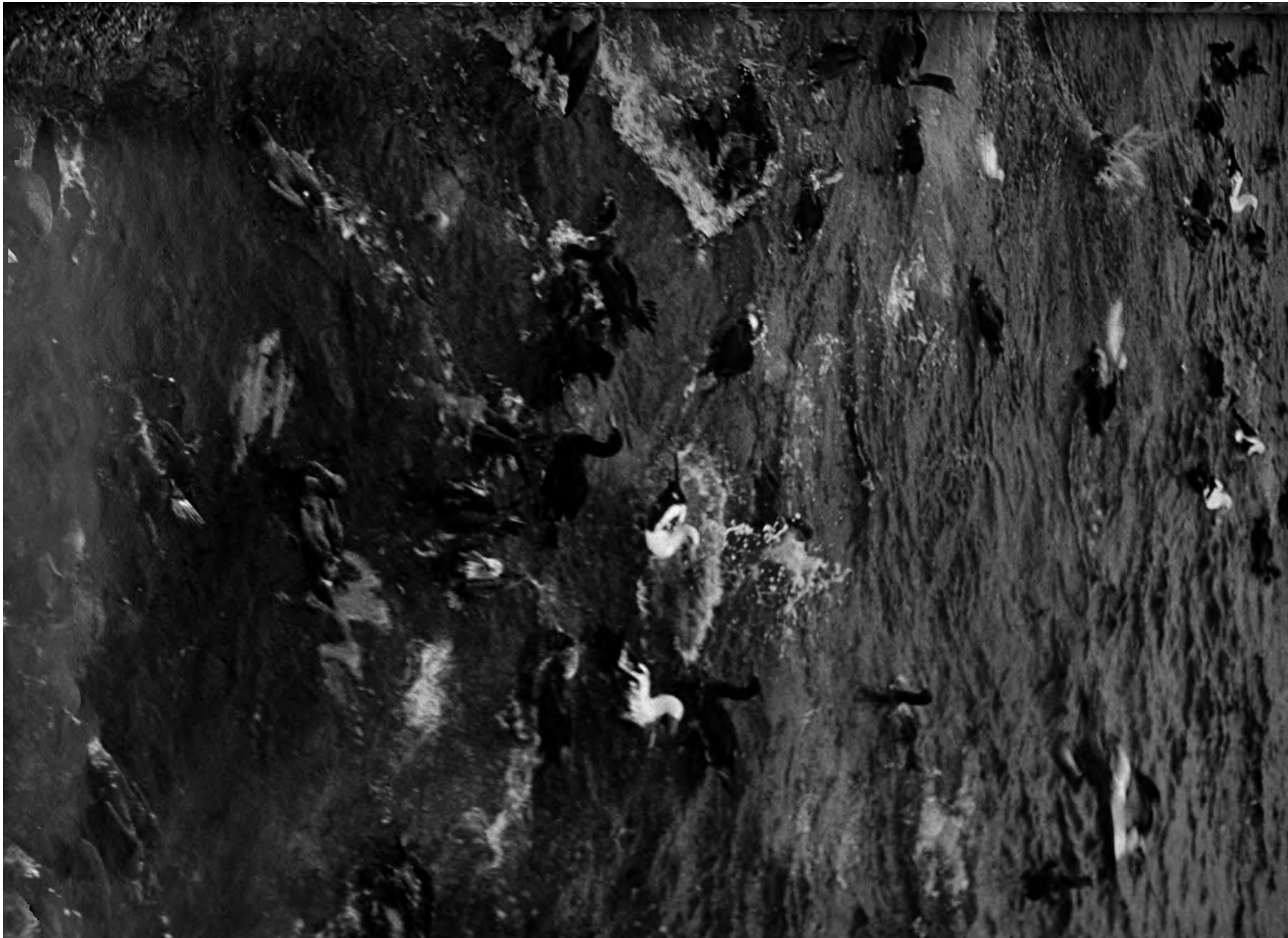
A little more than ten years ago Soviet fishermen, who had hitherto traditionally fished the Arctic and Pacific Oceans, began to work the South and equatorial Atlantic and Indian Oceans. Over this period new refrigerated trawlers, capable of making autonomous voyages of several months, duration, were added to the fishing fleet. Today we have scores of thousands of vessels of various types—we hold second place in the world for overall number and first place for the number of large refrigerated trawlers that process their entire catch aboard. As impressive in size and performance as the huge floating factories of the type of the 16,000-ton "Natalia Kovshova" are the tuna-catching "motherships," which carry up to eight sloops that go out for several days and return only to deliver their catch. These big ships come back to port with a fully processed cargo which goes straight to the consumer.

The 7,100,000 tons of fish to be caught this year vary greatly, from the traditional Russian herring caught in the North Atlantic and dressed according to age-old recipes, Barents halibut and Pacific salmon to such relative novelties for Russians as hake, tuna fish and cusk. Nor are canned squid, frozen shrimp, canned algae and lobster claws rarities in Soviet shops today.

The preparation for our fish dinners all begins on the salty decks of ocean-rusted ships, often known as "tillers of the sea"—an appropriate name if we think of the ocean as one vast pasture.

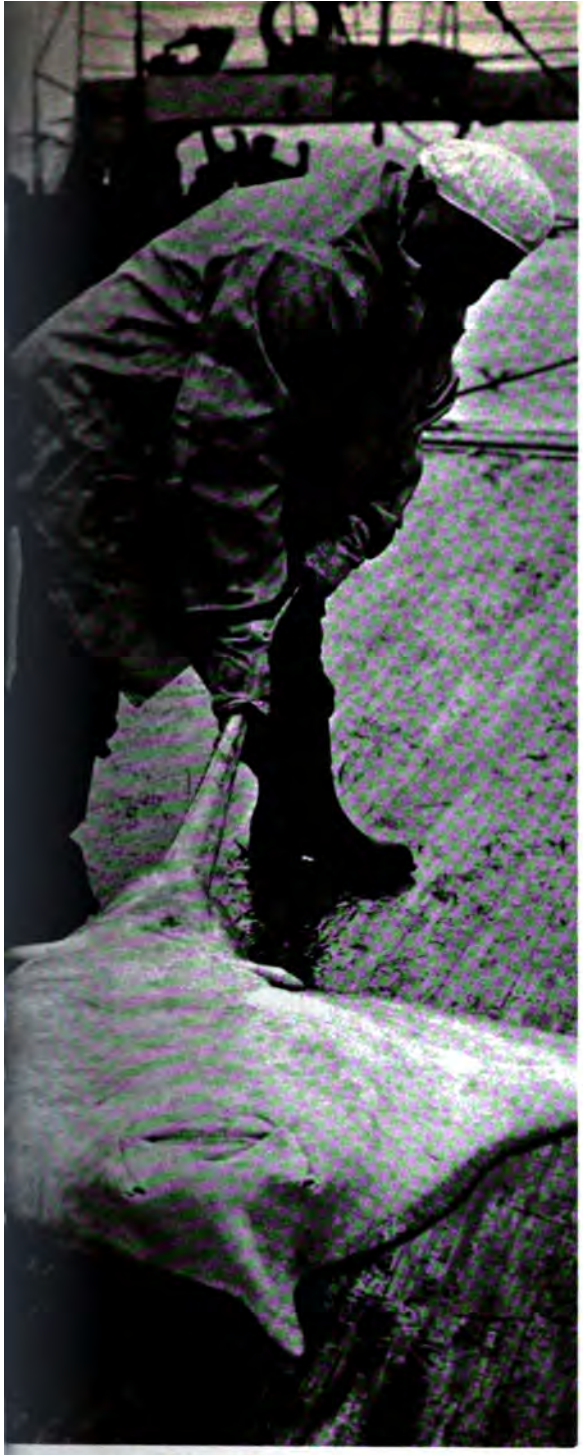


Tit for tat: Gulls and other birds prey on fish, but they also pilot the boats to the shoals.



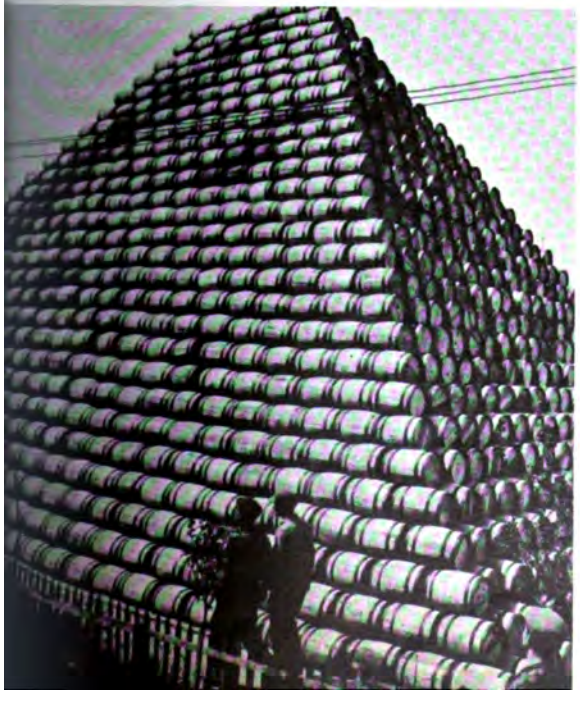
Big refrigerated ships return with a fully processed cargo that goes straight to the consumer.











(Top) Every so often there's an ugly but interesting underwater monster in the net.

(Center) Though far from elegant, trawlers have an honored place in the seagoing hierarchy.

(Bottom) Barrels of salted fish by the pyramid for the dining table of the gourmet.

Seaways Are Good Because They End On Land


ANCIENT RYAZAN TREASURES
BY VLADISLAV DARKEVICH
Master of Science (History)
Photographs by Yuri Neskvernov







The first bracelet shows, in its middle arch, under two birds, a *gusli* player strumming the five-stringed instrument resting in his lap. He is dressed like the typical clown of the period, in a richly ornamented shirt and fancy high boots. On his right is another clown, with a cup in one hand and a flutelike instrument in the other. Such pipes of reed or wood were used by many peoples, including the Slavs.

To the left of the *gusli* player a dancer drinks from a cup. She wears a *panyova*, an outer skirt and an apron over a long-sleeved blouse. From samples of twelfth



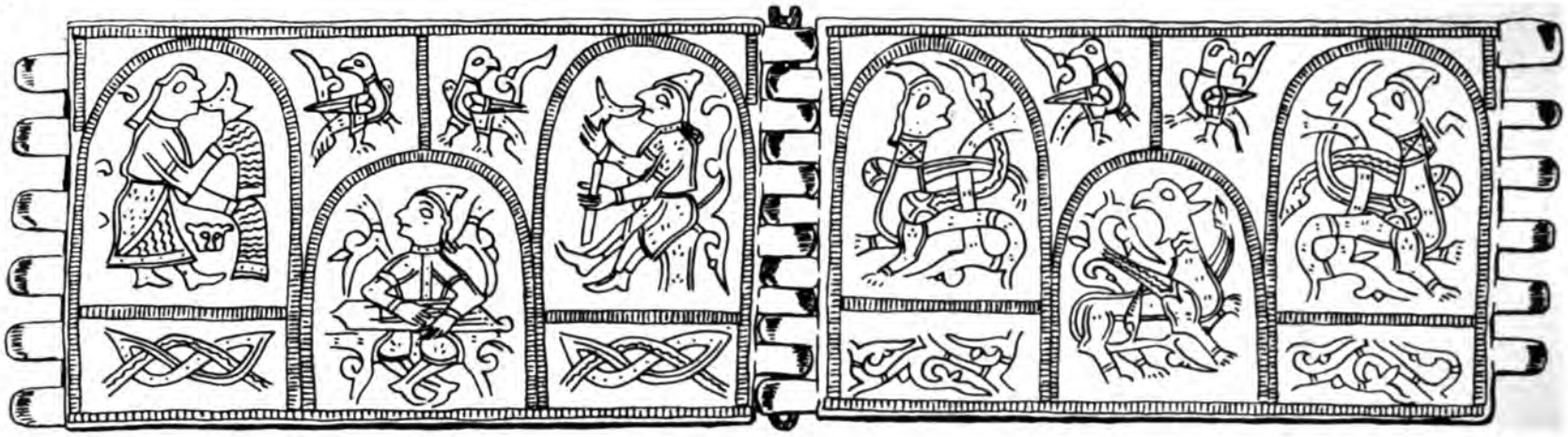
to fifteenth century art we know that dancers, both men and women, customarily wore blouses with very long and broad sleeves in Russia, as well as in Byzantium, Bulgaria, Armenia, Georgia, Serbia and Persia. At the dancer's feet is an animal mask indicating the ritual character of the dance. Mask games were played at folk festivals.

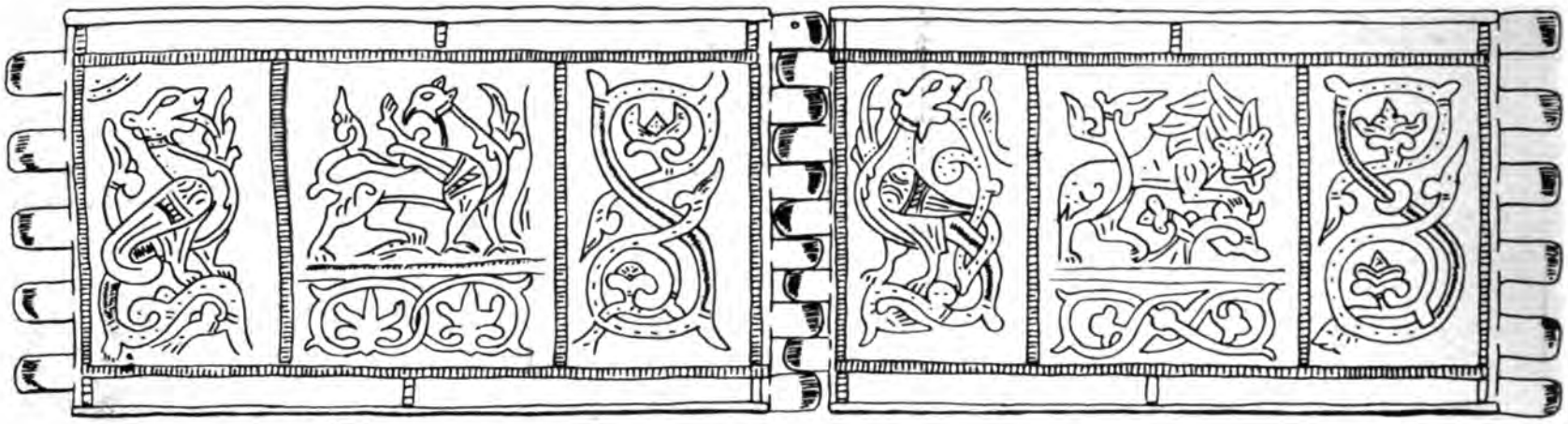
Thus the scene represented on the bracelet is one of the "clown plays" denounced by the Greek Orthodox clergy. However, pagan rites hung on, especially in the Vyatichi country where the Ryazan prin-



cipality was located. Mimes performed at funeral feasts and wedding parties and at the summer and winter peasant festivals. Nor could a prince's feast get along without them. Engraved on the other fold of the bracelet are a griffin, two birds and two creatures with a man's head, bird's body and snake's tail.

The second bracelet shows dragons, griffins, lions and plants set in rectangular frames. Exotic animals were common in old Russian stone sculpture, applied art and book ornamentation of the twelfth and thirteenth centuries.















IN 1223 Tatar Mongol hordes led by Batu Khan routed the Russians in the battle on the Kalka. Torn by internal strife, Russia could not fight off the invaders. They burned cities, killed or took captive those who were not able to escape and destroyed works of art. The country was thrown back centuries.

Old Ryazan, a large Russian town on the Oka (120 miles southeast of Moscow), the center of the Ryazan principality, shared the fate of the country. In December 1237 it was besieged, taken, burned down and its people exterminated. Only the huge ramparts, once edged with log walls and turrets, and deep moats overgrown with grass stand as mute witnesses to the tragedy.

The first archeological excavation of the ancient Russian city was done in 1836 and resumed from time to time. But Old Ryazan is so big that archeologically it is still practically untapped area.

In the summer of 1966 our expedition, headed by historian Alexander Mongait, began digging some 30 miles from the modern city of Ryazan (the old Ryazan site is an archeological preserve). The decision to resume excavation had been made for two reasons. First, it could shed light on such questions as the relations between the indigenous population who had lived on the middle Oka in the first millennium A.D. and the Slavs and other tribes who colonized the area in the ninth and tenth centuries. Second, ravines are encroaching on Old Ryazan, the high bank is being washed away by the river's spring floods and some sections of the old city would have been lost to science unless immediate action was taken.

We made our first major breakthrough as we excavated the Shatrishche burial place behind the ramparts of Old Ryazan. It was used by the indigenous people, ancestors of the Mordvinians of today and predecessors of the Slavs, who pushed them out or absorbed them. They were equestrian shepherds, well armed to protect their herds. We found a sword, spearheads, shafts, daggers and harnesses. Their women were fond of copper ornaments: bracelets, neckrings, clasps and especially pendants which, sewed on their clothes, tinkled as they moved about. The burial place was large; it had been used for several centuries. We excavated part of the seventh to ninth century section, a period of special interest since it was then that the population changed with the arrival of the people who later founded Old Ryazan.

The main object of our research, however, was the Russian city of the eleventh to thirteenth centuries. For that time Old Ryazan was a metropolis, a center of trade, handicraft and culture for northeast Rus. It might very well have vied later with cities like Novgorod, Kiev or Chernigov. But these cities have lived through the invasion, while Old Ryazan was destroyed in the thirteenth century and was never rebuilt. Its chronicles were destroyed along with the city, and so we can study its history only from references in national chronicles and from archeological data. The excavation of Old Ryazan is therefore virtually the only source for re-creating its history.

We unearthed dugout dwellings and workshops and found thousands of artifacts that filled in our picture of life in the ancient Russian city. Literally every minute we came across an object or fragment buried for 700 to 800 years.

On the higher, steep bank of the Oka we uncovered the remains of a large building with log walls and an earth floor. Utensils, fragments of eastern glass and clay vessels, a seal ring, a book clasp, bronze vessels and silver plates from necklaces all indicate that the structure was a palace. This was also confirmed by a small but interesting hoard of silver ingots and women's ornaments that were wrapped in a piece of canvas and buried not very deeply near the building. Neither the noble owner nor anyone else was destined to retrieve the treasure for another seven centuries.

The cache contains two ingots of silver, one hexagonal, the other elongated. In Rus ingots of silver were large money units from the twelfth century. Hexagonal ingots circulated in the southern principalities and were therefore known as Kiev coins. Elongated sticks of silver were used in the north of Rus, Novgorod in particular.

The jewelry includes two bracelets of twisted silver and a pair of broad silver bracelets known as *naruchi.* They were worn over the long loose sleeves of a dancer's dress and were taken off when she danced. The *naruchi,* a jeweler's masterpiece of ancient Rus, are a real find. They consist of two jointed semicircles. Figures of people, animals and birds are engraved on a black background and framed with arches and rectangles of gilded wire, three on each semicircle. The eyes of the figures are touched up with niello, and a lackluster black background sets off the silvery figures and the gilded frames.

The find is also significant because the bracelets depict lay themes, while previous art finds are mostly religious.

BOY OR GIRL—
NO GUESSWORK

BY BORIS ASTAUROV
Academician

Science has been searching for ways of artificially controlling the sex of progeny before birth. This research has the vital medical goal of eradicating sex-linked hereditary defects and the economic goal of predetermining the sex of livestock. Interesting results were recently obtained by D. Robert Edwards and Richard Gardner of Cambridge University. Instead of seeking for methods of controlling sex at the fertilization stage, they suggest that the sex of very early embryos be controlled by extracting them from the mother's body. After examination and selection, the extracted embryos are returned to the mother or to another female which then becomes a foster mother. Their experiments were done with animals. In this article, reprinted from *Literaturnaya Gazeta*, Academician Boris Astaurov of the USSR Academy of Sciences comments on the work of the British scientists.

It would be of very considerable practical value if we knew how to obtain progeny of a given sex in many species of mammals, birds, fish and even insects. Only in one economically important species—the lowly silkworm that produces natural silk—have we solved the problem enough to apply it in practice. The solution has large theoretical interest since it points the way to working with other species, but in this we are only at the very beginning.

It would really be fascinating to be able to control the sex of our most important domestic animals—the suppliers of milk, meat, fat, wool—and of our faithful friends the laboratory species and, finally, of man himself. Not that I am at all certain that controlling the sex of his progeny will bring man only benefit and joy. However, talking us out of looking behind that secret door is quite hopeless.

The first one, as far as I know, to pay attention to the very promising possibility of controlling the sex of mammals was our outstanding biologist Nikolai Koltsov, the founder and propagator of many modern trends in experimental biology. It was Koltsov who, in the very early thirties, first suggested the possibility of separating the two numerically equal kinds of male sex cells, or spermatozoa, containing the X chromosome (responsible for females) and the Y chromosome (responsible for males). The natural process of sex determination in mammals depends on whether an X sperm or a Y sperm fertilizes the ovum. The ova are all identical in sexual potentialities, and all contain the same X chromosomes. When such X ova are fertilized by spermatozoa also containing the X chromosome, the result is XX embryos that turn into females. If X ova are fertilized by Y spermatozoa, the resulting embryos are of the XY variety and are destined to become males.

It is easy to see that if, according to Koltsov's idea, this natural key mechanism of determining sex could be controlled, if a way could be found of separating the X and Y spermatozoa, which abound in myriads in the seminal fluid, so as to subsequently use for artificial insemination only the one which would produce the required sex, then the problem would be solved radically and simply. Following his advice, Vera Shreder, a researcher at his institute, attempted to drive the two kinds of spermatozoa of the rabbit to different poles of an electric field by means of electrophoresis. The method seemed to hold out the promise of partial success, and by 1939 Koltsov was discussing the first experi-

ments in the pages of the newspaper *Izvestia*.

Not so long ago the American press reported the successful repetition of these experiments with rabbits and further experiments with cattle. However, neither in the Soviet Union nor abroad could the findings of this report be confirmed.

It seems to me that Edwards and Gardner are, on the whole, correct in estimating the prospects of separating X and Y spermatozoa. They note that detectable differences between spermatozoa with X and Y chromosomes possibly do exist and that "theoretically such differences could be used for separating the spermatozoa, but so far they have not been discovered." This assessment is on the whole pessimistic. And it may be that this skeptical attitude of the authors toward the prospects of sorting X and Y spermatozoa influenced them to turn to the ova.

Is the Game Worth the Candle?

Be that as it may, their attempts to control sex ran along lines that I must admit I personally considered quite hopeless not so long ago. Unlike the situation in many invertebrates, fish and amphibians whose ova are fertilized externally and are accessible for experimentation, the ova of mammals are hidden deep in the mother's body. And that is where the mysterious process of fertilization takes place which determines the sex of the progeny. It would seem that any attempt to act on the female sex cells in any way is predestined to fail.

Strictly speaking, this difficulty has not been overcome in the experiments of the Cambridge scientists. What they were able to do was not in essence to control sex, in the strict meaning of the term, since the process of genetic determination of the sex of the embryo proceeded at random in the usual way. But their method does make possible the extra-early identification of the sex after it has already been determined.

They made use of that usually very brief period when the ovum, ejected from the ovary and already fertilized, is beginning to turn into an embryo but has not yet attached itself to the wall of the womb and is floating freely in its cavity. During this period the germinal vesicles (blastocysts) can be comparatively simply and safely extracted ("washed out") from the mother's body to see what each vesicle is to become—a male or a female. Nature itself has provided a way to do that: In the cells of female embryos one of the X chromosomes turns into sex chromatin. If a microsurgical operation is performed on a germinal vesicle, the extraction with a micropipette of a sample of several dozen or hundreds of cells, then by the appearance of their nuclei it is possible to tell the sex of the embryo. All that remains is to introduce into the body of the true or a foster mother the embryos of the desired sex.

Is this complicated procedure worthwhile?

We do have an example of a method of early sex determination which is much more practical than real control, a fabulous achievement of genetics. I am referring to the early "genetic marking" of the sex of the silkworm. By identifying, with the "genetic marker," the embryos of the required sex, the unwanted ones can be easily rejected at the very start of their development.

Breeds of "sex-marked" silkworms have already been developed in which the females lay an equal number of light and dark eggs. The light eggs, readily selected with an electric eye, turn into males, which produce from 20 to 30 per cent more silk than females. This genuine wonder was achieved with methods developed by a new branch of biology—radiation genetics. By radiation it has been possible to "attach" that section of the chromosome which determines the dark color of the egg to the sex chromosome responsible for the development of female characteristics.

It is also possible to link with sex other characteristics that do not depend on it. For instance, it is already possible to clothe male caterpillars in white "shirts" and female caterpillars in piebald or striped "shirts." Such caterpillars can readily be sorted according to sex even without an electric eye.

The Hopes of Physicians

What does the method of early sex identification promise in the case of mammals and man? Will it prove as valuable as in silkworm breeding?

If it were perfected, the method could have only limited application in mammals, especially man. There might be a case when the birth of a boy would be undesirable because of a possible hereditary defect. A number of so-called sex-linked hereditary defects in humans —hemophilia, color blindness and others —appear only in the son and never in the daughter. In such cases doctors could advise risking an operation to ensure the birth of a daughter.

Nor is the method likely to be of any importance for the early identification of sex, for even the most curious parents would hardly use it. Besides, it may well be that in the near future a safer and more reliable method will be discovered of identifying the sex of an embryo, though not at such an early stage. The method is also based on ascertaining whether there is any sex chromatin present without disturbing the embryo. It is sufficient to obtain a little of the fluid around it to see whether it contains any floating sex chromatin cells. This method is already used in cases of real need.

What there is no difference of opinion about is that everything concerned with the development of such early embryos is of the greatest scientific importance. Methods of cultivating embryos outside the mother's body could open unprecedented opportunities not only to study their vital functions, but also to influence their development—correct hereditary defects, modify tissue incompatibility, etc.

Well, and what about the search for ways of actually controlling the sex of mammals? I believe that no other direction than the one pointed out by Nikolai Koltsov has yet emerged, and that a pessimistic attitude toward it is unwarranted.

The Year 2000 Will Provide the Answer

There are many indications that the problem can be solved. First of all, take the seminal fluid, which contains myriads of X and Y spermatozoa. This is a most convenient substance for experimentation. It can now be stored for long periods at low temperatures, and at the temperature of liquid nitrogen it can be kept for years, perhaps centuries, millenniums or even "forever." True, there is as yet no precise answer to whether such sperm loses its properties or whether mutations occur in its hereditary structure. But it is also true that bulls whose bones have long decayed in the ground are still siring progeny. Seminal fluid can be delivered by air and used anywhere for artificial insemination. That is now being done with the sperm of pedigree bulls. In a number of countries, including ours, which has done so much to solve the problem, millions of cows are now inseminated artificially, and there are countries where natural insemination is not done at all. In short, this is a most convenient substance for experimentation.

It is not ruled out, though not yet proved, that the X sperm and the Y sperm of some animals may even differ slightly in appearance. And it is altogether conceivable that the X sperm and the Y sperm may react differently to various fine physicochemical and biological influences.

The problem of artificial sex control has not yet been solved, but researchers are not giving up. Here and there attempts are being made to separate the X sperm and Y sperm according to specific weight and rate of sedimentation in a centrifuge, by their ability to withstand extreme influences, by immunological reactions and other characteristics.

We can now differentiate one atom from another by the position of some electron. It would be strange if we did not eventually discover a method for differentiating between the structures of living cells whose macromolecular structures are gigantic compared to atoms and molecules. The solution of this problem is a matter of method, a matter of the talent and persistence of the investigators, and, in the final analysis, a matter of time. Considering the furious rate of scientific and technical progress, it will not be a long time.

I am convinced of the theoretical solubility of the problem once advanced by Koltsov and believe that further attempts to solve it should receive every support.

As I wrote some time ago, one does not have to possess an inordinately vivid imagination to foresee that science will have this power by the now not too distant year 2000. Biological methods will be discovered of obtaining progeny of the desired sex in many useful animals and, possibly, in man himself.



Yelena Ryabinkina in Tchaikovsky's Swan Lake.

THE DANCING SISTERS

By Robert Tsfasman

ONE JUNE NIGHT some ten years ago Bolshoi balletomanes watched an unknown ballerina perform in the leading role of Odette-Odile in *Swan Lake*. This was Yelena Ryabinkina, a Bolshoi dance school graduate making her debut.

Theatergoers as a rule feel compassionate toward performers making their debuts. That night they heaved sighs of relief after each successful pirouette. Though not a Ulanova or a Plisetskaya, the then 17-year-old ballerina displayed pretty good technique. But probably the most agitated members of the audience that night were Yelena's mother Alla Tsabel, herself a Bolshoi ex-ballerina, and her younger sister 13-year-old Ksenia, at the time a pupil of the same school from which Yelena had just graduated.

Five years later Yelena was a world celebrity, while Ksenia was just starting out. Ksenia had a harder time than her sister did and a more modest debut with the corps de ballet. The Bolshoi corps de ballet is a top-notch group of dancers of the same level of mastery, from which it is extremely difficult to emerge unless one is strikingly individual and spotted in time. However, the younger Ryabinkina, who is extraordinarily artistic and musical, has reached the soloist level, thus far in the smaller roles of the Bride in *Swan Lake*, the Girl Friend in *Giselle* and the Variations in *Cinderella*. Still her talents are making the critics sit up and take notice.

Incidentally, we would not say the older Ryabinkina's ballet career was all a bed of roses. The ballet with its daily exhausting "grind" knows no easy rises. And though the 10-year-ago debut gave Yelena the green light, she still had a long uphill climb ahead of her. In fact dance experts and balletomanes who watched Yelena polish her talents find it rather hard to say when she really reached stardom.

In that respect it is easier for balletomanes abroad—after all the Bolshoi is not there every day. Last summer Yelena spent three months with the Bolshoi in the USA (87 performances in 91 days!). She danced in fragments from *Swan Lake* and *Giselle* (as Myrtha) and in Scriabin's *Dream* ballet performance. This was her second visit; her first was in 1963.

In *The New York Times* of last May 28 Jacqueline Maskey recalled that Ryabinkina's first visit had not produced much of an impression on American audiences. "However," she added, "last evening at the Metropolitan Opera House Miss Ryabinkina struck out 1963 in one blow with a near-brilliant interpretation of the enchanted Odette in the Bolshoi's mounting of Act Two of her debut ballet."

There were quite a few such raves in the American press. In turn, Soviet dancers had praise for the mastery of George Balanchine's New York ballet which they saw several times.

"The Balanchine ballet was extremely interesting," Ryabinkina said. "The choreography was expressive and original. True, some items are too abstract in plot, which I find alien, perhaps because I always look for hidden dramatism and emotion." This comment reveals the salient feature of her talent—her proclivity for dramatic and heroic roles in which she best displays her virtuoso technique and artistic temperament.

The younger sister Ksenia, being gentler and more plastic, is better in lyrical roles. Her technique is still not as good as Yelena's, and now and again she fades out before the show ends. On the other hand, in concert recitals she is very good.

One must work hard to develop a talent which is inborn, and Yelena has done just that; she is a girl of conspicuous industry. Though Ksenia is also above reproach in this respect, she, her relatives say, is prone to go in for a wider range of interests than the self-abnegation required of the ballerina can really permit. Thus, she is in the films—not of her own volition, but because she was asked to do so by a film director in search of a type. True, she says that this is just because she is curious; nevertheless, it leaves her less time for ballet exercise.

Yelena has been married to the dramatic actor Edward Martsevich for several years now and spends the little spare time she has on household chores. Ksenia meanwhile disapproves of early marriage. She is keen on exhibitions, theatergoing and the conservatory. She has many friends and believes, with good reason, that a plethora of impressions is a must for a creative individual. Yelena is of the same opinion but simply has less time. Still, at the more interesting premieres they are always seen together, causing audiences to discuss how much they are alike and what kind of appeal each has.

As it is too tiring to be in the public eye all the time, they usually go for holidays to some little-frequented fishing village on the Black Sea coast. However, not for too long since they have to keep in shape to maintain their dancing reputations.

Ksenia Ryabinkina in Variations in Don Quixote.



BY RAKHIL BAUMVOL
DRAWING BY LEONID SERGEYEV

NATURE guards her secrets jealously. Just try and catch the moment buds appear on a tree. It is as if Nature waits for us to turn our backs in order to spring her surprises.

"I won't turn my back," one man decided. "What shall I watch though? Which plant grows fastest? The mushroom, of course."

So the man went to the forest, lay prone on the ground opposite a tree stump and watched.

"I'll stay here all day and all night if I have to. I'll stay until a mushroom sprouts."

But the mushrooms felt his eye on them and could not sprout even though it was time. In despair they called on the rain for help. They wanted no drizzle, but a real downpour. It began to rain cats and dogs. The man covered himself with his cape and waited for the rain to ease up. When it stopped, he threw the cape off and peered at the ground. There was a mushroom.

Ever since, mushrooms have been sprouting after a rain.



CHILDREN'S CORNER

Photographs by Alexei Varfolomeyev



A first grandson. Women's rights or not, believes this Uzbek grandpa, the man perpetuates the family name.



The minute you're born the doctors get after you. This picture was taken in an Uzbekistan maternity hospital.



He will spend his daylight hours in this vehicle and, hopefully, leave his student parents time for their books.



Another new Uzbek. Maternity care, delivery and all related medical services are free.



The Central Asian republics, where disease was once rampant, now have the country's highest percentage of children.



Classmates of the baby's mother pay her a visit and are rewarded by a glimpse at the addition to the family.

A NEWCOMER



Immediately after the Revolution the Soviet Government made maternity and child care the direct responsibility of the state. Ever since then the country's children—whether orphaned or living with parents, whether cared for by widowed mothers or by grandmothers—have come first.

Good times or bad, war or peace, plenty or famine, one principle was immutable: "Children are the privileged class." That was true even during the war when we had very little to give them, and it is true today when we have the wherewithal for a good life.

We have become so accustomed to some of our changes for the better that we no longer take note of the fact that child labor is prohibited, for example, or that infant mortality is almost nonexistent.

Especially marked changes have taken place in the Eastern republics: Kazakhstan, Uzbekistan, Kirghizia, Turkmenia and Tajikistan. In the course of a generation these once isolated and backward areas have eliminated the poverty and disease that threatened to exterminate whole nations. These republics now boast the country's highest percentage of children, with the Tajik Soviet Socialist Republic in the lead—almost 50 per cent of its population are under 16.

From the day of birth at a maternity hospital, the child gets skilled medical attention. There is no charge for hospitalization or delivery. Parents pay absolutely nothing for the whole range of medical services, from regular examinations of children in polyclinics or by school physicians to the most complex operations and most expensive treatment.

These photos were taken in one of the maternity hospitals of Tashkent, capital of the Uzbek Republic. There is no shortage of expectant mothers—large families are the rule rather than the exception in Central Asia—and yet beds and services are always available.

Along with concern for the child comes concern for the mother. The Central Asian woman knows how true that statement is. A few decades ago she was a meek and subservient domestic slave in her own home. Today she is an active force, not only in her home but in her community. The tradition of man as lord and master went out with illiteracy, mass poverty and disease. Thirty per cent of the republic's parliamentary deputies are women—a more than sufficient body to stand up for the interests of the "weaker sex."



INFANT MORTALITY HAS DECREASED BY 90 PER CENT IN OUR COUNTRY OVER THE PAST 50 YEARS.

THERE ARE ABOUT 25 PHYSICIANS PER 10,000 OF POPULATION.

THERE ARE ABOUT 8.5 MILLION CHILDREN IN KINDERGARTENS AND NURSERIES.



HE LIKES TO IMPROVISE

BY TAMARA GRUM-GRZHIMAILO
Art Historian

In the modern world of music there have been many fine musicians whose manner of rendition has been influenced to a great extent by their favorite composers. One need but mention the cellist Mstislav Rostropovich and Prokofiev, the pianist Vladimir Sofronitsky and Scriabin, the conductor Yevgeni Mravinsky and his favorites Beethoven, Wagner and Shostakovich.

Every orchestra conductor has his own arsenal of gesture and mime. With Yevgeni Svetlanov, the leading conductor of the USSR State Symphony Orchestra, this reflects his typically Russian romantic ideal. He is not overly elegant, extravagant or quirkish, but simply natural. Nevertheless, he is extremely expressive, revealing fire, an imperious will and inspiration.

Svetlanov's enduring interest in conducting nineteenth century Russian classical music seemed slightly conservative, to say the very least, since most modern musicians were more interested in the classical and pre-classical music of the seventeenth and eighteenth centuries. Ten years ago music lovers were wondering whether Svetlanov, a fine interpreter of Rachmaninoff, Tchaikovsky and Scriabin, could ever provide interesting renditions of modern music.

Svetlanov's debut did not appear to augur a meteoric rise. To some he seemed a new edition of Nikolai Golovanov, a leading light of the Soviet conducting school in the past. This similarity is brought to mind since after the relatively short period of eight years with the Bolshoi Svetlanov became its leading conductor. Others, meanwhile, were impressed precisely by the underivative character of his interests which failed to yield to the trends of fashion. In short, he did not provoke controversy. All believed that he, first as leading conductor at the Bolshoi and since 1965 leading conductor of the USSR State Symphony Orchestra, would continue the good old traditions. Only much later did some music lovers begin to realize what an exceptional man he is.

Meanwhile he did what he had set out to do. He conducted his favorite Russian operas of Moussorgsky, Rimsky-Korsakov, Borodin, Tchaikovsky and Dargomizhsky.

Suddenly Svetlanov's traditional manner acquired a new shine. Indeed, the approach taken to music generally and to modern music in particular, an approach that is emotional and human and believes in esthetic beauty—whatever anti-melodious and anti-emotional forms may need to be rendered in modern music—was bound to yield a surprisingly novel result of high artistic standard. And this occurred when Svetlanov turned to modern music, to composers without whom he could not conceive of further advance. "Advance and only advance, giving neither orchestra nor myself respite since progress can be made only by blood and sweat," he said two years ago. Then, to be true, that seemed a bit theatrical. Because then it was still hard to imagine his scope and potentialities in his turn to modern music.

Again he did what he wanted to do. He gave his renderings of Shostakovich's *Thirteenth* and *Eighth Symphonies,* putting the emphasis not on their "documental" character but on their philosophical and human import, their tragic grandeur. He performed such sweeping vocal-symphonic frescoes as Yuri Shaporin's *On the Kulikov Field* cantata, Giuseppe Verdi's *Requiem* and Richard Strauss's magnificent *Alpine Symphony,* with his characteristic theatrical scope and powerful dramatism. He popularized the instrumental concertos of Dmitri Shostakovich, Benjamin Britten and Paul Hindemith. He was first to perform in Moscow Gustav Mahler's *Tenth Symphony,* Igor Stravinsky's dodecaphonic *Agon,* Carl Weber's Orchestral Pieces, and Arnold Schoenberg's *A Survivor from Warsaw.* And in all these compositions he discovered a vibrant intonation and atmosphere of his own.

Of late Svetlanov has been developing a compact, lucid, precise style of conducting. Nevertheless, the prevailing element in his presentation is his melody-making flexuous hand.

At rehearsals Svetlanov displays an amazingly businesslike attitude. He is demanding but not voluble and never seeks to hypnotize the orchestra. He just works. With confident mastery he sculpts, molds and polishes, well aware that the musicians have come to play, not listen to lectures. Like the seasoned captain of a ship, he brings his orchestra to "port" with a few laconic commands. But even at the full dress rehearsals the rendition is not finalized. Room is always left for improvisation during the public performance. Because improvisation is for Svetlanov the apex, the height, for which he strives. And then you understand the inspiration in that simple phrase he may eject at a rehearsal that, "There is too little sound. I don't want your average forte."

OPENING SURPRISE



By Boris Spassky
International Grandmaster

I SUGGEST that SOVIET LIFE readers study the following game, which I played with Dragoljub Ciric in the Ninth World Students Chess Team Championships in Marianske Lazne, Czechoslovakia in the summer of 1962.

We met on board Number 1 in the USSR versus Yugoslavia match. Our two teams were cofavorites for the title, and the outcome of this match was vital in the battle for top honors.

SICILIAN DEFENSE

White—B. Spassky Black—D. Ciric

1. P-K4	P-QB4	3. P-K5	Kt-Q4
2. Kt-KB3	Kt-KB3	4. Kt-QB3	

After making this fourth move, I decided to go around and see how my teammates were making out. To my surprise, I saw the identical positioning as the one in my game with Ciric on two other boards. Three Sicilian Defenses out of four encounters! It became clear to me at that moment that the Yugoslavs intended to put up an uncompromising fight with us.

4. . . . P-K3 5. KtxKt

Vladimir Bagirov, playing the white pieces against D. Marovic, his Yugoslav opponent, preferred at this point to reply with 5. Kt-K4. A different course was shortly taken on the third Sicilian board in a game between D. Minic (Yugoslavia) and E. Gufeld (USSR). Their moves were the same as mine and Ciric's until Black's sixth reply.

5. . . . PxKt 6. P-Q4 Kt-QB3

At this point, Gufeld played 6. . . . P-Q3.

7. PxP	BxP	9. B-QB4	BxPch
8. QxP	Q-QKt3	10. K-K2	O-O

Dragoljub Ciric is a cool-headed, steady chess player who usually employs reputable and dependable opening systems. His selection of such a sharp variant caught me "flat-footed." I felt that my partner had prepared a surprise of some kind, but it was too late to retreat. After 8. QxP, White, if he naturally wants to fight for an advantage in the opening stage, can hardly refrain from tactical complications.

11. R-KB1 B-QB4 12. Kt-KKt5 KtxP

This is a surprise, indeed! Black usually replies with 12. . . . Kt-Q5ch, with the object of moving the Knight back to K3. Instead of this natural maneuver, he now sacrifices the piece.

Needless to say, I was far from a state of tranquillity at that moment. It isn't much of a pleasure coping with a special analysis, carefully thought out in a calm atmosphere at home. Even if this analysis has a slight inaccuracy, finding the latter during a vital game where time for thinking over moves is limited, isn't easy at all. No wonder I pondered over my reply for exactly an hour before finally making up my mind.

13. QxKt

This was unquestionably the most crucial moment of the game. By accepting the sacrifice I, thereby, had to live up to this bold challenge: A continuation of 13. KtxP(KB), KtxKt; 14. RxKt, Q-K6ch; 15. QxQ (a sharp reply of 15. B-K3 also merited attention) gave me a somewhat better ending and a guarantee against all unpleasantness.

I would feel more constrained if I were to play this game now. First of all, I would take into consideration the circumstances that I was playing in a team competition and on board Number 1 at that, meaning that this contest would be of great psychological as well as sporting significance. Very often the "duel" between the team leaders serves as a kind of barometer showing the combat spirit of the whole team. Naturally, in this case one should take the least possible risk, or practically no risk at all.

I would also take into account that the issue of who would receive the gold medals largely depended on the match between our teams: In the event of a victory, the Yugoslav students would be in a very strong position to capture the top laurels.

It was possibly this sense of responsibility for the success of our team that would now force me (naturally, if I could not find a clear-cut plan of action after 13. QxKt) to select a calm continuation—13. KtxP (KB), and, thereby, avoid a rather risky opening board debate with a well-prepared rival.

But, I must admit that at that time I was far from such reasoning. I was engrossed by the situation, and it even seemed to me that I was obliged to accept the challenge. I, of course, was aware of all the dangers this decision entailed. If "calm" Ciric sacrifices a piece, it means that he has analyzed in detail all possible continuations. And yet intuition prompted me to think that my opponent's scheme was not correct. It was precisely intuition that guided my judgment and made me work intensively for a whole hour until I finally fathomed the position.

I think that even if I failed to solve all the problems on the board to the end at that time, I still would not have made a reply of 13. KtxP(KB) with a transition to a somewhat better ending. A decision of this kind at that time would have been equal to my backing out of the fight, equal to the recognition of my helplessness in the face of my adversary's design.

I accepted the Yugoslav player's challenge not so much because I had figured out all variants, but more because my intuition told me that I was right. This confidence, in the long run, helped me overcome an unexpected obstacle encountered in this game.

13. . . . P-Q4

The idea behind this sacrifice of a piece is that Black swiftly mobilizes his forces and attacks the rival King stranded in the middle of the board.

14. QxP

Studying the varients arising after 14. BxP took up most of my time. It was clear to me that Black's reply to such a move would be 14. . . . B-KKt5ch.

How should White play now?

In the beginning, I regarded the possibility of moving my King back to K1. The main variant 15. K-K1,R(QR)-K1; 16.BxPch, K-KR1; 17. BxR (I rejected 17. QxR in view of 17. . . . RxQ; 18. BxR, Q-QB2, and, despite his material advantage, White finds it hard to prove that he has real chances of winning), 17. . . . Q-QR4ch! convinced me that, in this event, the picture looks sad for White. Indeed, the side Queen check is fatal for him. If, for instance, 18.P-QB3, the reply can be 18. . . . B-KB7ch, whereas a decisive continuation to 18. Q-QB3 can be 18. . . . RxBch; 19. K-Q2, B-QKt5.

Instead of making a retreat 15. K-K1, I began studying a reply of 15. R-KB3, but I did not like the continuation of 15. . . . Q-QKt4ch; 16. P-QB4, R(QR)-K1! In the event now of 17.Kt-K6, the continuation can be 17. . . .PxKt; 18. BxPch, BxB; 19. RxRch, BxR; 20. QxQ, BxPch, and Black wins.

Giving up 15. R-KB 3, I concentrated my thoughts on variants springing up in case of 15. K-Q3. But here, too, after 15. . . . R(QR)-K1; 16. BxPch, K-KR1; 17. BxR, RxR, a completely unclear position would arise. And lastly, I, in general, did not consider a reply of 15. K-Q2 at all, because I realized that it would also permit Black to build up quite unpleasant threats.

Therefore, a continuation of 14. BxP did not seem so convincing to me, and I switched my attention over to a reply of 14. QxP. Studying the variants connected with this move, I did not discover any particular danger for White, because, in the event of 14. . . . B-KKt5ch, White had an excellent reply of 15. R-KB3. Should Black now continue with 15. . . . B-KKt8, the next moves would be 16. K-KB1, BxR; 17. QxB, and White fends off the attack and retains his material advantage. A continuation of 15. . . . R(QR)-Q1; 16. Q-K4, BxRch; 17. PxB, P-KKt3 would be a little better for Black, but this continuation would probably give him only practical chances of salvation.

It truly is remarkable the way a chess player's brain works during a game! I arrived at 14. QxP, having rejected BxP. Why, then, did I study 14. BxP first? Was it because it looked like a more natural reply than 14. QxP?

14. . . . R-K1ch 15. K-KB3

This is a stronger reply than 15. Kt-K4. For instance, a possible continuation could be 15. . . . B-K3; 16. QxB, QxQ; 17. KtxQ, BxPch; 18. K-KB2, BxR; 19. KxB, R(QR)-QB1, with Black's position not being worse than that of his rival.

15. . . . Q-KB3ch 16. K-KKt3

It would be wrong to play 16. B-KB4, in view of 16. . . . R-K6ch.

16. . . . B-Q3ch 17. R-KB4

Evidently, this reply was overlooked by my rival in the analysis he made at home. He, probably, only reckoned on 17. B-KB4, after which 17. . . . R-K6ch would bring him a victory.

17. . . . B-K3

It is impossible to see how Black can keep up the dying flame of attack, because the danger to the KB2 spot is most unpleasant.

18. KtxB RxKt 19. QxB

This is the decisive blow, which will most rapidly lead to a win.

19. . . . Q-KKt3ch		25. R-K1	P-KKt4
20. R-KKt4	R-K6ch	26. R-KB3	K-KKt2
21. BxR	QxQch	27. R-Q1	P-KB3
22. K-KB2	R-K1	28. K-KKt1	P-KKt5
23. R-KB4	R-K2	29. B-Q4	
24. B-QKt3	Q-K4		

Black resigns.

This exciting game, as well as the whole match, ended successfully for our team. We defeated the Yugoslav students 3 to 1, and were the recipients of the World Championship gold medals.

We found out after the match that the variant with the piece sacrifice had been prepared by the Yugoslavs especially for the contest with the Soviet players. The main expert was International Master Dragoljub Minic, who finally persuaded mistrustful Ciric to employ this "secret weapon." But the surprise, as you can see, had both its merits and demerits.

Siberia's Northern Wonderland

By Yevgeni Ruzhnikov

I AM LUCKY. I am one of the very few Moscow journalists who has experienced the ghastly winter temperatures of the World Pole of Cold. The pole is in Yakutia, in the northeastern part of Siberia. I went there to see how people fare in this terrible climate and found that they manage very well indeed. As a matter of fact, they are digging out the wealth an inclement nature has guarded for so long. Yakutian weather made it a most invigorating trip, believe me.

A glance at the map of Yakutia, east from the Lena River, will show you two small streams with the resounding Yakut names of Sartang and Dulgalakh. Flowing together, they form the 550-mile-long Yana River, which cuts through a mountain range to fall into the Arctic Ocean. In the thirties of the seventeenth century a group of Cossacks under Ivan Rebrov, sent along the ocean coast to explore hitherto unknown lands, discovered the mouth of the Yana and paddled up the river to its upper reaches. There they spent the winter of 1638. Incidentally, Cossacks were the first to travel across most of Siberia after that vast territory east of the Urals had been opened up for Russia by Yermak and his Cossacks half a century before the voyage of Rebrov. The most easterly point of the Asian continent, the cape opposite Alaska, is named after Cossack Semyon Dezhnev. He rounded the cape and discovered the strait between Asia and America, the exit to the Pacific Ocean. The village which Rebrov's band founded still stands in the lower reaches of the Yana. It bears the name Kazachye, which means "founded by Cossacks." The 1638 winter quarters of the band grew into Verkhoyansk, a Yakut town which now has a population of 2,000.

COLD RECORDS

Verkhoyansk should sound familiar. For years geography textbooks the world over have called this Arctic town the coldest spot on earth. The winter mercury often tumbles down to 75-80 degrees below zero Farenheit, and once it dropped to an incredibly chilling 94 degrees. No wonder the hardy Cossack explorers preferred to break their journey and spend the cold months in cabins they built for themselves.

But for all that Verkhoyansk lost its world record in this century. A still colder spot was discovered. I am not talking of the Antarctic, where weathermen at the Soviet research station Vostok registered a superfrigid 126.6 degrees below zero in 1960. That does not count since the station is in the mountains, some 10,000 feet above sea level. Besides, the area is uninhabited.

The coldest *inhabited* place on earth is in the northern hemisphere. It is not even north of the Arctic Circle, as you might expect, but all of 220 miles south of it. In the upper reaches of the Indigirka River there is a broad plain surrounded by mountains. It is only 2,400 feet above sea level. Cold air collects in this hollow in winter and remains motionless. The area is called Oimyakon, and it has broken by almost four degrees the record of Verkhoyansk. The Oimyakon temperature went down to an abysmal 97.6 degrees.

I visited Oimyakon in the middle of winter and, of course, was frightfully cold. I went to Verkhoyansk in July, when the people there were gasping and sweating in the oppressive heat. These two trips gave me an idea of what the local population has to put up with the year round—the widest difference on earth between the rocketing temperatures of summer and winter's plummeting thermometer. Some years the variation is almost 200 degrees.

DARK-EYED NORTHERNERS

The people who live there are sturdy. They have to be to stand such extremes of climate. Most of them are Yakuts, with a scattering of Evens, Chukchi, Evenks, Yukagirs and Russians, descendants of the seventeenth century Cossack explorers. The Yakuts, a Turkic people, moved northward from the south in the sixth to tenth centuries A.D. The majority have coal-black hair, dark eyes and swarthy complexions. Their language, with an alphabet of 43 letters, is related to the Turkish, Tatar and Azerbaijan.

Like the Buryats, Bashkirs, Tatars, Kirghiz, Kazakhs and other formerly nomad peoples, the Yakuts drink kumiss. This is a nourishing and slightly intoxicating beverage containing up to 2.5 per cent alcohol, lactic acid, Vitamin C and other things. It is made from mare's milk (sometimes from camel's milk in southern countries) by a process of fermentation set up by adding lactic acid bacteria and yeast to the fresh milk. Kumiss is prepared in leather sacks or wooden tubs, and in the past few decades in bottles. In Yakutia bottles are preferred, they make the strongest kumiss since the last stage of fermentation takes place in a stoppered container, and the beverage becomes saturated with carbonic acid under pressure.

The ancients knew the healthful properties of kumiss. The drink is mentioned by Herodotus, Greek historian of the fifth century B.C. Modern scientists have established that the alcohol and carbonic acid in the beverage increase the suction ability of the gastrointestinal tract. Because of this property the human body assimilates proteins, fats and sugar almost completely, up to 95 per cent. Kumiss is used in the treatment of tuberculosis and other lung diseases, scurvy, and gastrointestinal diseases connected with hypoacidity. The Soviet Union has quite a number of kumiss resorts.

The Yakuts are happy to have guests sample their beloved drink. It looks like water to which a little milk has been added. The taste is so unusual that I can think of nothing to compare it with. In Yakutia it is drunk at room temperature. Myself, I prefer it cold.

VESSELS FOR KUMISS

Kumiss is kept in *chorons,* handsome wooden vessels. The Yakut craftsmen make them by hand out of chunks of birch. They cover them with rich carving and decorate them with silver or copper rims and dangling ornaments. For a finish the wood is rubbed with butter or cream, which turns it a dark brown.

The vessel, like the custom of drinking kumiss, goes back to antiquity. The reason, perhaps, that the *choron* is shaped something like an Etruscan vase. Professor Alexei P. Okladnikov, a student of the culture, says "The *choron* is uniquely Yakutian, characteristic of no other people in the world."

The one given to me in Yakutia now decorates my apartment in Moscow. It has three legs like stylized horse hoofs. I was told that *chorons* are almost always made like that. Since the Yakuts used to lead a nomadic life in which the horse played an important role,



Sculpture in bone is an ancient art in this republic in the northeastern part of Siberia. Today the work of Yakutian craftsmen is exhibited widely. Semyon Nesterov has been honored with the title Merited Artist of Yakutia.



This permafrost region supplies the country with most of its diamonds, for both industry and jewelry. Deposits of gold, oil, gas and other minerals have spurred the construction of new towns: Mirny, Aikhal and Udachnaya.

that helpful animal would naturally have a prominent place in their folk art.

In our age of horseless carriages, the horse is still very much in evidence in Yakutia, for transportation, of course, and for hauling. Young horseflesh is also a local delicacy. Herds of sturdy local horses, undersized, with long hair, pasture in the taiga all year. In Oimyakon I saw how they pushed deep into the forest when it was very cold, to emerge into open places as soon as the frost let up even slightly. The snow never gets deep enough to prevent them from obtaining feed. The Pole of Cold has little precipitation: six and a half inches a year in Oimyakon and five and a half in Verkhoyansk.

MIDNIGHT SUN

The Yakuts have long since acclimatized to the cold North. A woman in Oimyakon told me she had no objections to the weather. "This is my native land," she explained.

But in the Yakut village of Tungulu I attended the Isyakh, a beautiful festival to welcome in the summer, at which there was much rejoicing. Perhaps the national sport of hopping on one foot is an expression of that joy. Various jumping and hopping matches were on the festival program, along with wrestling and horseracing. People made a circle around a tethering post, arms on one another's shoulders, and sang an improvised song in the old style, their feet keeping time to the music. The song was about summer and warmth, the joy of being alive, the pleasure of meeting old friends—and the whole thing was sung on only two notes. You won't hear anything like it at the Yakutsk Opera House.

Summer brings the Yakuts more than warmth. The long hours of sunlight turn night into day. In Verkhoyansk, for example, the sun drops behind the hills only half an hour before midnight to rise again almost at once. Even north of the Arctic Circle people bathe in lakes well heated by the sun. I swam in one near Verkhoyansk. The taiga in summer is rich in nature's gifts: berries, mushrooms and wild fowl, while the lakes and rivers teem with fish. All this bounty the Yakuts store away for the winter in large quantities in cellars cut into the permafrost, where food keeps indefinitely.

The taiga would be wonderful in summer were it not for myriads of tiny bloodsucking midges and mosquitoes that crawl everywhere, and gadflies with a bite that makes you wince. Smudge fires are kept going in all the Yakut villages to drive away the winged hordes. The smoke drifts along the ground between the houses. In the taiga and the tundra smudge fires attract reindeer; breeding the animal is a major industry in rural Yakutia.

MUSIC TEACHER

The North is more intimidating in winter, of course. The frosts have a depressing effect on many of those who come from warmer climates. Vladimir Korolenko, well-known nineteenth century Russian author, had this to say of Yakutia: "The frost, the great sovereign of the northern wilderness, compresses the air. Hoarfrost falls in broad flakes and sparkles in the rays of the moon. The tremendous river thunders like cannon as the ice cracks from the frost. The long drawn-out rumbling over the river fades away in the mountains,



Hunting is still a major industry in this superb fur country—dark sable, polar fox, ermine. Larger animals, like lynx, bear and Ussuri tiger, are rarer finds. These men with forked poles are out to bring them back alive.

Yakutia: where the temperature goes up to 90° F. in the summer and down to -97.6° F. in the winter.







(Top) Kumiss, fermented mare's milk, is drunk on any and all occasions in Yakutia, often ceremonially, to properly mark the start of a folk festival.

(Center) This northernmost power station, on the Yakut Vilyui which flows into the Lena, generates electricity for Mirny, the new diamond center.

(Bottom) They don't look like Derby winners, but these shaggy, undersized horses are very hardy, responsive and, most important, survive the climate.

ravines and hills. The sight of that vast icy wasteland leaves one both terrified and sad."

But Gavriil Skryabin, 57, the mayor of Verkhoyansk, told me:

"The devil is not as bad as he's painted. When it's cold here, there is no wind and the air is dry. A dry frost is comparatively easy to take."

The mayor introduced me to a young schoolteacher. Ludmila Anikeyeva graduated from a music school in Orenburg, the Southern Urals, before coming to Verkhoyansk to teach music. Her father, a geologist, works in Batagai, which is on the Yana River 50 miles below Verkhoyansk.

I asked Ludmila how she liked living in such a cold place.

"I like it so much I'm going to stay," she said. "I have many pupils, some of them quite talented. Teaching these children is a joy."

"What about the frosts?"

"You get used to them. As compensation, you have those marvelous northern lights!"

Ludmila is married to an Aeroflot pilot who flies a small YAK-12 on local routes. The young couple have decided to settle in the North for good.

I was also introduced to a group of Leningrad people who are working at the Verkhoyansk hydrometeorological station,in operation since 1898. I watched them release a radiosonde under the direction of their chief, hydrologist Vadim Zotov, to measure the temperature, humidity and atmospheric pressure at heights of up to 100,000 feet. I traveled with Zotov by launch down the Yana, which winds capriciously between wooded hills. In summer the river near Verkhoyansk swells in width anywhere from 800 to 1,000 feet and reaches a depth of 18 to 20 feet. Some 95 per cent of the river's annual flow is in the warm period, between June and September. By fall the stream grows very shallow, and in winter it freezes solid.

MAMMOTHS AND TIGERS

Despite its terrifying seasonal aspect the winter taiga has natural treasures all its own. First and foremost are the superb furs that pour into the world market. Their richness elicits cries of joy from fashionable women, and shudders from husbands at the sight of the price tag. Notable are the famous dark sable, snow-white polar fox, fiery red fox, ermine and black-tailed squirrel. The bitter cold forces the fur-bearing animals of Yakutia to put on especially warm, strong coats for the winter, one of the few virtues of frost.

Hunting and trapping have been the occupation of most of the local population for centuries. Dressed in *malitsi,* loose, hooded coveralls made of fur, and soft reindeer-skin boots, the hunters roam the taiga in groups of four and five, hunting and trapping for months on end. Today they are often taken to their hunting grounds by helicopter. The most fortunate return with rare trophies—the fierce lynx or even a huge bear, the "sovereign of the taiga."I was also told that there have been three cases in this century of hunters who stumbled across Ussuri tigers that had for some strange reason wandered this far north, across the Stanovoi Range, into southern Yakutia. One of the tigers was killed in 1904 by a hunter who died only four years ago at the very ripe old age of 114.

At Oimyakon I visited a farm that breeds silver foxes. "It takes half a year to grow one stole," the director told me, evidently repeating the local joke. The farm sells 750 skins annually to purchasing



Mikhail Neustroyev is an Evenk, one of the several indigenous people of Yakutia. He hunts for a state-owned fur-breeding farm. Breeding for fur is spreading throughout the North, to supplement what the taiga hunters bring in. The valuable skins he is holding will probably go for export.



Northern Siberia is a fine research area for paleontologists. The dry sub-zero climate has preserved not only the bones of the prehistoric mammoth but whole carcasses. One such giant was found recently in subsoil ice. Amateur paleontologists, some still in grade school, do field exploration.

agencies, making a clear profit of 15,000 rubles. Animal breeding in enclosures is spreading throughout the North to supplement what the taiga hunters bring in.

Along the rivers and lakes hunters sometimes find mammoth bones in the permafrost. Many thousands of years ago Yakutia was a haunt of large herds of these animals. On the Aldan River, the right tributary of the Lena, there is a mountain out of which the bones of this prehistoric animal are washed every year. The mountain is called Mammoth, and so is the coast of the Arctic Ocean between the Yana and the Indigirka. A graveyard of mammoths was discovered on the Novosibirsk Islands. It contained so many bones that as many as 40,000 tusks were exported from Yakutia in some years of the past century.

This abundance of tusks may explain why ivory carving has been one of the folk arts of Yakutia from ancient times. Until comparatively recently whole families in Yakut villages were ivory carvers, the secrets of the art handed down from generation to generation. Such families still exist, but not many. Today's craftsmen and sculptors have been educated at art schools. Their work—superb miniature sculptures, boxes, knife handles, combs and other articles—are displayed at exhibitions in the Soviet Union and other countries. They were shown at EXPO-67 in Montreal.

GOLD UNDER OUR FEET

More and more Russians, Ukrainians and other "southerners" are going North today. Gold, diamonds, oil, gas and other mineral deposits have been discovered in the permafrost of the northern wastelands. At the end of the thirties geologists found rich gold deposits in the upper reaches of the Indigirka. Extraction started immediately after the war. A local poet reacted with these lines:

In Oimyakon, at the Pole of Cold,
Mines dot the taiga with their cones
It isn't dirt you tread, but gold,
In earth that's frozen hard as stone.

Where the Nera River flows into the Indigirka there now sprawls a new town of gold miners, Ust-Nera, surrounded by the Razvedchik, Nelkan and Olchan gold fields. At Olchan last year miners found a treasure, along with the gold, that started a small furor in scientific circles: a bay horse with a lion's tail—a bare tail with a tuft at the end. It had lain in 30 feet of permafrost for some 30,000 years, the only example of a completely preserved horse of the kind in the world.

But back to gold. It was also found in the Verkhoyansk area some 12 or 13 years ago, as well as ores with a high silver, lead, zinc and copper content. Tungsten has also been found. The largest deposits of tin in the Soviet Union are now being mined near the town of Deputatsky.

"We keep being surprised by the richness of our land," said Alexandra Ovchinnikova, President of Yakutia, a 54-year-old Yakut woman with bright eyes and a gentle smile.

This wealth is what draws people from warmer parts. It would be no exaggeration to say that the future of the Soviet Union depends on the work that has been started in the northern regions of the country. For, by a caprice of nature, the lock to our national treasure chest was hung on its northern side.



Reindeer is the traditional mode of travel in this part of the world. They are still used for pack animals by geologists and hunters. But the helicopter has become as familiar a sight. Here is one bringing supplies to a party of geologists. Numerous field expeditions keep searching for minerals of all kinds. Silver, lead, zinc, copper and tungsten have been found. The largest deposit of tin in the country is now being mined here.

Humanity versus Barbarism

Byelorussian War Novels

BY GENNADI GRITSAI
Literary Critic

THE LAST WAR affected the whole world. Glimpses of its tragedy are conveyed through the sensibilities of the millions of people who were caught up in it. But only literature can project the totality of impressions, sum up, and in the case of the novel, reflect and illumine the roads ahead.

This does not imply more broadening of the war theme but artistic exploration of its new possibilities, a deeper probing of the commonplace.

We feel the impact of such probing in the novels of contemporary Byelorussian writers Yanka Bryl, Vasil Bykov, Alexei Karpyuk and Alexander Adamovich, all war veterans.

Ordinary Fascism

In Yanka Bryl's novel *Birds and Nests,* the protagonist is Ales Runevich, a farm lad from Western Byelorussia, who became a German prisoner of war in 1939. That was when the Nazis had just set up their inferno of wholesale murder. Ales and other prisoners watch a documentary of the Germans, robbed of every vestige of humanity by nazism and drunk with the victories they had won in Europe, charging into Soviet territory and overrunning the plains of the Ukraine and Byelorussia. It gives the Nazis a perverted pleasure to show such newsreels to the war prisoners. "Look at them grinning," thinks Ales. "Animals! They may have been humans or pigs, good or evil in their own homes, but once they crossed over into our land, they turned into murderers and thieves."

Ales realizes that fascism has many faces besides the death camp. In the German farmers and burghers he sees the terrible philistinism that proved such good soil for the growth of fascism. The victims that the Nazis herded together from every part of the world were cut off from all hope not only by barbed wire fences but by the wall of the Germans' fanatic devotion to their fuehrer. This wall blocked Ales at every step and made him shed his youthful illusions of a Tolstoyan brotherhood of man.

Now and then men and women of conscience cross his path, even in Germany. For the most part they are captives like himself, people from different countries who form a war prisoners' international in the camp. Germans, too, he finds, can be human. Ales remains eternally grateful to the German mother who feeds him and other fugitives in defiance of the fuehrer's orders. A German worker cautions him to watch his tongue, to be wary of informers. Yanka Bryl tells us throughout that at stake in the great battle against fascism were not ideals alone but the most elementary human values.

So does Vasil Bykov's *The Dead Feel No Pain.*

Controversial in many respects, it is a novel about man's moral beliefs put to the test. Vasil Bykov, too, shows us the seeds of fascism in narrow, bigoted German philistinism. He traces the process by which a human is transformed into a nazi animal.

In his novel a German private, the village teacher Engel, is taken prisoner by the Soviet troops. Though wounded, Lieutenant Vasilevich, the hero of the novel, is in charge of a party convoying Engel to the Soviet rear. In a crucial moment, when the convoy is ambushed by Nazis, Engel does not join his own men, as do the other German prisoners, nor betray the convoy by crying out. He ministers to the wounded Soviet fighting men and carries Vasilevich when the Soviet lieutenant is too weak to walk. But when the Soviet convoy finally falls into German hands, Engel once again becomes an obedient cog of the nazi war machine. At the close of the novel, obeying orders, he shoots the wounded Vasilevich, who refuses to talk.

The writer develops Engel skillfully. He personifies the narrow, middle-class indifference which first cleared the way to power for Hitler and later did not prevent him from unleashing the bloodiest war in history.

One of the great merits of both works lies in their underlying humanity, a complex twentieth century humanity, with its uncompromising hatred of all evil.

To Remain Human

On nazi-occupied Byelorussian soil, in the hinterland of the fascist troops, fought a huge army of partisans which was more than a symbol of the people's unbroken will. It was a massive force for resistance. But the price the Byelorussians paid for this warfare behind the enemy lines was enormous—one out of every four was killed.

In *Forest Odyssey,* written in the form of a partisan's notes, novelist Alexei Karpyuk says: "At times a man does not think in words but in deeds." This psychological observation is the keynote of the book, which could be described as "an event novel." The characters do not think first and then act—they act. This approach to the depiction of the war apparently stems from the author's belief that a clue to the times lies in the events and deeds alone.

Alexei Kuchinsky, the protagonist, comes from the generation shaped before the war. He is a man of action, not given to self-analysis. Therein lies both his strength and his weakness. With so direct an approach he does not see the subtle peripheries and often crucial byroads, but his determination to win is so strong, it almost borders on the fanatical. His fearlessness and courage, even recklessness, in battle make him a formidable enemy.

Novelist Alexander Adamovich, who wrote *War Under the Roofs* and *Her Sons Go into Battle,* sees the resistance movement and the war from another vantage point, through the eyes of civilians, the women, children and old people of a small industrial settlement in occupied territory.

The narrative moves along without dramatic situations or gripping plot. The writer takes us into the homes of civilians burdened by their many sorrows, which they share, as they do also their rare pleasures, their quarrels and reconciliations. But in the description of the daily life of these suffering people we sense an undercurrent of tense drama, an unremitting fight against the hated foe, the traitors and the time-servers, which goes on all the time. The atmosphere of the struggle builds up gradually, and we become aware of the perils and the heroism that constitute the daily existence of these ordinary folk.

Adamovich's novel is dedicated to the mothers who became partisans. One of them is the druggist Anna Korzun, whose three sons, like herself, are partisans.

What makes this elderly woman expose herself to the daily peril of death by joining the partisans? Through the logic of his narrative and character development, the writer reveals that the war was a test of integrity, of basic attitudes toward life and one's fellow men.

Alexander Adamovich's characters find themselves in the twisted world of the "new order" that Hitler tried to impose on the occupied territories, an "order" which trampled human dignity and aimed at turning men into beasts. There was only one way out of the bondage and savagery, the way of struggle. And Adamovich's characters chose it.

"The war of political ideas goes on at the point of the gun," reflects one of the characters."But in this world war there is a far bigger front—on which man comes to grips with what fascism is trying to do to man. . . . In the long run the final test of a political system is the man it produces."

The war in which Anna Korzun and her sons fight draws a sharp line of demarcation between humanity and inhumanity, human decency and cruelty. Before one takes a stand in that war, a stand worthy of a human being, he must rethink many established notions and truths. That is the way to victory, to the future which these people look forward to with the feeling that "much will be better than before the war; after what they have been through and pondered, people will want to live wiser and better."



ORDER

BY VASIL BYKOV

THERE HAD BEEN no signals for twenty minutes.

For twenty minutes Petrashkin, the telephone operator, had been trying to get through to Maple. He sat at the switchboard in the corner of the dugout, bent over. With the moist receiver in his hands he kept repeating the call signal Maple. They needed Maple desperately. He repeated the call imperatively, then almost tenderly. At times he would break out in a boyish cry or drop to a whisper. But Maple was silent, mysteriously vanished from the other end of the wire. The adjacent number, marked Volga in pencil, buzzed frantically, without a stop. Each buzz made the operator wince. Flipping the switch in a hurry, he clutched the receiver and mutely listened to the bark of Twenty-one—the regimental commander.

"Damn it, get me Maple! How long will it take you?" The wheeze in the deep voice was muffled by the distance. "Where is the signal officer?"

Captain Polozov did not actually hear the voice, but somehow or other he knew that the CO wanted him. He sat down next to Petrashkin, the receiver in a bony, hairy hand. His worn elderly face was the living picture of anxiety. Now it was clouded by an expression of rigid inevitability.

"Right, Comrade Twenty-one! Your order will be carried out; the line will work." There was a tense calmness in his voice. Petrashkin, his body shrunk from the autumn cold, watched the captain's deeply sunken eyes narrow even more.

To establish connection was vital. Only that could save the regiment from disaster. Nazi tanks had attacked the rear area somewhere from the flank. The transport company and headquarters platoon were fighting them. The battle was close by, but Petrashkin, his mind on the switchboard, neither saw nor heard it. All he felt was that the ground under him trembled. At times it trembled so much that sand spouted from the hole in the roof of the dugout. In the corner lumps of dry clay dropped from behind the props. In his short frontline experience Petrashkin had never been caught in anything like this. He was all on edge, afraid of the German tanks, unnerved by the regimental CO raising hell and the feverish waiting. When would they finally establish contact with the battery on which everybody now pinned hope?

In addition to Petrashkin and the signal officer, there were three other men in the dugout, which had been taken from the Germans two days before. Private Butenko, a tight-lipped stocky boy in a pea jacket with no buttons at all, looked unbelievably calm. Supporting the wall with his back, he puffed away at his half-inch-thick hand-rolled cigarette as if nothing else bothered him. Chief radioman of the regiment Sergeant Simakov, tall, handsome, with a beautiful head of hair, stood in the doorway to the trench. Everybody liked him. Even the regimental CO shook hands with the sergeant when he visited the communications center. Simakov had no job now. A mortar had demolished his radio station that morning, mortally wounding his friend Vasya Bolzin. This double loss followed by today's setback had just about driven Simakov to despair. From the trench he watched the hillock visible in the distance. It was there that the wire was broken. Aibekov, the other telephone boy, had gone out to locate the damage.

"Why is Aibekov so slow about it? Faster, faster!" Simakov muttered impatiently. "And the German, the dog, is pounding at us! We're blocked on all sides!"

Meanwhile Captain Polozov was turning the handle of another phone. His voice, totally unexcited, as though nothing unusual had happened, was ordering somebody to get through to Maple via Winter, which, Petrashkin recalled, was listed among the call signals of the divisional headquarters.

There was one more person in the dugout, a young officer about the same age as Petrashkin. He was wearing a rather short greatcoat which was still new. His thin neck stuck out of the big collar of the tunic. He would approach the switchboard, check the plugs and the ground connection. Then he would listen to the roar of the nearby battle with a worried look at the captain. Petrashkin knew neither his name nor position. This junior lieutenant had shown up at the communications center only the day before.

Just like today, Petrashkin was at the switchboard waiting for Aibekov, who had gone to fetch supper. He was listening not only to his receiver, but to every rustle in the trench, so that he immediately turned his face to the door when he heard the approaching footsteps. First he saw a pair of unfamiliar *kirza** jackboots and then the flaps of a new greatcoat. A moment later a young snub-nosed officer stepped into the dugout, bending to avoid hitting the low roof. His belt was bright, without a scratch. He was wearing a cloth garrison cap. His shoulder pieces were of gold braid with one star on the red stripe down the middle and a Signal Corps emblem. It looked as though he could hardly see in the dim light of the dugout, because he stopped at the door and asked:

* Made of tarpaulin saturated with tar.

"Is the Signal Corps officer here?"

Petrashkin examined the stranger and nodded at the captain without uttering a word. Captain Polozov was drawing a communications diagram, having made himself comfortable on a reel of red cable taken from the Germans. The young officer stepped over the threshold, clicked his heels and saluted smartly.

"Comrade Captain, Junior—" and suddenly stopped as though he stammered. In a voice that was both alarmed and overjoyed, he exclaimed: "Why, Ivan!"

Petrashkin put down the receiver and turned to them. He waited for the captain, who was not inclined to jokes, to cut short this joker of a lieutenant who messed up his official report so stupidly. But Captain Polozov did nothing of the kind. His eyes opened wide, he pushed the papers off his knees and jumped toward the newcomer, his field bag dangling at his side.

"Arkadi! Where did you come from?" He held the officer by the shoulders and stared into his face.

"From military school," replied the lieutenant, embarrassed. "First I went to the divisional HQ, now I'm here."

"What a wonderful surprise." The signal officer could not get over it.

At the time Petrashkin thought the officer was an old acquaintance, perhaps even a friend.

An hour after the lieutenant's arrival things quieted down on the forward edge. It was only on the flank, in the proximity of the third battalion, that the bursts and flares of the German machine guns and our Maxims ripped the dark sky with their tails. Dim greenish reflections darted off the walls of the dugout and the breastworks where the young officer and the captain were having a chat, a long quiet talk about remote prewar times, a city and people and a life Petrashkin knew nothing about. The boy badly wanted to sleep. He dozed off in the intervals between telephone calls, grasping parts of their talk. The two officers must have stayed up all night. At dawn came this disaster with the tanks.

"Damn bastards, they've got Aibekov," Simakov nearly cried out from the trench. "He's down. Trying to get up. No. He is lying flat."

The captain and lieutenant rushed out into the trench. Even the unperturbed Butenko clumsily got off his perch at the wall and made for the door. The three of them stood in the narrow slit of the trench for a while, looking with obvious alarm at the place where the boy had been hit. Petrashkin also wanted to see that treacherous hillock, but at that moment Volga started buzzing, the other telephone operator asking about the connection again.

Simakov cursed and forcefully waved his arm as if he wanted to smash something into the ground. Turning to the signal officer, he blurted out:

"May I try?"

Without waiting for permission, he removed his belt and greatcoat with trembling hands and jumped up onto the breastworks.

"Careful, you!" yelled the captain. He wanted to protect the radioman, at least with a kind word of advice, from the danger waiting for him on the hillock.

Minutes of weary expectation dragged like hours. Petrashkin kept blowing into the receiver hoping to get some sound of a connection at the other end. Somewhere behind, in the bowels of the earth, shell bursts echoed. Something was drumming and moaning. It was as though there were a giant underground groaning as he tried to turn from one side to the other. The sand was dripping steadily now, like water from a spout.

Petrashkin did not see what happened to Simakov. Nor did he see the silent captain tense up with pain. The officer surprised the boy with coarse invectives; in a voice so loud and agitated that Petrashkin's receiver quivered he yelled out:

"Butenko, get moving!"

It startled Petrashkin. He had never heard the captain shout so peremptorily. Butenko stood petrified for a second in his phlegmatic immobility. He narrowed his always sleepy eyes, took several hasty puffs, carefully hid the butt in the fold of his garrison cap and, with the submachine gun in hand, clumped clumsily onto the breastworks. His steps rebounded heavily in the dugout. A ball of dry clay fell on the switchboard and disintegrated.

Now there were only two left at the entrance to the trench. Captain Polozov convulsively grasped the breastworks, looking at the point in the distance Butenko was heading for. Next to him, shoulder to shoulder, stood the silent junior lieutenant. He was obviously agitated, biting his pale thin lips.

Meanwhile the air roared. Something screamed high overhead, and mortar shells shook the ground. At the hillock Butenko was having a rough time.

Petrashkin no longer heard any calls. His eyes were fixed on the captain's face. The motionless captain, with his bony chin protruding, his wiry neck and fierce bushy eyebrows was a total stranger now. Then one of his eyebrows twitched and the familiar anger clouded his eyes.

It was now Petrashkin's turn to go on that terrible but unavoidable mission. He got to his feet, his knees bent slightly. He stood like a tightly compressed spring ready to leap where three of his comrades had disappeared. He was only waiting for the officer to say the word. He heard the voice of his commander, quiet but no less severe and unfeeling: "Junior Lieutenant Polozov! Repair the line!"

The young officer shrugged nervously. He glanced obliquely at the captain as though he wanted to say something, but remained silent, his eyes full of anguish. To Petrashkin, looking on uneasily from the dugout, the captain seemed to notice nothing of all this. Strict and aloof, he waited for the order to be carried out. He looked at no one. And after a short, silent pause, the junior lieutenant jumped effortlessly onto the breastworks. His new *kirza* jackboots with rows of neat studs on the rubber soles appeared in the narrow doorway to disappear a moment later.

Alone in the trench, the captain seemed to shrink, his face twisted with pain. In utter exhaustion, which Petrashkin could not understand, the captain pushed himself against the breastworks as though he wanted to follow the man he had sent under enemy fire.

"Take to the right, to the right!" he yelled out to the junior lieutenant.

Petrashkin did not see the officer running, but it was obvious he was going wrong. The captain was crushing lumps of clay in his hands, gnashing his teeth and whispering without any hope of being heard:

"Arkadi,take to the right,my boy! Oh!"

Hearing the desperate whisper, Petrashkin suddenly realized that the captain had addressed the junior lieutenant as Polozov. He was staggered by the discovery. He felt as though he were looking at a play, hoping that tragedy would not strike the actors on stage. His body strained, a receiver at his ear, fearing even to wink, he watched the painfully distorted face of his commander.

Meanwhile, everything was in turmoil in that open autumn expanse. The shells whined as they soared through the sky, and the ground cried out. The operator at the Volga end of the wire called for Maple, but Petrashkin no longer replied.

Then the terrible thing Petrashkin was afraid of happened: Captain Polozov suddenly gasped, hid his face in his hands and staggered. Petrashkin dropped the receiver and rushed to the officer. But Polozov pulled himself together and met the operator with an impassive look in his suddenly dull eyes.

"Back to the switchboard!" he cried out.

Like Simakov, the captain loosened his belt, stripped off the field bag, threw his greatcoat into the trench and in his tunic, with the orders and medals attached, dived into the bellowing expanse of the field.

Alone, Petrashkin suddenly felt cold fear clutch at him. Chained to his switchboard, he could not see what was happening above. He did not know where the German tanks were or where the Soviet units were fighting. He felt abandoned. But the example set by his comrades, the inexplicable act of the captain, gave him the strength to control

himself. He no longer heeded the buzzing Volga. He plugged in Maple and listened. He wanted so hard to hear something that he imagined an indistinct click. It seemed that the faraway voice he wished to hear so much would finally get through to him. But as time passed nothing changed.

It was more than Petrashkin could stand. He threw the receiver onto the straw and jumped out of the dugout. About half a mile away on the beaten up slope of the hillock mortar shells burst in clusters. For some reason they inspired no fear from that distance. The whole slope was broken up into nearly identical black craters. In one of them Petrashkin saw Captain Polozov, surprisingly small from afar. There was a chance that he had found the ends of the broken cable and was now trying to drag them down the slope farther away from this frenzied dance. You could see the shell bursts splashing in front of the captain, behind him and on either side. It looked as if they erupted from below. The captain seemed totally indifferent to them; he had a job to do. Looking at the officer, Petrashkin for some reason felt no fear for his own life any longer. He was obsessed with a single wish: that everything would go well with the captain, that he should not be hit, that the job which was now more important than a man's life be finished.

But it was obvious that no one could hold out for long in this mad whirlpool of death. Practically at the foot of the hillock a broad fountain of a burst covered the captain. Petrashkin froze inside. He waited a few seconds for the dust to settle. On the edge of another crater he discerned something strangely motionless: all that was left of the Signal Corps officer.

It was his turn. Volga was connected with Maple through the switchboard. Now if the line was repaired, they would be able to talk. If it wasn't, they wouldn't need him here anyway. The power of an order not carried out made him put his hands on the breastworks and jump.

But then he heard the persistent ring of the telephone in the dugout.

It took him a while to understand what was happening. With his belly on the edge of the trench he listened for a while to the ring. Then he rushed to the telephone.

"Mignonette, Mignonette, can you hear me? Where were you? It's Maple calling!"

He felt the relief with every one of his senses. Compressing his trembling lips, he hurriedly got through to Volga and yelled into the moist receiver:

"Volga, Volga . . . Report to Twenty-one that his order has been carried out. Putting you through to Maple. What? The Signal Corps officer? They got him. They got everybody. Here's Maple."



Drawing by Alexander Blokh

Busy days of woman architect Kira Soshinskaya



TWENTIETH CENTURY WOMAN

By Inna Vasilkova



Photographs by Yuri Abramochkin









"To be a woman is not only to cherish beauty,



(Directly above) Busy as she is, Kira finds the time for a hairdo and a manicure. A woman's hair and hands must be in order, she thinks; fine clothes will not substitute.

(Left, top) Shopping is not her favorite indoor sport. Can't spare the time, she says, and besides the stores are so jammed and the stuff on sale is so standardized.

(Left, center) Kira Soshinskaya, very much the modern woman, on the telephone. An architect, she specializes in interiors for stores, restaurants, cafés and the like.

(Left, bottom) Breakfast at the Soshinskys is always a rush affair, including a hurried conference to distribute the chores. Husband Igor and daughter Alice help out.

(Right) An evening at home. Their friends are mostly architects and painters, typical Moscow intellectuals, many of them with a touch of the unconventional.



but also to remain a personality."

KIRA SOSHINSKAYA is very much the twentieth century woman. Take her job, to begin with. She is an architect. A graduate of the Moscow Architectural Institute, she works at one of the leading design offices in the capital, turning out store, restaurant and café interiors. The Russian souvenir store called Malachite Casket and the Valdai Café on the new Kalinin Prospect in the heart of Moscow are Kira's handiwork. She is now working with other architects on a tourist center for the old city of Suzdal and on the high-rise Chemistry House in Cheryomushki, one of the capital's newer residential areas.

Kira is partial to both the modern and the old Russian styles, and her designs manage to blend the two admirably. In her apartment, impressionist paintings hang next to icons.

Her working day begins at 9 A.M. and ends at 6 P.M. Not that she locks away her ideas in the case with her drafting instruments. Kira thinks her job is no less creative than the poet's or writer's and that you can't squeeze creativity into office hours. A happy line or figure of speech will occur to the poet on the street or in the metro or on a bus. So too with this architect. She gets her best ideas when she is away from the drafting board.

Kira is the architect even at home. A visit to her apartment makes that apparent. She bought her cooperative apart-



This café, in the center of Moscow, is one of Kira's projects. She keeps a sharp eye to see that it meets her specifications. Kira likes a blend of the modern and traditional.

The daily gab fest with her daughter just before going to bed is a ceremonial. "I wouldn't think of missing it," says Kira. "The day would feel incomplete."



ment three years ago and has altered it beyond recognition. Her kitchen is faced with tiles decorated with brushwork done in the old Russian style.

Architecture is her principal calling but not her only one. She is a creditable violinist and plays with the symphony orchestra of the Moscow Artists Club. She is a soon-to-be published writer; a book of her science fiction stories will be off the press shortly. What else? She has studied English. She picked up knitting in record time and made professional-looking sweaters for herself, her husband and Alice, her little daughter.

Kira refuses to be fenced in by one narrow specialty. She refuses to accept the fact that we are each of us ignoramuses in every field but our own. And like a real woman of the twentieth century, she wants to keep up with everything, including fashion, of course. She favors minis, but in moderation; over-extravagant styles, she thinks, are not for the working girl.

Her astonishing resemblance to Maya Plisetskaya, the famous prima ballerina of the Bolshoi, strikes everyone. The same elongated face, the same slightly aquiline nose, dark hair combed back smoothly and tightly compressed lips.

"Do you know that you look amazingly like Maya Plisetskaya?" was the first thing I asked Kira.

"I've been told that more than once. My friends who work in films want me to drop architecture and go in for ballet seriously so as to understudy Maya Plisetskaya in ballet and pictures," Kira said. "But I don't want to be anybody's understudy. In my opinion, a woman must have her own personality, she must be her own self."

Designing interiors and romping with daughter



BY ALEXANDER GLEZER
Poet-Translator

POETS of Georgia

They say every Georgian is a poet. Even if you don't understand the language, you know this must be true when you sit at a friendly table in Tbilisi, or in the ancient Georgian capital of Mtskheta, or in the mountainous country of Svanetia, or on the shore of the Black Sea and listen to the people speak, hear the unusual beauty and melodiousness of the words. Then you understand why Boris Pasternak said that the Georgian language was made for poetry.

Georgian literature has fifteen centuries of history behind it. By the fifth century the Bible had been translated into Georgian. Eight hundred years ago Shota Rustaveli anticipated the humanistic ideals and philosophy of the Renaissance in his epic poem *A Knight in Tiger's Skin.* He was followed by such talented poets as David Guramishvili, who became a true people's poet, the fervent romantic Nikolai Baratashvili, the epically majestic Vazha Pshavela, the subtle lyricist Akaki Tsereteli and, finally, Galaktion Tabidze, who died only recently and whom all the people knew simply by his first name. But all the outstanding names, in addition to these giants! Only two years ago there resounded the voices of the "intellectual" Simon Chikovani and the temperamental Georgi Leonidze. Still at the height of creative powers is the poet-academician Irakli Abashidze, who discovered the grave of Shota Rustaveli in Palestine.

But I shall limit myself to the young poets, those who came to literature within the past decade.



MUKHRAN MACHAVARIANI

* * *

Opposite the zoo's cast-iron lacework,
Near the stream,
zigzagging
like a verse
by Mayakovsky,
At about half past four
I met an evening from the past . . .
The Evening, naturally, did not recognize me
(I'd never worn a suit in the village),
Just simply did not recognize me . . .
And never will,
However much I try to prove
That I'm the same boy
Who, with nothing on but a shirt,
Looked for stubborn catfish
Under the stones of the cool Lashuri,
That I'm the same boy
Who carried grain
To the windmill across the river.
The boy at whom the goblin
In the grim windmill
Shook his fist in play.

Opposite the zoo's cast-iron lacework,
Near the stream,
zigzagging
like a verse
by Mayakovsky,
At about half past four
I met an evening from the past.



SHOTA NISHNIANIDZE

A NEW WAVE of Georgian poetry arose in the mid-fifties. This poetry has retained the traditions of Georgian staccato verse, but at the same time it is very modern in form, expressive, often unrestricted rhythmically, and looks the present world with all its contradictions, difficulties, anxieties and cataclysms straight in the eye. It has doubtlessly been influenced by Vladimir Mayakovsky, Walt Whitman and Pablo Neruda. It was introduced by Mukhran Machavariani, who is now 39 and resembles the mighty knights in the pictures of the ancient masters. His poetry is as impetuous as Georgia's mountain streams. It snatches you up and carries you away. . . . And the poet's images seem to be on a universal scale: "Like the sun I encompass the world and feel how sweet are the dew and the ocean waves . . ." The poet feels that he, the whole world and all that surrounds him are one:

When my whole being first the dawn perceived,
When the sun's first rays in me were gaily ringing,
A song within my soul was singing, singing . . .
I was prepared, at least I so believed,
To lift the world high up into the sky . . .
It seemed that on that day of spring's creation
All things about me shared the same sensation
Of rapture flowing o'er the brim.
And I
Was in the grip of an emotion strange:
I could not by myself be isolated,
From nothing could I be alienated . . .
A new day dawned . . .

In addition to such verse full of light, vitality and joy, Machavariani produced poems of a different kind, philosophic verse on creativity, life and death. Thus, into the mouth of the famous Georgian romantic poet Baratashvili he put words signifying that a poet, like other people, is mortal and that his body, too, grows feeble and is wearied and oppressed by old age:

Though everyone a god may call you,
Yet all the words will be in vain.
Your suffering they will make greater,
From lowliness will not sustain.

And this poem, which is called "Baratashvili's Monologue," concludes with the passionate outcry: "When will I be free of my body, of which I have grown so weary?"

A few more lines characterizing this subtle and vivid poet, the miniature "Olden Picture":

When over the land a bitter quarrel rages
Between two peasants,
then beyond the river
The belfrey stands on tiptoe, striving,
straining,
To capture their attention.
Ah, but vainly. . . .
There's nobody will see it, or will listen.

The tall, broad-shouldered and always thoughtful and unhurried Shota Nishnianidze is a poet of great spiritual magnanimity and ardent emotions. A man in the full meaning of the word, he knows how to love and to hate in earnest. For him man's greatest blessing is love of the land, of the people, of woman. If poets are compared to artists, then Nishnianidze's palette is akin to that of the old masters,

* * *

n a trail,
I am your crossroads,
ill unite you
and lead you where you wish.
n no pearl,
a simple shell,
t holds instead of pearls
a song—
ne and take it,
I will become yours . . .
ly, please, do not make an ashtray of me.
n a trail,
I am your crossroads.
ill unite you
and lead you where you wish.



MORIS POTSKHISHVILI

Wind

Say, did you really my name call
Or was it just a slip of the tongue?
Oh, you are just a babe, so small—
Go play your games with others just as young.

I fear to chain you by a charm
Of danger, hopelessness and torture,
The urge to fly that will bring you harm,
The call of hope, of love that you will nurture.

The songs of others are happier and gay,
Their lives are ones of earthly pleasure;
You're wrong to spend your time with me,
to stay—
Go, wind, with them, their joys and songs
to treasure.

Their horn of plenty is so full,
Sorrow there's last and pleasure first;
But life's a bubble, a toy for fools:
Just prick it and behold it burst.

While I am like a horse that's wild—
I loudly cry,
I never tire,
I play not with you like a child:
I charge into the blackest storm
As toward a fire.

and he applies the paint thick and for good. His verse re-creates thousand-year-old Georgia, its mountains and gorges, turbulent rivers and majestic temples, its land, lighted by the bright sun and decked with succulent grass. To this land his whole being is bound, and he, once a village boy, will love it with a profound and pure love till his dying day.

Nishnianidze is a poet with a spatial mentality. He knows how to tie together the past, present and future, to see their inseparability and the living continuity of the generations. He regards himself as a "link in the continuation of the genus." It is no happenstance that his meditations on the sources of national culture infer the dialectical unity of labor, art and the struggle for freedom. The last war made an indelible impression on the poet's work, causing him to think more and more about the fate of mankind. His poem "Cripple" begins like this:

Between two crutches hangs a man,
As hangs the day between birth and death,
As life or a shot are framed in silence,
Between two crutches hangs a man.
. . . . . .
This is a picture painted by war,
A picture with crutches for a frame.

The poet addresses the coming years, which should be better than those past:

You forests that are yet to grow,
You roots and sprouts of future saplings,
Don't grow again into gallows trees.
And may they never cut from you
Crosses for graves, or cripples' crutches
That thump along the lonely road . . .
Amen!!!

Quite different is Moris Potskhishvili, a poet sensitive to the most subtle nuance. He is an impressionist whose works are vivid and full of light. He can write both comic verse based on children's ditties or profoundly traditional classical lines. He can write a song that is sung in the streets of Tbilisi and the speciously ingenuous, but profound and modern, poem "Without Thinking They Speak."

Without thinking they speak . . .
Of coats and water and bread,
Of wind and sky overhead,
Of precious and rare merchandise,
Of wages and market price.

Without thinking they speak
Of a neighbor who's just moved in,
Of merry holiday din.
They speak about what may befall,
Or rather they speak about all.
. . . . . .
. . . And I just stand and await,
What he who thinks will say.

Moris Potskhishvili is an unusually gifted person with a range far beyond poetry. Drop in at his house. On the walls hang panels embossed on aluminum and copper, and oil paintings, some very traditional and others ultramodern. They are all his work. He is an artist, embosser and a remarkable singer. And in his art, as in his every-



TARIEL CHANTURIA

* * *

There's sorrow and softness in me
For poets tired and burnt out,
For the small crescent of the Moon, so wan,
For the volcanoes gone to sleep forever.

For the silence of the empty cities . . .
While the long day rolls to its end
The wind, bent double,
Waves,
waves good-by to the Sun
With hundreds of painted boughs.
Ah, it is so easy to look at the parting Sun
Through the dimness of the blue evening . . .
Tired but beloved poets,
You've not yet sung all your songs,
They will yet ring out
For many years to come.



GIVI GEGECHKORI

Calm, Strange Old Man

TO GALAKTION TABIDZE

Old man, so calm, unhurried,
Sometimes so solemn, steeped in thought,
So strange in dejected shyness,
In childlike naïve eyes, so gullible . . .
A face in which hides—a thought to read
betweeen the lines—
A simple call for help.

He was a child, an old, old child . . .

His elbows, faded and smooth,
So helpless as to move to bitter tears,
His clothes all awry,
His eyebrows—always a study in surprise
Seemed every day to repeat,
Seemed every hour to declare
That just one step separates the great
from the ridiculous . . .

But once, just for one minute, we forgot
That he was just a child, a very old one:
We let go his hand
And lost him in the thunder of the streets.

A big and very kind old child . . .

And now, when dusk descends
And bitter evening falls on our valley,
With fiery eyes—now clear, now hazy,
The busy city seeks him everywhere . . .

day life, are qualities that captivate everyone who knows him—complete honesty and absolute sincerity.

As for Givi Gegechkori and Tariel Chanturia, I would like to dwell on both at the same time, for they are inseparable friends and both worship the same god, that outstanding master of words Galaktion Tabidze. Both have the same attitude toward creativity, and they also go to soccer games together. But soccer is just for fun; the rest is in earnest. The poetry of both is marked with abstraction, imagery, love of metaphor, perspicuity and the ability to see the complexity of the world. Each of them is capable of saying something unexpectedly new about things old and well explored. Thousands of poems have been written about mothers, but Tariel Chanturia unfolded a mother's love in words all his own. On long winter nights the mother went to bed first to warm it for her son. She:

Got up at early dawn,
Listened to the child's soft breathing,
Swept the silence from the room.
And the dinner cooked beforehand,
And one day in silence died.

And later on the poignant, heart-piercing final lines:

Silence to trap us has undertaken,
By mem'ry we're often painfully shaken,
I feel like falling down to whine.
And me perhaps it has forsaken
To warm my grave ahead of time.

Now Givi Gegechkori can convey how "water grows heavy neath the bridge in nighttime" and how "a sudden gust of wind shook the kind light in the eyes of my loved one, the trees and the chronologies . . ." How former children of the city are children no longer.

"Somewhere poems will sing without me, like dust-covered violins," says the poet with regret. Approximately the same thoughts are expressed by Tariel Chanturia. For both of them are perpetually dissatisfied with themselves.

Curiously, in the past two years both poets have turned to epic poetry, each having written two poems about the present day and the history of their country.

Givi Gegechkori's "In a Ring of Light" is addressed to his father, who was killed in World War II. He recalls his life and vows to be faithful to his ideals. "Sunny Day" is about the thousand-year-old history of Georgia, about the severe trials that befell the little nation, about the bloody incursions of the Turks and the Persians, the pillaging of the land, the attempts to enslave it, and about the Georgians' free spirit that outlived and withstood it all without being broken.

Tariel Chanturia's "Mameluke" is about people who lost their homeland and served foreign sovereigns, were remarkable soldiers and warriors, but deep down in their souls felt a permanent longing for the land of their birth, the land they had once seen before they were abducted in their childhood and taken far away to grow up into mamelukes—men without a country. In his most recent poem Chanturia draws an image of the present-day world: a man sitting all night at his radio listens to the voices of Moscow and the Vatican, Prague and Cairo, to Earth satellites and the music of Bach. . . . A kaleidoscope from which there appears a world, beautiful and ugly, human and inhuman. The twentieth century is a century of great change, a century of good and evil, a century of unprecedented historical cataclysms.



LIYA STURUA

Hunting

When home is something they no longer need
And usual games become a painful bore,
Good solid family men
Take their brown dogs out to the fields—
Ahunting they will go.

They thrust their brawny bodies
To the Sun,
The men in search of meat,
They follow the call of blood
and of adventure . . .
Their naked skin rejoices
Burned by sweat,
burned by the Sun.
They look like square and geometric figures
As they go hunting.

They sing and laugh without reason,
Live by instinct, shed
blood.
They kill rabbits as though they were crazy
wolves,
The solid family men . . .

They run down animals
With ease and pleasure . . .
And for their sons' sakes—
So as to see them strong and tall
And grown out of their baby fat
As they mature—
The family men bring home with them
The dangerous smell of blood and killing.
They argue long and loudly,
They breathe deeply and become so simple . . .

And later,
these brawny geometric men
Go through the silent ritual of the meal,
While somewhere in the yard
The brown dogs sleep content,
Their hunger sated.

Liya Sturua is the youngest of those I shall speak of. She is a most original poet whose verse will never be confused with anyone else's. Hers is an unusual world of remarkable emotions and images, a world profound and inspired.

Each of her poems is like the work of a jeweler—it sparkles with all the colors of the rainbow. It is very sincere poetry, founded on an organic revulsion for falsehood and cruelty. That is why much of her verse is a search for man, for the human in man. The heroes of her poems, such as "Men Are Sitting . . ." and "Hunting" possess all the external attributes of health, strength and beauty. But here we see several men having a drinking bout in a tavern. They are far gone and no longer able to tell good from evil, the beautiful from the ugly: A fat and coarse dishwasher seems like a slender, blue fairy to them. And so-called "solid family men" going off to hunt are stripped of all that is kind and human. Possessed by the fever to hunt, they "live by instinct, shed blood . . . and bring home with them the dangerous smell of blood and killing".

The plot of the poem "Children Laugh" is ingenuous, but the thought is interesting. The poet is charmed by the little people drawn by children with chalk on the sidewalk: "I love it so, when children draw those innocent men on the sidewalk. The men laugh loudly at themselves and fear nothing in all the world." She knows that children are sincere and naive. They do not know how to draw but are full of generous desire to put into their little figures everything good and bright that is in themselves. It is this the poet finds important. The essence is important, the purity and selflessness. As for the faces, why let them make dots instead of eyes and sticks instead of noses.

Liya Sturua has hardly any "women's verse" about love. Her world is like a city, with every poem a street. At times we think we know some of the streets, but we discover that we really never know them to the end. The poet always adds to our knowledge and sensations.

NEXT ISSUE



How is socialism affecting the development of the contemporary revolutionary process? What is Lenin's contribution to the teaching of scientific communism? These and many other questions are answered in an interview *Lenin, Leninism and the Modern World* given by a leading Soviet sociologist and historian, and with which we start a series dedicated to the legacy of one of the greatest thinkers and statesmen of the twentieth century. During the year we plan to carry features about the life and work of the genius of the Russian revolution and universally recognized leader of the communist movement. Also read excerpts from the memoirs of Nadezhda K. Krupskaya, Lenin's wife, about Lenin's youth and the turbulent times of the revolution. Lenin's "The Three Sources and Three Component Parts of Marxism," published in 1913, speaks of the development of socialist ideas and the sections of Marxism as a science. This material is accompanied by rare photographs of Lenin, some of which are published for the first time.





Severodonetsk, a town in the Donbas coal fields in the Ukraine, is twenty-two years old. But the average age of the population is only twenty-six. The main hurdle that the builders of this relatively young coal mining and chemical industrial center had to tackle was that of laying water lines and planting park lands. The young folk here believe their major achievement is the fact that one out of every two people is an athlete. The indoor tennis courts in Severodonetsk are considered the country's best and are often the venue for USSR competitions.

***Collective Farm in the Steppes* is the title of an extensive story in pictures about a grain farm in southern Russia's wheat belt. On most farms in this Cossack region life started anew after war-time destruction. The farm chairman led in restoring the ravaged economy. Today, when the farm is back on its feet again and nets a goodly margin of profit, the basic task has become the raising of living standards. Nevertheless, the descendants of the Kuban Cossacks do not slight well-known tradition at all.**

The Tsiolkovsky Museum is a museum of cosmonautics in Kaluga, birthplace of the father of space flight. The designs, models and writings of Tsiolkovsky and many present Soviet space trophies are exhibited here.

Discussing the causes of crime, a leading Soviet jurist analyzes the roots of crime, the effect of various methods employed to extirpate it and the progress in methodology that has been made over the past ten years.

Are there civilizations elsewhere in the universe? If so, do they look like us? Scientists in diverse fields, including Ivan Yefremov, a well-known Soviet paleontologist and science fiction writer, often reflect upon such questions. He believes that a study of prehistory on the basis of fossil relics will be helpful in answering many of these questions.

COMING SOON

The Black Sea port and city of Odessa and pop star Edita Pyekha.



A JOURNEY FROM ST. P

In 1867 the czarist government sold Alaska, the Aleutian Islands and other territories in what was then called Russian America to the United States. Because of this the exploits of Russian explorers in this part of the world were largely forgotten. They make a fascinating page in history, one that deserves to be rescued from oblivion.

The names of three great Russian travelers—Grigori Shelekhov, Alexander Baranov and Nikolai Rezanov—are associated with the history and exploration of the Aleutians and the northwestern shores of America. The last of the three is the hero of this narrative.

ON AUGUST 7, 1803, the *Neva* and the *Nadezhda (Hope)*, under Captains Yuri Lisyansky and Ivan Kruzenstern, respectively, set sail from Kronstadt on the first Russian round-the-world voyage. Also aboard was Count Nikolai Rezanov, one of the masterminds of the venture. He hoped the hazardous voyage would help him get over the shock of his wife's sudden death. The count had been married to the daughter of Grigori Shelekhov, founder of the Russian-American Company.

Czar Alexander I, taking advantage of Rezanov's decision, appointed him ambassador to Japan, with instructions to deliver a personal letter to the mikado, together with several valuable gifts, the aim being to establish commercial and diplomatic relations.

The two ships stopped off at Copenhagen, Falmouth and Tenerife on the way. On December 20 they put in at Santa Catarina, Brazil, and after repairs and rerigging, rounded Cape Horn and passed the Marquesas Islands.

Upon reaching Hawaii, the ships parted company. Captain Lisyansky called on Kodiak and Novo-Arkhangelsk (now Sitka) and other Russian colonies in America, while the *Nadezhda* docked at Petropavlovsk-Kamchatski on June 14, 1804, for repairs, victualing and rerigging.

On October 8, the *Nadezhda* dropped anchor in Nagasaki, where Rezanov's group, after a delay of several months, was received with insult and humiliation. The Russian letter and gifts were rejected, and Rezanov was explicitly given to understand that no Russian vessel would be permitted to enter a Japanese port. Rezanov spent the trying months in Japan compiling a dictionary of the Japanese language and a guide for the study of Japanese.

On April 17, 1805, the *Nadezhda* left Nagasaki. After several months spent inspecting the Russian Far Eastern Coast and the islands between Russia and Japan, it docked in Petropavlovsk again. Rezanov and his retinue put ashore, leaving Captain Kruzenstern to proceed with his round-the-world voyage.

Grievously offended by the arrogance of the Japanese, Rezanov intended to return to St. Petersburg by way of Siberia to report to the czar. But he received letters ordering him to visit the Aleutian Islands and northwestern America as a correspondent, ambassador and inspector for the Russian-American Company. Rezanov himself had been one of the founders of the company, which was set up to enable Russia to compete on the world market with the English, Spaniards and the Bostonians, as the citizens of the emerging United States were then called.

On August 6, 1805, Rezanov, accompanied by a doctor and several naval officers, put in a surprise appearance at Novo-Arkhangelsk aboard the brig *Maria*. Alexander Baranov, Governor of Alaska and the Aleutians, was most apprehensive. Winter was approaching, and food was running out. The Boston ship *Juno* was then at anchor in the harbor, and Rezanov bought the ship—lock, stock and barrel—for its store of food. The winter passed in privation and alarm. In a letter to Count Nikolai Rumyantsev, czarist Minister of Commerce, Rezanov reported the plight of the Russian-American regions and announced his determination to set sail for California and there try to make commercial arrangements that would be advantageous to Russia. And here we quote:

"From my latest reports to you, dear Sir, and to the heads of the company, you should be well informed of the catastrophic plight in which I found the Russian-American regions, of the hunger we suffered all through the winter, though the provisions purchased with the *Juno* were of some relief, of the diseases that have thrown the entire territory into a most unfortunate state, and also of the resolve with which I have found myself compelled to voyage to New California, venturing out to sea with a green, scurvy-stricken crew, either to save the regions or die.

"Having set out on the twenty-fifth of February on the *Juno*, the ship I acquired from the Bostonians, my crew was soon stricken with scurvy, and barely half could man stations. Our grievous plight forced us to stop for rest. I had earlier intended to inspect the Columbia River. We caught sight of the mouth of the river on the fourteenth of March, but a contrary wind compelled us to leave. We returned the following day and were about to enter when observation indicated another latitude, and we realized that the strong current had swept us for close to 60 miles till we were now opposite Grays Harbor, whose northern shore greatly resembles the mouth of the Columbia in appearance. The offshore wind favored anchoring, and we let down a boat in which Dr. Langsdorf entered the harbor. Soundings taken in shallow water showed a depth of entry at the bar of 35 feet. He reported that it was not so impenetrable as had been described, but perhaps currents had washed the bar away. He saw plenty of smoke from the bay and therefore concluded that the place was inhabited. The roadsteads were good and well protected from wind, and the shore was sandy.

"At night, under cover of the wind, we moved away from the shore, and strong, contrary winds kept us at sea. The number of sick grew daily, one falling victim to our wanderings. Scurvy has spared none of the officers, including myself. Looking to get refreshment at the mouth of the Columbia River, the only harbor before California, we reached it by the evening of the twentieth of March and dropped anchor. We had planned to enter on the following day, but a strong current and high waves complicated entry. The Indians lighted fires on the heights, but apparently the gale hampered their wish to guide us. Eventually we found refuge by managing to cast anchor and hold on in barely 28 feet of water. Here

TERSBURG TO CALIFORNIA

BY FYODOR KONKOV

Drawing by Alexei Tertyshnikov

I must bear witness to the skill of Ensign Nikolai Khvostov. His determination alone was responsible for our salvation and our happy deliverance from the rocks. The fresh north wind plus sickness forced us to take advantage of the earliest opportunity and, with God's grace, we were favored with a lasting, auspicious wind as the moon came up. Pale and half-dead, we reached San Francisco Bay by the night of the twenty-fourth of March and in the fog dropped anchor in anticipation of morning."

Rezanov Charms the Spaniards

California was then a Spanish colony. The principal city was Monterey, San Francisco being only a small fort and inconspicuous fishing settlement on the northern fringe of the province known as New Spain. The governor was accountable to the viceroy in Mexico, who in turn was accountable to the King of Spain.

Aware of the mistrust of the Spaniards, Rezanov decided to enter the harbor of San Francisco without asking permission. If it were not granted, his ship, with almost the whole crew down with scurvy, would surely perish in the open sea; even a broadside would do them less harm. He therefore ordered full sail into the harbor. Near the fort they spotted soldiers, one of whom hailed the ship. The ship replied that it was Russian and was told to drop anchor immediately. The crew, pretending to obey the order, continued at full speed and dropped anchor only when the ship was beyond gunshot range of the fort. Soon afterward some twenty men galloped up, including the son of the commandant of San Francisco and a missionary. They entered into negotiations with Midshipman Davydov, whom Rezanov had sent ashore to inform the Spaniards that they were the very same Russians about whom, they hoped, the Spanish Government had sent word that they were headed for Monterey. However, a storm had compelled them to seek refuge in the first port at hand. Then Rezanov himself, with a retinue, went ashore and was met by Luis de Arguello, the son of the commandant. The entire party set off on foot for the fort, where the Russian seafarers were kindly received by the commandant's large family.

Rezanov was able to convince the commandant and Monterey's governor that the Russians had a solid foothold in America. He quickly found a common language with the Franciscan missionaries who agreed to trade arrangements, even though Madrid had categorically forbidden them to trade with anyone.

The Napoleonic wars were raging in Europe and California's governor was fearful of political changes that might suddenly transform Russia into Spain's enemy. Moreover, since Spain's American possessions were weaker than Russia's, the governor was concerned that a Russian fleet might drop anchor in California.

Rezanov quickly acquired a knowledge of colloquial Spanish and within a week was fast friends with the de Arguellos. The 40-year-old widower's polish and tact charmed 15-year-old Conchita, daughter of the commandant. She was so entranced by Rezanov's stories of Russia, that she said she wanted to live there, and when Rezanov proposed, she immediately accepted him.

Conchita's Catholic parents did not approve of the match. The missionaries tried to dissuade her, but she was adamant, and her parents had to yield. The missionaries insisted that the case be referred to the Pope. Rezanov agreed, but insisted on their betrothal.

"From that moment," Rezanov reported to St. Petersburg, "becoming the commandant's close relative, I governed his Catholic Majesty's port as I needed, and the governor was amazed beyond measure to see that his assurances of his sincere disposition had been highly inopportune and that he himself had become my guest."

Conchita with her dozen brothers and sisters persuaded the governor to draft a trade treaty between Alaska and California and refer it to Madrid and St. Petersburg for approval.

Sad Epilogue

The Russian seafarers stayed for some three months in hospitable California. Rezanov purchased a large store of provisions from the Franciscans at a good price, and on June 19, 1806, his ship, loaded with grain, flour, meat and other victuals, docked at Novo-Arkhangelsk.

Rezanov was eager to get back to St. Petersburg to inform the czar in person of his ambitious schemes for annexing as yet unoccupied Northern California to the Russian Empire. He had communicated the project to the czar and Minister of Commerce Rumyantsev by letter from Novo-Arkhangelsk.

His report to Count Rumyantsev said in part:

"Had the government given thought earlier to this part of the world and inherited Peter the Great's foresight, and had Behring's expedition been provided with only a little more than it was, there is every reason to believe that New California would have never been Spanish, since only in 1760 did Spain take note of it and, thanks to enterprising missionaries, assume control of this fine territory. Still unoccupied today is the territory in between, no less advantageous and most essential for us. If we let it slip through our fingers, what will posterity say?"

Rezanov also wanted the czar to sanction his marriage with Conchita. Leaving Russian America aboard the *Juno,* he crossed Kamchatka and on September 24, 1806, set out on a then most arduous journey across Siberia. Near Krasnoyarsk he was thrown from his horse and brought to the city in a mortal fever. He died there on March 1, 1807.

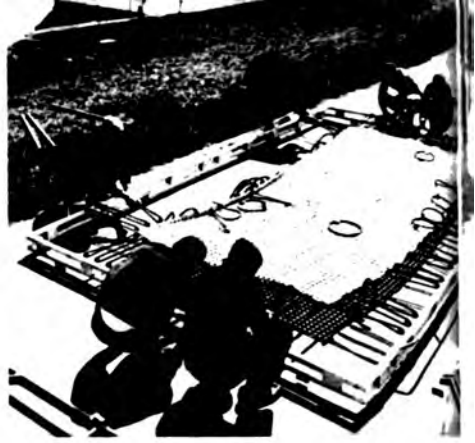
Conchita waited out the two years agreed upon and then 40 years more, refusing brilliant matches in both California and Mexico. Only in 1847, when the British seafarer George Simpson reached Monterey, did she learn of Rezanov's tragic death. She immediately left for Santa Barbara, where she entered a convent.

Rezanov's schemes were carried out by Ivan Kuskov, who in 1812 founded Russian California and famous Fort Ross, which is still standing. The river flowing in the vicinity is called Russian River to this day. In 1842 the czar ordered Ross's last governor to sell all its buildings and properties to pioneer John Sutter.

Courtesy of Nauka i Zhizn

(Left to right) First photo: Vasili Skakun, cited "Mister Jumper" by the International Acrobatics Federation. Second photo: The trampoline is light enough to carry and sets up in minutes. Third photo: Mikhail Strakhov, Honored Trainer of the Russian Federation spends a great deal of time and effort working with junior acrobats. Fourth photo: He has groomed a whole galaxy of stars. Fifth photo: A future champ tries the ups and downs of a trampoline. He generally works out on his bedspring. Photo below: At the Dombai sports camp in the Northern Caucasus.





MR. JUN



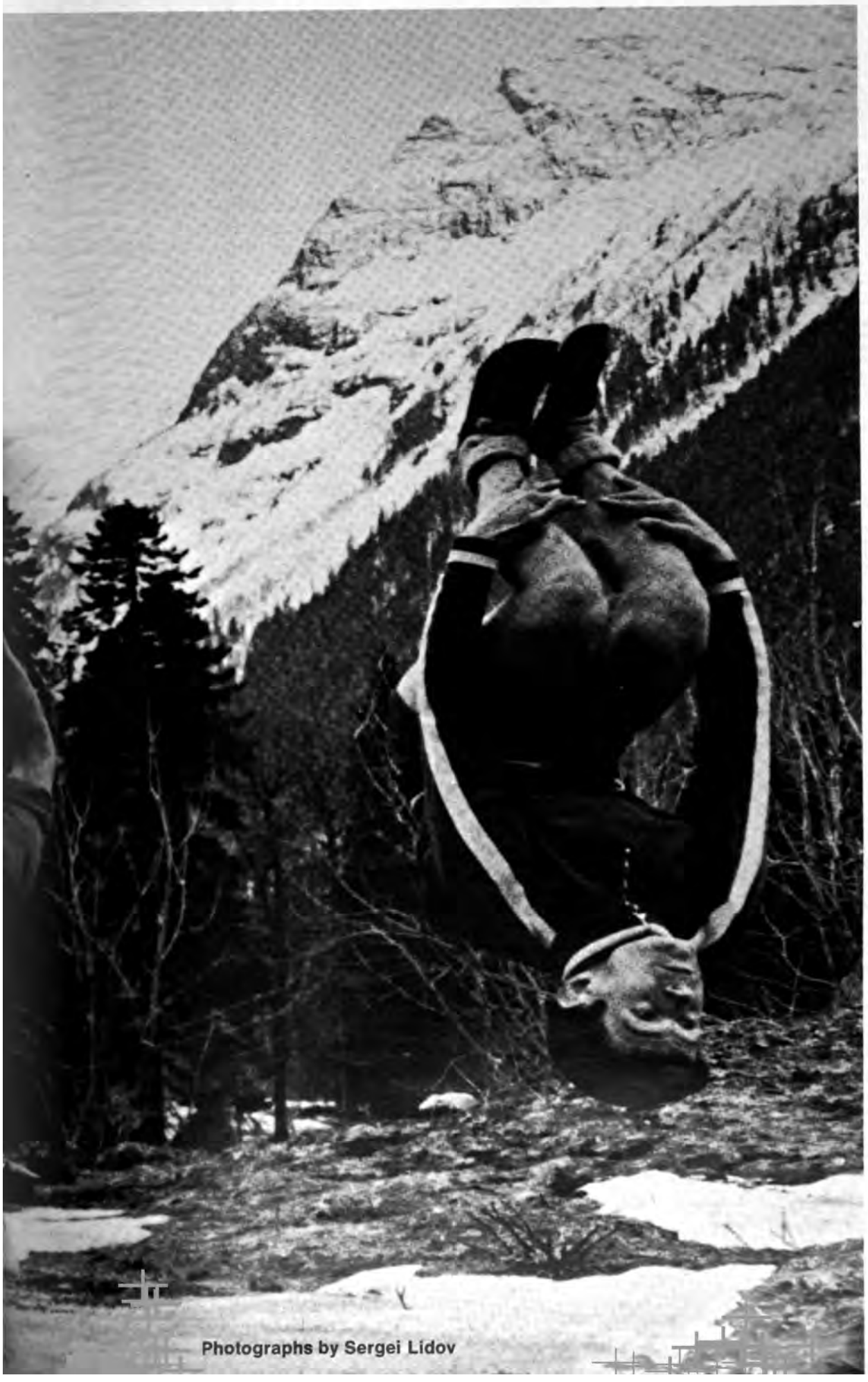






ER'S NATIVE TOWN

By Alexei Kulakov
Master of Sports



Photographs by Sergei Lidov

At the twenty-fourth USSR Acrobatics Championship held in Kiev, capital of the Ukraine, gold medals went to Vasili Skakun and Natalia Timofeyeva for the lane somersaults, and to Igor Tokar for the trampoline.

All the winners hail from Stavropol, a town in the foothills of the Caucasus. One more gold medal, in the women's trampoline event, and the Stavropol team would have made a clean sweep of the national title meet awards.

Voronezh, in the central part of the Russian Federation, is known for its gymnasts; Berdichev, in the Ukraine, for its high-jumpers; and Shakhty, in the Donbas, for its weightlifters. Stavropol has become famous for its acrobats and, what is most interesting, only in the jumps and somersaults.

Mister Jumper

Acrobatics dates back to ancient times, as testified by drawings on vases from Crete and rock images on the sepulchers of the Pharaohs. But acrobatics as a sports event is only three decades old.

The Inaugural USSR Acrobatics Championship (and the first in the world) was held in Moscow in 1939. A winner in that initial title tournament, Vladimir Leonov, now an Honored Trainer of the USSR, told me:

"The standards of our best jumpers then were about the same as those of first-category challengers today. And circus acrobats looked like magicians to us."

Competitive acrobatics had its roots in the amateur circus groups. But while borrowing the traditional circus floor jumps, and the muscle and mixed pairs and fours acts, the sportsmen added a gymnastic requirement of perfect performance, obligatory for all contenders in the floor exer-

cises. The trampoline was included in competitions in 1965.

The first man in the world who did a double somersault is mentioned in the Large Soviet Encyclopedia. Joseph Sosin, a famous Russian circus performer, did this wonder stunt in 1888, and it was repeated by his son Alexander in 1912. The third man to do a double somersault, a quarter of a century later, was Soviet circus performer Dmitri Maslyukov.

Now let us turn to the 1967 World Acrobatics Championship in London, where the trampoline was on the official program and the Soviet team's lane somersaulting on the exhibition program. This performance created a sensation and was given a standing ovation. Acrobatics experts, assembled in London from all parts of the world, were carried away.

"The Russians do the kind of jumps on the running lane that we thought were only possible on the trampoline," said a special championship bulletin. One of the star performers was Vasili Skakun, who did a series of unusually intricate double somersaults. He was rated the best jumper of all times, and the International Acrobatics Federation gave him the top award of the championship, the title of "Mister Jumper."

Measure a Thousand Times

"Mister Jumper" is a pupil of Honored Trainer of the Russian Federation Mikhail Strakhov. More than 200 people practice in Stavropol's seven acrobatics clubs. Fifty of them are masters of sports, three won national crowns in 1967 and three others in 1968. They all consider Strakhov their mentor.

Strakhov himself was the Russian Federation champion on many occasions, but he never managed to capture the USSR laurels. However, his younger brother did. Yuri Strakhov was Soviet acrobatics king from 1959 to 1964.

Yuri was still in his prime when a strapping fellow joined Mikhail's acrobatics clinic. He came from a nearby village where he had taken up acrobatics in school and had an unusually appropriate surname, Skakun, which means jumper in Russian.

It was long believed that only an extraordinarily brave man would run down a lane and somersault in the air, and that the best way to do it was to cultivate the air: "See what a reckless jump I've made? Try and beat me!"

Mikhail Strakhov scrapped this system from the very first day of his career as a trainer. Vasili Skakun, who subsequently went on to win the USSR title twice and the USSR Acrobatics Cup, had more than enough bravery, but his mentor cooled him down and taught him to master complicated jumps and somersaults sensibly and fundamentally. Strakhov's motto was and still is: "Measure a thousand times before you jump!"

I recently heard Strakhov report at a national conference on acrobatics. Of average height, lean, and with gray hair, he came to the speaker's platform with a voluminous folder, but he pushed it aside and started speaking quietly. He paused every so often and looked around the hall in embarrassment, wondering whether the listeners understood him or not. When an intermission was announced, Strakhov was mobbed, like famous screen stars are. But these people were not out for his autograph; they showered him with questions. And the questioners were the nation's top experts in acrobatics.

Taming the "Crocodile"

The trampoline in Stavropol is as popular as the volleyball net. The modern trampoline, with its light frame and yard-long legs, can be conveniently dismantled and converted to hand luggage in a matter of minutes. Wherever acrobats go, a trampoline goes with them. They assemble it swiftly and start doing the most incredible revolutions. Exhibitions of this kind, always watched by many people, are responsible for the present trampoline craze in the Stavropol area.

The first trampoline appeared in Stavropol four years ago. It was a cumbersome contraption, with a narrow, long and greenish cotton net. The acrobats nicknamed it the "crocodile." As to how the "crocodile" could be tamed, nobody knew at the time.

When I asked Igor Tokar, the 1967 USSR trampoline champion, how he started, he shrugged and replied: "We only knew that a trampoline program was out and that there would be competition in this new sport. We wanted to participate, and began practicing on the trampoline the things we were able to do on the ground."

Jokers say the modern trampoline originated from children's beds: If the spring is good, the youngster finds it more fun jumping on his bed than lying in it.

For a long time the trampoline served as an auxiliary training device for divers, airmen and even spacemen. It became an independent piece of sports apparatus in the early fifties. The International Trampoline Federation was founded, and the Inaugural World Championship was held in London in 1964. The trampoline won full recognition in the USSR the following year as a part of sports acrobatics.

The same year, 1965, "crocodiles" showed up everywhere in the Soviet Union, but it was Stavropol, and not Moscow or Leningrad, that produced the national champion. This is not accidental. You remember what Igor Tokar said: "We began practicing on the trampoline the things we were able to do on the ground."

Before he switched over to trampoline jumping, Igor qualified for the master of sports rating in the running horizontal version. The technique of somersaulting is common in acrobatic jumps. Any rotations, even the most complicated ones, like the somersault "with a twist" and the double somersault, have a kind of common pivot. This pivot was borrowed by Igor Tokar and his trainer, Vyacheslav Akinshin, to tame the "crocodile."

The Soviet trampoliners were onlookers at the 1967 World Championship in London, where the Americans took top honors. The world champs claimed that nobody else could do such tricks of theirs as the triple somersault. On hearing this, Tokar, without saying a word, jumped up on the trampoline and did a perfect triple somersault before the astonished eyes of the overseas athletes.

The Stavropol trainees have several gyms, furnished with all the necessities. Their gyms are mostly at secondary schools. For instance, the Strakhov brothers do their job as trainers at School No. 42, where Natasha Timofeyeva, the 1968 USSR champion, is a tenth grade student. Seated at the same desk with her is Sasha Timofeyev (no relation) on whom great hopes are pinned as a future topnotch trampoline performer.

This school gym has all kinds of equipment including a trampoline, a running lane and rugs.

Before I took my leave, Mikhail Strakhov said to me: "Once the thought that I'd reach the age of forty some day and would have to bid farewell to jumping scared me. It seemed to me that I simply could not live without jumps. I still think that way, even though I've stopped jumping myself. . . . But my students are doing it for me!"

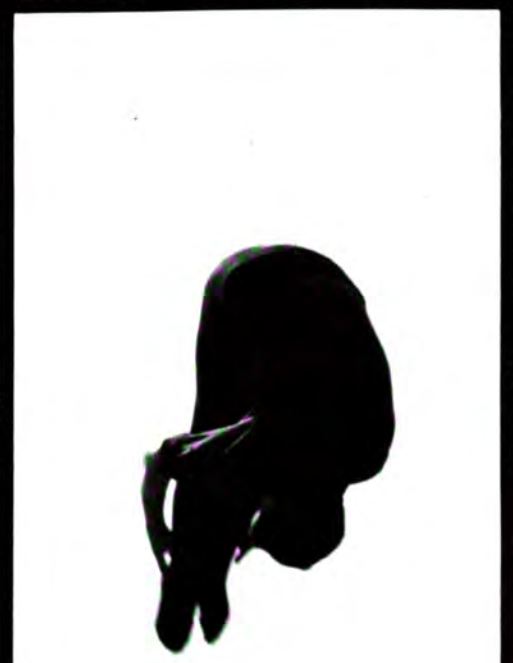
Courtesy of the magazine Smena























On the trampoline.
Photograph by Sergei Lidov

SOVIET LIFE

COLLECTIVE FARM
IN THE STEPPES

LENIN, LENINISM
AND THE MODERN WORLD

April 1969 • 35 cents

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VLADIM

1870-
-1970

IR LENIN

In 1970 the Soviet people, the peoples of socialist countries and all progressive men and women will mark the one-hundredth anniversary of Vladimir Lenin's birth. Lenin was the leader and ideologist of the world's first Socialist Revolution, a revolution which marked a turning point in the course of world development by laying the foundation stone of the socialist system.

He was the founder of the Communist Party of the Soviet Union and head of the world's first socialist state—a state whose legislative and executive powers are in the hands of the workers and farmers.

Lenin has gone down in history as the leader of the world proletariat who fought for its liberation from exploitation and for the international brotherhood of all nations and races. His ideas have influenced the progress of all of humanity.

In this issue SOVIET LIFE begins the publication of recollections about Lenin, articles and contributions on Leninism and its ties with the basic political and social problems of our time. We shall also reprint a number of Lenin's writings and other material connected with the centenary. The April 1970 issue of our magazine will be devoted entirely to Lenin.

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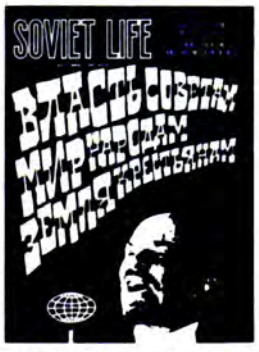
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The following is an interview given by Yuri Krasin, Doctor of Science (Philosophy), to SOVIET LIFE correspondent Lyudmila Borozdina.
Yuri Krasin, born in 1929 in Penza, is a graduate of Leningrad State University. In 1955, he defended his master's thesis and in 1965, his doctorate. A professor at the Moscow State University, he lectures on philosophy and problems of scientific communism. In 1966 he attended the International Congress of Sociologists in Évian-les-Bains, France.
He is the author of the books: "Lenin, Revolution and Our Age", Moscow, 1967; "'Sociology of Revolution' Versus Revolution", Moscow, 1966; "The Leninist Theory of Socialist Revolution", Leningrad, 1960.

QUESTION: Lenin's life was inseparably linked with preparing and leading the socialist revolution in Russia. He was convinced of the inevitability of socialism's victory throughout the world. What was this conviction based on?

ANSWER: Marx and Lenin deduced the historic inevitability of the victory of the socialist system from the internal development of the laws of capitalism itself. Metaphorically speaking, by developing large-scale production, capitalism releases a jinni from a bottle and is unable to control it.

Capitalist production is increasingly socialized, which creates prerequisites for a fundamentally new social order. An intricate system of relationships requiring planned social regulation is established between factories, sectors of the economy and between countries. But in capitalist countries control over the functioning of social production which is turning into a single entity is concentrated in the hands of the ruling elite. This contradiction can be resolved only in one way: transition to a system of public ownership, which comprises the economic basis of socialism. This is the well-known law of social development discovered by Marx: The growth of society's productive forces leads to the replacement of the obsolete production relations with new ones which no longer hamper the grown productive forces. Capitalism, simultaneously with creating large-scale social production, this objective prerequisite for the transition to socialism, also creates the subjective force of the revolution, the working class.

QUESTION: In contrast to the views of Marx and Lenin, many Western sociologists expound the idea of "postcapitalist" and "post-industrial" societies. What can you tell us on this score?

ANSWER: The authors of these ideas usually refer to the changes taking place in capital-

LENIN,
LENINISM AND THE MODERN WORLD

ism in our time. True enough, changes do take place. In recent decades capitalism has been considerably altered. These changes are felt both in the economy and in society, and capitalist property relations are being modified. Financial economic groups have taken the place of the individual capitalist, the private entrepreneur. The composition of the groups is quite diverse and heterogeneous. Along with the big capitalists, they include influential managers, high government officials and the military. There is an intricate interlocking of ties within financial economic groups and among them. State interference in the economy has been greatly extended, and new forms of state-monopoly regulation have been devised. All these shifts show that capitalism is adapting itself to the new situation. At times this evolution is interpreted as the disappearance of capitalism. But this is not the case at all. Notwithstanding all these changes, the solution of vital problems affecting the life of the nation is controlled by a small group of monopolies closely linked with the state. It exerts decisive influence on the entire policy of the government. Development of the economy, culture and the country's policies are subordinated to its interests and aims. In other words, the exploiting substance of the capitalist system has been fully preserved.

QUESTION: "Convergence" is a concept of frequent discussion today. What is your attitude toward this theory?

ANSWER: Everything depends on the meaning invested in this concept. The term "convergence" could be acceptable if it designated processes which consist in that, despite the wishes of the capitalists, prerequisites for the transition to socialism are increasingly maturing within the bounds of capitalism. But for a single socioeconomic system to be formed radical changes in the property relations in the capitalist countries are needed, a social revolution is required. Consequently, "convergence," if this term is to be used, will not occur as a result of the "synthesis" or "fusion" of two social systems, but on the basis of the more progressive social system, that is, socialism, which is coming to take the place of capitalism. Of course, by that time socialism too will be considerably improved and enriched by the historic experience of different nations and countries.

QUESTION: There is an opinion that the scientific and technological revolution has ushered in the era of a "consumer society," has given capitalism a "second wind." Is that so?

ANSWER: Capitalism indeed is trying to utilize the fruits of the scientific and technological revolution to stabilize its position. It has succeeded in achieving certain results. Scientific and technological progress has provided capitalism with reserves for making concessions to the working class in satisfying its prime needs. These concessions are advertised as the advent of the "consumer society," which supposedly cures capitalism of its basic ills. In reality, the "consumer society" represents a restricted and capitalistically-warped use of the rich potentialities the scientific and technological revolution opens to society. The colossal rise in labor productivity holds out the prospect of an "affluent" society which under socialism can release human resources and energies for an unprecedented advance of spiritual culture. But the "consumer society" steers development into the channel of more refined forms of socially enslaving the individual. Worship of goods and a consumer psychology are cultivated. From a means of satisfying human needs, things turn into an aim in themselves. Their possession becomes a matter of prestige, a sign of a man's social status. Acquisition claims all the energies of a person, reduces to naught his social activity and creates an atmosphere of conformism. Man is turned into a slave of things and reconciles himself to social restrictions. The "consumer society" is not a way out of capitalism's contradictions, but an attempt to preserve capitalism by cultivating a conformist consumer ideology.

QUESTION: But can it be considered that the scientific and technological revolution reinforces the positions of capitalism?

ANSWER: It is hardly possible to give a simple answer to this question. Of course, the use of its results produces a temporary stabilizing effect. But the scientific and technological revolution creates the prerequisites for reproducing the antagonisms of the capitalist system on an extended basis. The conformism of the "consumer society" is a tendency underlying the strategy of monopoly capital, aimed at perpetuating capitalism. At the same time, other, stronger tendencies operate to undermine conformism.

QUESTION: What do you have in mind?

ANSWER: To begin with, the following: The scientific and technological revolution ultimately leads to the almost complete automation of production. This entails a sharp reduction in the number of people engaged in production. Experts predict that by the beginning of the twenty-first century considerably less than half of the gainfully employed population will be engaged in material production in developed countries.

In the socialist society the release of people from material production makes it possible to extend the sphere of spiritual production, and this will be a factor in accelerating social progress. Such a way out is impossible for capitalism. Under this social system, capital and labor, as a rule, are invested only in the spheres of activity which yield a profit. It is clear that the creation of spiritual values cannot be based on profit motives only. Here loftier stimuli are needed: the age-old striving of the human spirit for the cognition of reality, the striving for beauty. These ideas themselves may sound like romantic inventions. Yet all this is necessary for the creation of truly human spiritual values. Under capitalism, however, even if we assume for a single moment that the needs of people not engaged in useful labor are satisfied by social security allowances, such a picture could hardly be inspiring. People would not tolerate a system in which the intensive labor of some was combined with the degrading dependent position of others. Nor can there be any historic justification of such a system, because it would signify the waste of a colossal potential of society's physical and spiritual energies.

QUESTION: Does the scientific and technological revolution engender other tendencies, too, under capitalism?

ANSWER: Certainly. I think that the scientific and technological revolution creates the problem of personnel of high skill and culture, a problem insoluble for capitalism. Automation changes the content of labor in production. Man, as it were, takes a place next to the production process and exercises the functions of controlling, regulating and improving it. By its very nature labor increasingly turns into a creative endeavor and makes new demands on the worker. He must possess extensive technical knowledge, have a broader horizon and the ability to swiftly change his occupation. These qualities are associated with a rise in general culture, social interests and social activity of the individual, which destroys the conformism of the "consumer society."

In the final analysis, the scientific and technological revolution undermines the positions of capitalism. Creating some possibilities for temporary maneuvering on the basis of capitalism, it simultaneously strengthens the objective prerequisites for transition to socialism. I am not discussing the point that the "consumer society" has not wiped out, and is unable to wipe out, poverty. Capitalism has accentuated the contrast between riches and poverty, particularly if we include into the picture the less developed areas of the world.

The scientific and technological revolution ultimately leads to a situation in which the entire mechanism of mankind's social production turns into a single economic complex. But as such it demands social, purposeful use. In a certain sense it may be said that the scientific and technological revolution is making the demand for the transition to socialism more pressing.

QUESTION: If transition to socialism is a historic necessity, what is the purpose of the conscious activity of people, social groups and parties in favor of socialism?

ANSWER: You anticipated me: I was going to speak about it. Both Marx and Lenin demonstrate in their works that the laws of historic development are always displayed through the activity of people, and not outside of it. Only people make history, but they make it under definite historic conditions, and these conditions shape their views, aims and ideas. Only the energetic activity of the people can bring about the victory of socialism. This, of course, depends on the degree to which progressive social forces understand the ripe historic tasks.

QUESTION: How do you assess the rather widespread opinion that Marxism-Leninism supposedly deprives political forces and the individual of freedom of choice?

ANSWER: This is a wrong opinion. It apparently stems from the failure to understand the dialectics of the relationship between the objective and subjective factors in social development. From the viewpoint of Marxism-Leninism, the laws of history restrict the freedom of choice. But this restriction is not an imperative. In social life the freedom of choice can be restricted by a number of factors, including definite social conditions and the forces operating in these conditions. If you ignore them, you will fail. But history does not run in a straight line. At each given moment it opens a number of possibilities for development—which of them will be realized depends on the struggle of the political forces standing behind them. There are also situations in which the objective opportunities are missed because of the weakness of progressive political forces. It goes without saying that if the need is great, it will again create the respective possibilities of social development. The Marxist-Leninist concept of the historic process rejects fatalism, according to which all events are inevitable. Economic necessity determines the course of history. But it breaks its way through the intricate interaction of social and political forces, including those which operate consciously.

QUESTION: Does this also apply to the necessity for the transition to socialism?

ANSWER: Yes. When I spoke of the imperative demand for transition to socialism, I had in mind the great necessity for mankind's development in that direction. This makes for broad awareness of the need for socialism and awakens revolutionary energy in the struggle for it.

QUESTION: And so we are back to the question of revolution. In our days, however, this term is used so indiscriminately that it would be useful to recall the Marxist-Leninist interpretation of this concept.

ANSWER: Indeed, the word "revolution" is now used very frequently and in the most diverse meanings. There is talk of "industrial revolution," "revolution of the mass media," and so on. Without challenging the legitimacy of using this term in different contexts, I want to stress that in Marxism-Leninism the concept "revolution" denotes radical qualitative changes both in nature and in society. As applied to society, this concept means the transition from one system of socio-economic relations to another. "Socialist revolution" implies the transition from capitalism to socialism. There are many different misconceptions on this score. One of the most widespread is to identify revolution with armed struggle. Yet, this is only one form of revolution. It occurs where dictatorial despotic regimes exist, where the will of the majority is openly trampled under foot and the revolutionary action of the people is crushed by the repressive state agencies. But another form is possible—the peaceful form of revolution. It presupposes winning over to the side of the revolution such an overwhelming majority of the nation that it would make impossible or absolutely hopeless armed resistance to the will of this majority by the ruling upper crust. But regardless of the form, Lenin held that the transfer of power to the working class is the decisive attribute and condition of socialist revolution.

QUESTION: Why the working class?

ANSWER: This is determined by its position in the system of social relations. The working class is connected with large-scale modern production, it holds the central place in social production. It is a class not connected with private property. It is interested in the transition to socialism, in the social regulation of production. That is why it acts as the main driving force of the socialist revolution.

QUESTION: Considerable changes in the position of the working class have recently occurred in the capitalist countries: Its skill and culture have risen and its living standard has improved; in some cases workers even own shares of the companies where they are employed. In this connection the opinion is at times voiced about the decline in the revolutionary potential of the working class. What do you think about it?

ANSWER: First of all, it seems to me that this problem must not be simplified. The role of the working class is a question of world historical significance. In this respect the international working class has scored signal successes, embodied above all in the new system of social relations, socialism, which has triumphed in a group of countries. Thereby the working class placed itself in the center of our epoch and consolidated its leading role in world progress.

QUESTION: What can you say about the working class in the capitalist countries?

ANSWER: These questions are inseparably linked. It is largely due to the world historical victories of socialism that the working class in the capitalist countries, too, has registered big achievements. The working class of many capitalist countries has wrested substantial social gains and democratic rights from the monopoly bourgeoisie. The political prestige of this class is higher than ever before. The powers that be are compelled to reckon with it when making decisions affecting fundamental aspects of a nation's life. At the same time, there are difficulties in the working-class movement in certain areas of the world. In particular, in some developed capitalist countries the working class feels the impact of consumer conformism. This gives rise to opportunist sentiments in its midst, to Babbit satisfaction with the existing order of things. This is the source of revisionist tendencies in the working-class movement expressed in the ideology of class collaboration, "social partnership," and so on.

QUESTION: Do these tendencies hamper the growth of the working-class movement?

ANSWER: I would say that under any circumstances they do not signify a decline in the revolutionary potential of the working class. First, these tendencies affect only certain groups or sections of the working class; second, the revolutionary potentialities of a class are ultimately determined by its position in the system of socio-economic relations. In this sense the position of the working class has not changed: As hitherto, it is an exploited class. The difficulties of the working-class movement in developed capitalist countries are difficulties of growth, difficulties of transition to a higher level of demands. In many countries these demands have already been put forward. The workers are beginning to demand positions in administering the economy and the state, conforming to their actual role in society's life. In some places the demand is made for participation of workers in the management of enterprises, and even in general national regulation of the economy through representatives of workers' parties and trade union organizations. As long as the working class does not achieve social equality—and this is possible only under socialism—it will remain the main social basis of anti capitalist sentiments and action.

QUESTION: The works of Professor Herbert Marcuse enjoy popularity among radical intellectuals in Western countries, especially students. What is your appraisal of his views?

ANSWER: Marcuse's works sharply criticize contemporary capitalism and demonstrate the hostility of this system toward man, toward the spiritual development of mankind. At the same time, Marcuse's views are striking for their profound, I would say, hopeless pessimism. I assume this is explained by the fallacy of some of his fundamental premises. He holds that the progress of technology enslaves man. Yet, the crux of the matter is not technology, but its capitalist application. Under socialism, the progress of technology, on

the contrary, creates the broadest opportunities for the all-round development of the individual and society. To my mind the tragedy of people like Professor Marcuse is that they are separated from the social forces capable of resisting capitalism. At times they do not even see them. Marcuse, for example, thinks that now only small groups of radical intellectuals and the dwellers of the ghettos act as a revolutionary force in capitalist countries. He himself admits that these groups are powerless to change the existing system of social relations. The pessimism of his concept is determined by the exclusion of the working class, the main force, from the revolutionary forces. Nor can Marxists agree with Marcuse's thesis about the "convergence" of capitalism and socialism.

QUESTION: You have mentioned the influence exerted by socialism on the contemporary revolutionary process. Could you discuss this question in greater detail?

ANSWER: World socialism is the leading factor in the social revolution of the twentieth century. Its appearance has changed the relationship of forces in the world. This is the main thing. But of no less importance is the force of the positive example offered by socialism. Unfortunately, it so happened historically—and Lenin mentioned this more than once—that socialism was first victorious not in the most developed countries. Economic backwardness prevented socialism from graphically demonstrating, at once and along all lines, its superiority as compared with developed capitalist countries. At present the developed socialist countries are advancing to the forefront of progress. This shows that their influence on historic development will rise.

QUESTION: But socialism, too, has its difficulties and problems, isn't that so?

ANSWER: Just as any developing phenomenon does. The birth and development of socialism is not an easy process. It involves the surmounting of colossal difficulties which are all the greater because socialism, as I have already said, was not first victorious in the most developed countries. From the very outset it ran up against the inadequacy of the socio-economic conditions: the absence of the traditions of bourgeois democracy and extreme backwardness. If we compare the point from which socialism started with its present position, colossal progress is evident.

QUESTION: The enemies of socialism often claim that it restricts democracy. Is this so?

ANSWER: Not at all. Socialism, far from restricting, for the first time creates the basis for actual, and not formal, democracy. It abolishes the privileged position of any class or social group in the economy. This is a decisive step toward social equality of people. In the Soviet Union, socialist democracy has attained a high degree of development. But no one regards this level as the ideal. The ideal of Leninism is complete rule of the people. This requires an exceedingly high development of political consciousness, general culture and the habits and traditions of democracy. Much is done in the Soviet Union to enroll all Soviet people in state activity. Many prejudiced notions of Soviet democracy are current in the West. This is the case because little is known about the practical activities of the Soviets and other mass organizations which represent the emerging forms of the rule of the people, for which Marxists strive.

QUESTION: You spoke of the difficulties in socialism's development. What is the nature of the difficulties socialism now encounters in China?

ANSWER: China is an example of the contradictions which arise in the course of socialism's development in an inadequate socioeconomic environment. The old socioeconomic relations make themselves felt in petty-bourgeois ultrarevolutionism and nationalism. This shows that the development of the revolutionary process does not run in a straight line: It encounters serious difficulties, and there are zigzags and setbacks at times.

QUESTION: Some political leaders proclaim themselves the true custodians of Leninism, but their actions deviate from it. What is the objective criterion of fidelity to Leninism?

ANSWER: The objective criterion is the unity of theory and practice. Today Leninism is not merely a theory, it is the half-century history of real socialism. It is this history that has confirmed the correctness of Leninism's general importance. Practical work for socialism by other peoples will further enrich Leninism, casting aside everything that is false. Only he is loyal to Leninism who in action applies the principles of Leninism, naturally, taking into account the distinctions of his country. Defense of Leninism in words and distorting it in action is hypocrisy of the worst order.

QUESTION: But the objective conditions of different countries are not the same. Does this lead to a diversity of forms in the transition to socialism?

ANSWER: Of course. The specific conditions of different countries affect the forms and rates of the revolutionary process and the approach to general principles. This is indisputable. It was Lenin who emphasized that the forms of transition to socialism by various countries will be noted for their diversity. But for all this specificity of the forms, there are some objective general laws without which the victory of socialism is impossible. It is necessary to change the property and power relations. It is because Marxism-Leninism discovered these general laws that it is an international doctrine.

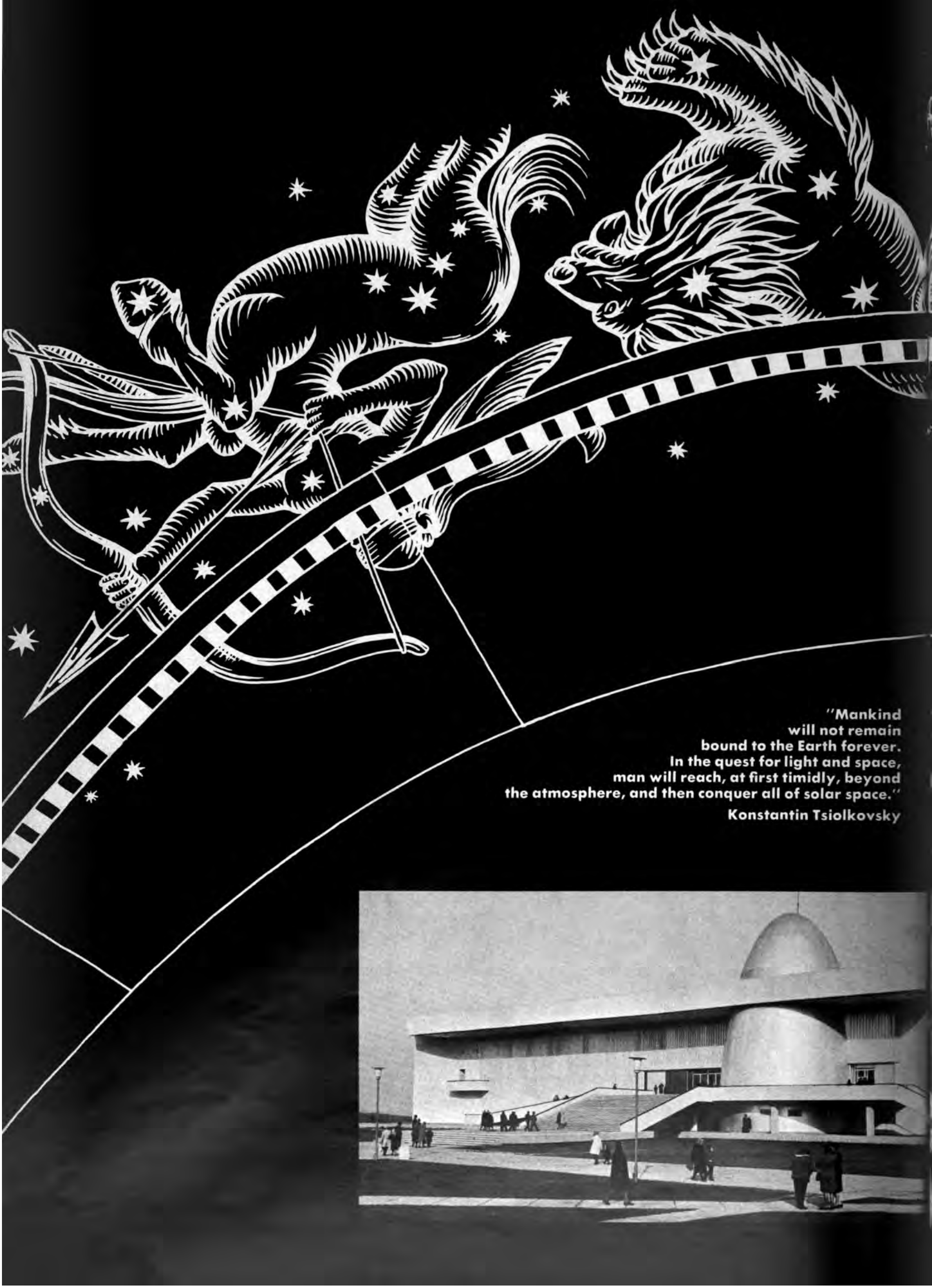
QUESTION: Nationalism is on the increase in the contemporary world. What about the claim of the enemies of Leninism that nationalism is the reef which will wreck the ship of Marxism-Leninism?

ANSWER: Nationalism has developed considerably under present-day conditions. For some Marxists this phenomenon has been unexpected in a way. Yet, Lenin foresaw the advance of nationalism. It is necessary to understand the reasons for it. Nationalism is a by-product of the rapid growth of national consciousness. The postwar years have witnessed the liberation of many peoples in former colonies which have gained national statehood. The growth of national consciousness, along with positive elements, also temporarily brings adverse factors, namely, the livening up of nationalist tendencies. Leninism sees nothing tragic in this. The Leninist teachings have always considered national interests, and the experience of socialism has demonstrated that Leninism also actually solves the national question, that it creates conditions for the drawing together of nations and their cooperation in solving common international tasks. It goes without saying that nationalist isolationist tendencies adversely affect the development of the working-class and the communist movement. But the struggle of the international working class has always demonstrated that these tendencies have no prospect and will be eliminated, and will demonstrate this even more fully in the future.

QUESTION: Our time puts forward new problems which mankind has not faced before. The scientific and technological revolution changes the very foundation of material production and causes far-reaching social consequences. The problem of the "demographic explosion" is an acute problem. There is also talk of an "information explosion." Do not these and other new problems go beyond the bounds of Leninism?

ANSWER: There are many questions about which neither Marx nor Lenin mentioned a single word. But that is not the point at all. They finished the main thing—truly scientific principles for approaching reality. Lenin liked to repeat that Marxism is not a dogma but a guide to action. In our opinion, it is Marxism-Leninism that affords the most scientific approach to solving the problems of our age. Marxists understand well the importance of all these problems and are working to solve them. Of course, Marxist thought, as any social thought (and not only social), might lag behind within certain bounds in understanding new phenomena. But that is a different question. Marxism-Leninism teaches people to study objective reality, to explore ways for influencing, through theory and practical activity, the course of historic development in a progressive direction. Leninism is the most effective philosophy of historic action. It orients mankind in remaking the world in conformity with the mature needs of social progress.

Here is the source of strength and vitality of the Leninist teachings. Here is the main reason of its, we might safely say, unsurpassed impact on the minds and hearts of hundreds of millions of people in every part of the world. Centuries will pass and humanity will face new problems. But the principles of the methodology of Marxism-Leninism, its realistic and at the same time revolutionary dialectical approach to reality, will even then furnish the basis for the scientific world outlook of mankind.



"Mankind
will not remain
bound to the Earth forever.
In the quest for light and space,
man will reach, at first timidly, beyond
the atmosphere, and then conquer all of solar space."
Konstantin Tsiolkovsky



COSMONAUTICS MUSEUM IN KALUGA

By Natalia Khromova
Special APN Correspondent



Andrian Nikolayev, who commands the spacemen's unit, at the opening of the world's first cosmonautics museum in October 1967.

ON A SUMMER DAY in 1930 the first plywood glider made by young technology lovers of the city of Kaluga was "launched" from the steep bank of the Oka River. It is said that the modest Kaluga teacher Konstantin Tsiolkovsky—that eccentric genius whose name has gone down in the annals of cosmonautics—was a witness to this boys' triumph.

In the years when man was just learning how to fly, Tsiolkovsky proved that interstellar flights are possible and expounded the theory of the operation of space rockets. And every hesitant step toward the realization of his plans gratified the elderly man.

Many years later, in 1961, the world's first cosmonaut Yuri Gagarin lay the cornerstone of the future Cosmonautics Palace on the same steep bank of the Oka. At the same time a competition was announced for the best architectural project for a cosmonautics museum.

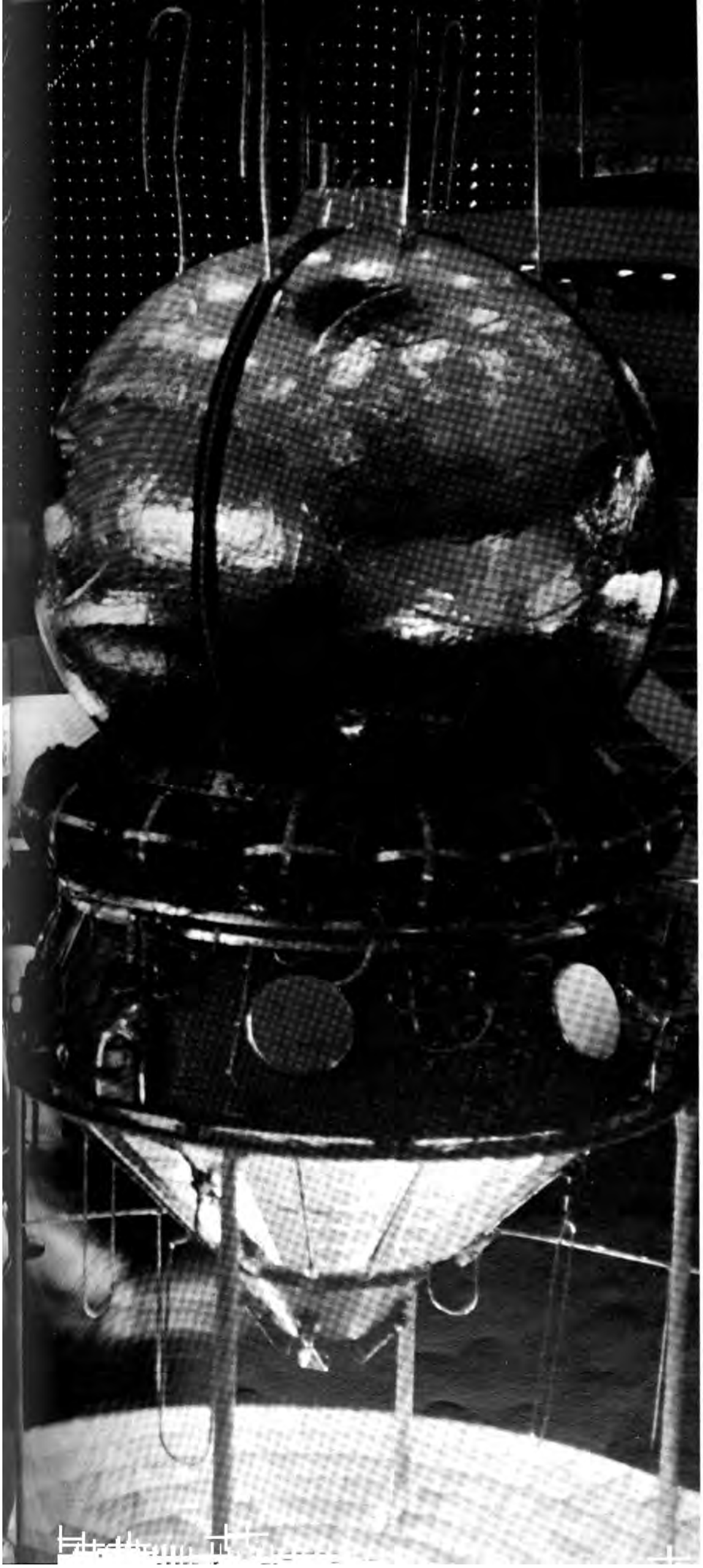
The white, airy building along modern lines, with an upstreaming planetarium dome, has blended harmonically with the landscape. It seems that in the lanes of the old park one can still hear the footsteps of the great scientist, now buried under a tall obelisk not far from the museum. The dark pine forest on the opposite bank of the river provides a background for the dazzling white of the building.

The public first went up the marble stairs of the museum on October 3, 1967. The K. E. Tsiolkovsky State Museum of Cosmonautics, to use its official name, was opened.

More than three milleniums have passed since the Greeks created the poetical myth about Daedalus and Icarus. All this time man has kept trying to reach the sky, and this brought him much tragedy and joy. The museum acquaints one with all of man's endeavors, from the first illuminating rockets and fireworks to the world-famous *Vostok*, from balloons to artificial earth satellites.

In the middle of the museum's first hall,





This hall displays space equipment, including a replica of the cabin in Gagarin's ship and an electronic calendar of space events.

which contains materials devoted to the life and activity of "Man of the Universe," there is a rocket recreated from the sketches and drawings of its inventor.

For many of today's achievements man is indebted to the modest teacher and dreamer from Kaluga, who studied for hours the flight of birds, sat long nights over complex formulas, and produced intricate parts of wondrous machines that astonished the countryfolk on homemade wood-turning lathes.

On the following day after his space flight in 1961, Yuri Gagarin said to a *Pravda* correspondent:

"I am simply astonished at how well our remarkable scientist could foresee all that which I had to experience."

The next hall of the museum is devoted to cosmonautics of today. On the wall are bas-reliefs of Tsiolkovsky's successors: Academician Sergei Korolyov, engineer and scientist Friedrich Zander and the gifted self-taught mechanic Yuri Kondratyuk, who simultaneously and independently of Tsiolkovsky developed the theory of the rocket engine.

This hall illustrates the whole history of Soviet rocket engineering: silvery rockets, automatic space stations with insect-like antennae, cosmic vehicles, equipment of space pilots, photographs of animals that have traveled in space and emblems delivered by Soviet rockets to the Moon and Venus.

A chronology of space flights supplies the visitors with 800 answers on the history of space conquest. And many of their questions are answered in the words of Konstantin Tsiolkovsky.

Probably the best and most that could be said about this scientist and man belongs to Academician Korolyov: "Time often mercilessly erases the features of the past, but the ideas and work of Konstantin Tsiolkovsky will attract more and more attention as rocketry develops."

COLLECTIVE FARM IN THE STEPPES

By Irina Kalitenko
Photographs by
Vsevolod Tarasevich



No matter from what angle you look at the stanitsa of Platnirovskaya you see fruit trees. They line the highway and the streets. The sun-ripened apricots and plums hanging from the trees almost hide the houses, of which there are many: The stanitsa has a population of 15,000.

Platnirovskaya stands in the steppes along the Kuban River, in the southern part of Russia, rich country that caught the fancy of the Cossacks who so courageously "guarded" Catherine II, Empress of Russia. She promised them the Kuban country for their exemplary military service.

Catherine kept her word. In 1792 she gave the Cossacks a title deed to all the land along both banks of the Kuban. With the land came large pensions and other privileges.

The Cossacks transformed the Kuban area into the southern bulwark of the Russian state. They built forty large villages around Ekaterinodar, now the city of Krasnodar. Platnirovskaya was one of them.



In the eighteenth century, when the Kuban was first settled, the tall grass stretched for hundreds of miles unbroken by a tree. The fertile steppe soil made the Kuban the country's breadbasket.



Although livestock is a secondary activity, the cattle farms are continually being enlarged.

...e I say about the soil of the Kuban: "Plant a shaft and you'll grow a carriage." The ...ginal ...ters were Cossacks, who set up their picturesque villages on these shores.

This collective farm in Platnirovskaya is typical of the Kuban. The big and versatile farm has almost 45,000 acres of plowland and an income of more than nine million rubles a year.



Trofim Tretyakov, the farm chairman, is well over 60. He has been managing this big enterprise for 18 years now. His early years in charge, during the postwar period, were difficult. There was a shortage of everything—machines, manpower, fertilizer. Food had to be raised for a country that was recovering from a ruinous war. Kuban farmers had to tighten their belts, send their surplus to areas with less fertile soil. There were moments of satisfaction, too. Tretyakov can take credit for the steady growth in wheat crops. Bumper yields are the expected thing now.



THE STANITSA* of Platnirovskaya is now the headquarters of a collective farm named after the revolutionary hero Sergei Kirov.

"A collective farm," say the Rules of the Agricultural Artel, "is a cooperative organization of people who have voluntarily joined to do large-scale farming based on the principles of common ownership of the means of production and collective work. . . . To guide the work of the collective farm, its members elect a board."

It is with the board that I begin my story.

I went to the farm office early one morning and found only one man there, Vasili Kozlov, the assistant chairman. A middle-aged man with a worried look on his face, his glance took in everything. At the height of the harvest season, and especially in fine weather, assistant chairmen of collective farms have no time to waste on journalists. Kozlov nodded, asked me to sit down and turned back to his work.

"We've had a lot of rain and haven't been able to get the harvest in," he remarked, leafing through the papers on his desk. "The grain has begun to turn brown around the roots. That means it won't be top quality."

After a pause he went on:

"Now that the weather is good, we're rushed. Buses took the people out to the fields at dawn. I'm waiting here for our young folks."

People kept opening the door and walking in without knocking as they would at home. Kozlov listened to what they had to say without interrupting and did not let them interrupt him when he spoke.

"I'm going to Krasnodar and I need money for visual aids," a short, elderly woman in a white kerchief told him.

Maria Skub is in charge of the kindergartens at the collective farm, a job she has held for 35 years.

She and Kozlov agreed on the sum she was to spend.

"By the way," said Kozlov, "don't have anything more to do with that Art Fund, Maria." He turned to me. "We asked the Art Fund to decorate two rooms with wall paintings at our "Tower" kindergarten, the one where the children live all week. They showed us a sketch of the drawings they had in mind—a frog, a goldfish and a couple of roosters—and asked 4,000 rubles for the work. We're not poor and we're not stingy, particularly when it comes to the children. But that's outrageous."

The next visitor was a young woman, Violetta Butenko, in charge of the children's section at the Palace of Culture, the farm's recreation center.

"What about that trip to Volgograd that we promised the youngsters?" she asked Kozlov. "Vacation is ending and we haven't done anything about it."

"Going to Volgograd is not like going to Krasnodar," Kozlov grumbled. "It's going to cost us money. Oh, all right. Make up a list of those who want to go. Better get in touch with some school in Volgograd and see if your travelers can be put up there."

"Shall we go by train?"

"No, certainly not. No point spending two days in a train in the heat. Take a plane."

The phone rang. Kozlov lifted the receiver. He listened for a moment, then yelled:

"What do you mean, they don't work? At

* Cossack village or commune





The "Best Plowman" contest has become a local tradition. After the last patch is plowed up (top center), the judges name the winner on the spot. Awaiting the top three is an honor pedestal (right) and a cash prize.



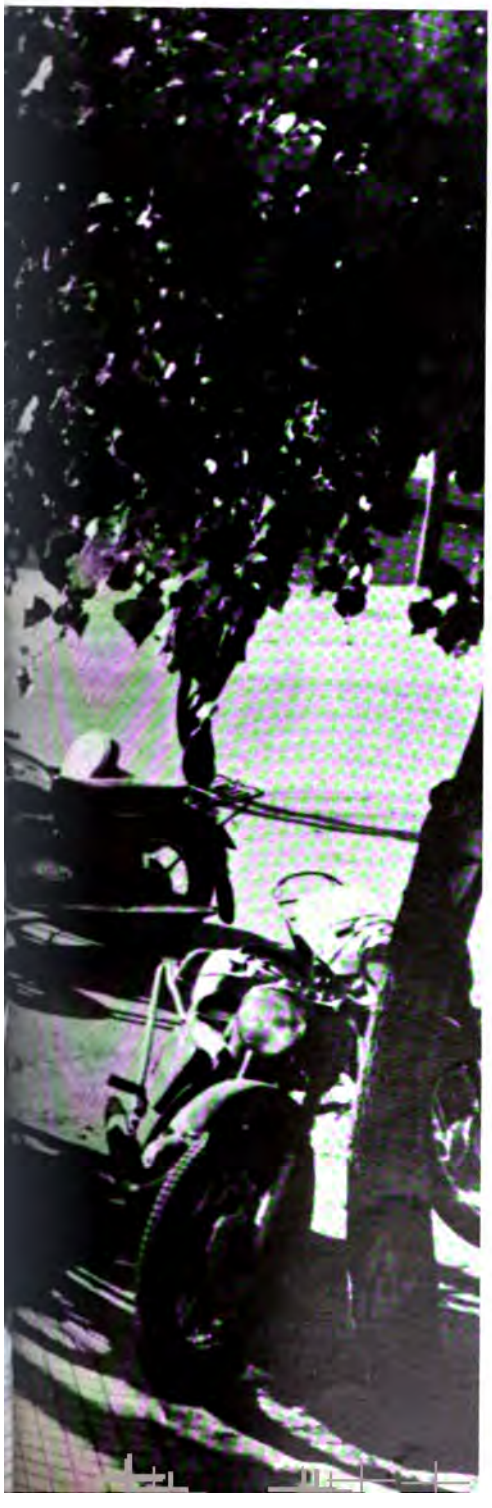
The central square of the stanitsa is always alive. Using every conceivable type of conveyance, the villagers drive in to shop or gossip.







A children's art and handicraft show at the Palace of Culture brought out the adults too. Exhibits were sent by the farm's nine kindergartens. The aim is to achieve the same educational level as the urban schools.



home they work all right without repairs for three years. Call a mechanic. And find the fellow who's to blame."

He was talking about TV sets out of commission at a field camp. While Kozlov shouted angrily into the phone I thought: So this is what a modern farm community has to worry about!

Rural Youth

As the clock struck twelve the door was flung open and teenagers, all dressed up and in high spirits, filled the room.

"This is what kept me in the office," Kozlov said to me with a glance that seemed to include me in the affair. "Every time we send our young people off to college, I get as excited as they do. A mixture of pride and envy, I guess. Our generation had no chance to study at the right time, what with the difficulties of the first five-year plans and the war. I entered college when I was over forty. Now it's all different. Anyone who wants a college education can get it."

The collective farm several years ago arranged for scholarships for high school graduates entering college or advanced technical or other schools. The farm now has 72 people on its staff with a college education or specialized training, but it needs many more. Usually teenagers are encouraged to enter agricultural colleges, but those who want to study the humanities or technical sciences are also eligible for scholarships. The farm now needs all kinds of experts. Besides the 40-ruble-a-month scholarship, the farm pays their room rent and helps their parents if that is necessary. The law requires the college graduate to return to the farm and work there for at least two years in exchange. But the Kirov Collective Farm does not need to invoke the law. Almost all the young people come back home to work, not for two years but for good. If a person has other plans, however, the farm does not put obstacles in his way.

"You're going to the wine-making school in Anapa, aren't you, Volodya Chernayev?" Kozlov asked. "That's good. You'll be able to help us. We're growing grapes but we haven't yet learned to turn them into good wine."



Platnirovskaya's main square has a very urban look. At the left is the Palace of Culture, and at the right is the barbershop.



Classroom in a high school, one of the five in Platnirovskaya. It was opened three years ago and, unlike most rural schools, has no shortage of teachers. They like working here.

He turned to a girl. "I hear you're entering the agricultural college in Krasnodar to study economics, Valya Sinitsina. I'm glad. We have only three economists here with a college education. It's a good field for a woman. We can't depend on you girls; you up and get married and leave the farm. But an economist can always find a job."

Then, to another girl: "The library department at the Institute of Culture in Krasnodar, is it, Zina Golovko? Excellent. We need librarians of our own here."

He ran through the names—Nikolai Petrenko, Nina Kovalenko, Yura Drannikov, Vyacheslav Klimenko, Tamara Kostenko and Volodya Kruglyi—mentioning the colleges and departments they were planning to enter—teacher-training, agriculture, land reclamation, farm machinery, medicine, veterinary—and adding words of encouragement, advice and good wishes.

"Go and study, young people," he said at the end. "Don't let yourself get discouraged. We'll do everything we can to see that you have what you need. Study hard and don't disgrace us. I wish you luck from the bottom of my heart."

The Chairman

The next day I left the house at dawn and took the first bus I came to. It was headed for the field where the fifth team was working.

I saw the combines moving up and down in groups of three, while we were still a long way off.

"Those combines ran all last night," Afanasi Butenko, the team agronomist, explained to me. "We keep them working around the clock at the height of the season."

"How many combines do you have? What is their daily quota?" I asked.

"Our team has 14, although there are more than 100 on the farm. To keep them working without interruption we assign two men to a combine—the operator and his assistant. Each combine does twenty acres a day. In how many hours? Well, we're farmers. We don't look at the clock. Some days it comes to 10 or more hours. And now you'll have to excuse me," said Afanasi, adding, "Drop in at my place this evening and I'll answer all your questions."

Out there in the field I met the chairman for the first time. Trofim Tretyakov was born in the Kuban. He became one of the first collective-farm chairmen in the region. During the war he served in the army, returning to the Kuban after he got his discharge, at which time he entered college. He has been head of the Kirov farm since 1950.

"How much do you expect to take in this year?" I asked.

"An average of 1.8 tons per acre. But we'll get up to 2.4 tons where we sowed a new wheat variety, the Aurora."

"What will the total be? How is it distributed?"

"About 37,000 tons, I think. We'll sell 17,000 tons to the state. The rest will be used approximately as follows: 3,000 tons will be distributed among the farm members, depending on how much work each farmer put in; 2,500 tons will be left for seed; and 10,000 tons will go for grain forage. Another 3,000 tons will go to the children's nurseries and kindergartens and for other public needs. The remainder will be sold through the stores at 3 kopeks a pound.

"The larger part of the money we get from the sale of grain to the state and through the stores is also divided among the farm members, again according to their work," Tretyakov went on. "Besides payment in kind, all our collective farmers are paid in money. They get regular wages. What is left goes for cultural needs, the buying of machinery and fertilizer, our building program and the payment of pensions to our farmers. We also bank a large sum in our reserve fund, something we do every year, so that in case of a bad harvest or some natural calamity we will have the money to pay our collective farmers their wages."

Nina Kirilyuk, a doctor's assistant, prefers a horse-drawn cart to more modern transportation. Kuban people have always been partial to horses.



"What else does your farm grow? Who does your planning?"

"We specialize in grain, but we also grow other crops, chiefly sunflower seed and sugar beet. Meat, milk and eggs are secondary.

"Our planning is done by state agencies, after consulting with us. We haven't got things the way they should be yet. For example, raising livestock is not profitable in the Kuban. We have no pasture land, only fields. Feeding grain to cattle is too expensive. Sheep are also unprofitable. Poultry, on the other hand, is profitable. We can use our waste material, particularly from beets, for feed. Livestock farming in the Kuban should have been given up a long time ago in favor of more grain production. To get along without centralized planning in a big country like ours is impossible," the chairman added.

The conversation between the chairman and myself took place in the car as we rode through the fields. It ended in the cafeteria. The farm has 26 eating places. We stopped at the one nearest the center of town, located in a little old building. The farmers warned us that it leaves much to be desired. The choice of dishes was not large, it is true, but what surprised me were the low prices. A vegetable salad costs one kopek, the famous Kuban borsch five kopeks, and meat dumplings 14 kopeks. An entire dinner comes to no more than 30 kopeks. That is cheap.

As for the cafeteria building, the whole center of town is being modernized, with brick buildings replacing the old wooden structures. Some of the buildings are completed, among them the Palace of Culture. The new management building, a barber shop and a school for farm machine operators are almost finished. Work has started on a polyclinic, maternity hospital and several hospital buildings. Planned but not yet begun are a hotel, restaurant, motion picture theater seating 400, a new market, a swimming pool, a Young Pioneers Palace, a music school, an open-air theater, a cafeteria and a museum. Hard to believe all of this will be built within the next two or three years, but Trofim Tretyakov has no doubts on this score. "We'll have them," he says. "That's what we're working for, a better life."

Rural or Urban

The pride of Platnirovskaya is its Palace of Culture. When the farmers debated at their general meeting what to build first, the feeling was unanimous—a recreation center. Perhaps because a modern center is a long step toward bridging the gap between urban and rural life, something the leaders of all collective farms are trying to do. Actually, the young people are responsible. They refuse to settle for the old-fashioned way of life of their grandfathers. Rural leaders did not realize for a long time what needed to be done to keep the young people on the land. And if they did know, there was usually little they could do about it.

The walls of the foyer of the palace of Culture are covered with pictures of cosmonauts, sputniks and fields of grain, done in a mosaic of blue and gray tiles. The tops of the tables scattered around repeat the mosaic pattern of ships, rockets and grain fields in miniature. I visited the Palace to see a children's art show. Above each group of pictures hung signs: "Tower," "Friendship," "The Little Bell," "Fantasy," "Firefly" and "Sunshine," the names of the kindergartens on the farm.

"Tretyakov has as many kindergartens as he has chicken coops," Maria Skub told me. "Nine of them altogether, where 900 children spend the day, and sometimes the whole week, free of charge."

In the daytime the palace belongs to the children, but in the evening it is turned over to the young people. They come there for concerts, plays and dances. I did not see any of that, though. When I asked why the palace was empty the director, Ivan Drobkov, said: "Harvest time."

Besides being director of the recreation center, Ivan Drobkov is in charge of amateur theatricals. He used to be a producer at a radio station in Byelorussia, but moved to the Kuban two years ago, after he read in the papers that the Kirov Collective Farm was inviting actors, ballet masters and stage directors to come to work at its new Palace of Culture.

"I wanted to do some independent work, and I've always wanted to live in the country. I wrote to the farm offering my services and got a reply telling me what I would be expected to do. It sounded all right, so I accepted and moved here with my family. Things have worked out fine. I joined the collective farm, for one thing."

"Did you have to?"

"No. Some of our professional actors, singers, musicians and artists aren't members. They simply work under contract. But I wanted to settle here, so I joined. It offers lots of advantages. My salary is 170 rubles a month. Like all collective farmers, I pay no income tax, and I can buy bread, sugar and butter from the collective farm at cost. At the end of the year, when the farm makes its final estimates of earnings, I get an additional sum ranging from 20 to 40 per cent of my annual income, depending on how good the harvest has been. Last year I received 31 kopeks for every ruble I earned during the year. It came to a substantial sum.

"My daughter recently completed a course in Krasnodar to teach dressmaking," Ivan Drobkov went on. "She will give a dressmaking course here at the palace which will pay her 130 rubles a month."

"Do you have a vegetable garden or keep a cow?"

"Yes, I have a vegetable plot, about half an acre. But I don't want to bother looking after a cow. There really isn't any need for a cow with milk in the stores whenever you want it."

I did not ask Ivan Drobkov about his work because the posters outside the palace advertising coming plays spoke for themselves.

Besides amateur dramatics the center has 18 other hobby groups. The ballet group for children of seven and over is especially popular. They study with Vladimir Komusidi, a professional dancer. But the pride of the farm is its song and dance company, 120 strong. No big party at the center is complete without a few numbers by the com-

Superb climate, rich soil and, most important, their own diligence and hard work have brought these farmers a large measure of prosperity.









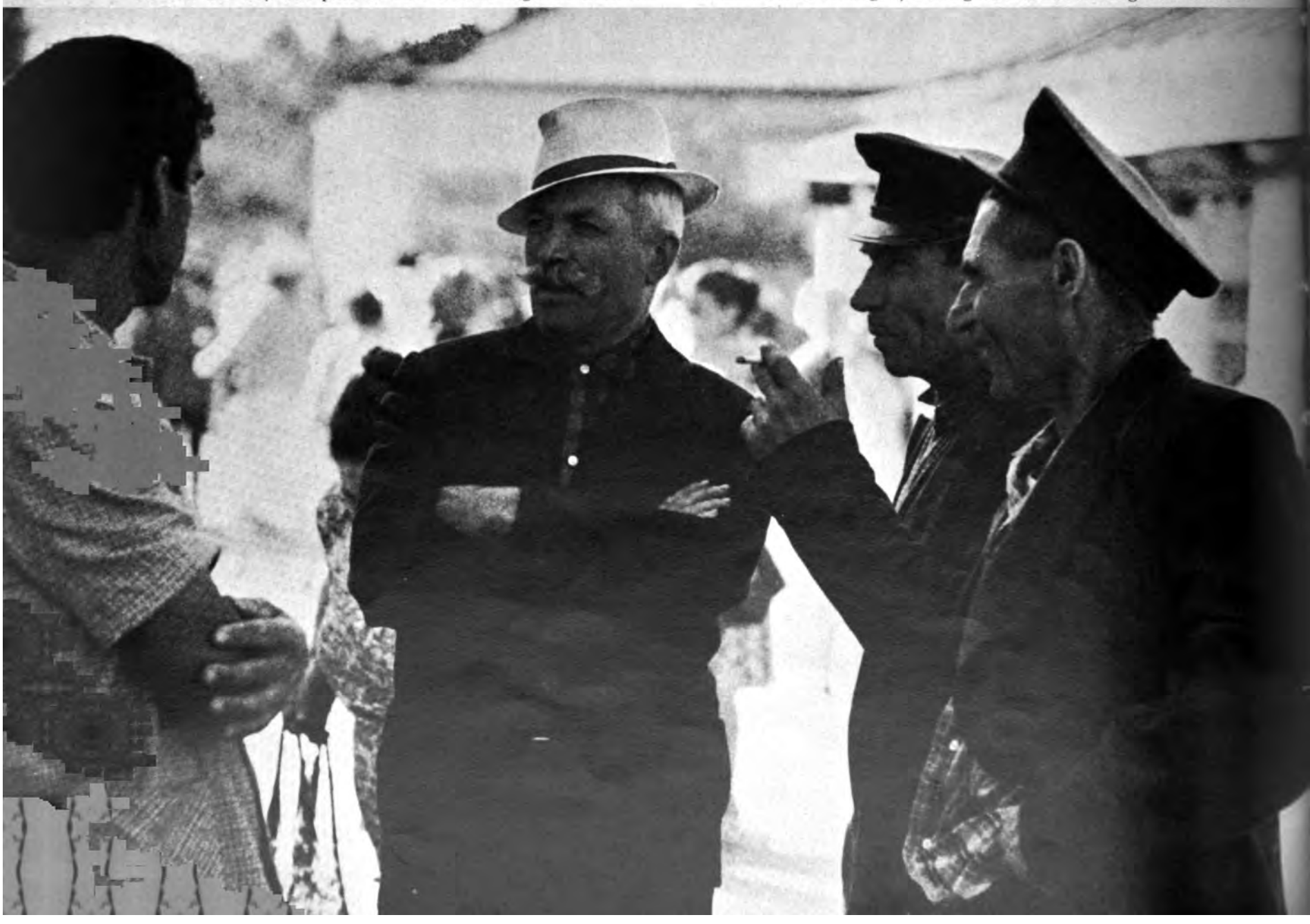




The young people of Platnirovskaya no longer dress like their forebears did: military caps, uniform trousers, high boots, weapons and the rest. But they take pride in their Cossack origin nevertheless.

Far beyond this region the Kuban Cossacks were known as a strong, proud, hard-working and freedom-loving people. In Turkic Cossack means "free man."

The older people like to reminisce about their dashing youth. The Cossack as lifetime soldier of the czar went out with the Revolution, but the word still evokes an image of a daring horseman brandishing a naked saber.





Fruit is left to dry on every roof and in every vacant spot in the yard. The end product, made during the winter months, is a delicious beverage.



Some 240 babies are born in Platnirovskaya every year. The average family has three children.

Collective farmers are covered by a comprehensive system of medical care. There is no charge for hospitalization and treatment, including the most extensive surgery.

pany. Members of the company often perform for the farmers at the field camps, and a group of paid singers and dancers put on shows for the various teams during the lunch period. The company was recently invited to appear in Bulgaria.

But that is all for later, after the grain is in.

Visiting Afanasi

You can't take more than a few steps in Platnirovskaya without coming to a building site. Between 40 and 50 new homes go up annually.

One of them, made of red brick with a fanciful iron weathercock, had attracted my attention when I first walked through the stanitsa. In the late afternoon it was charming—the tall sunflowers around the house. turning toward the setting sun, their heads blazing a bright yellow, like solar envoys. The colorful dahlias in front and the many roughly hewn tables covered with drying apricots created a typically Kuban scene.

As I passed the house on one occasion, I was pleased to see the sunflowers part and an elderly man with a turned-up mustache emerge carrying a pail and spade. A chance to speak to a real Cossack!

"I'm not a Cossack," said Sergei Zherebtsov. "The Cossacks are those whose great-grandfathers lived here. It is true that I came here a long time ago, but I was not born here. Before the collective farms were set up, we people who were not real Cossacks were looked down on. But on the collective farm people are valued for the work they do, and everyone has the same rights."

Sergei Zherebtsov used to be a stableman. He is now on pension and lives with his son.

"I look after the garden," said Sergei. "When I raise more than the family needs, I take it to market."

At the sound of voices Ivan Zherebtsov, Sergei's son, stepped out of the sunflower patch. His skin was burnt a deep brown, he was bare to the waist and his chest and arms bulged with muscles—a picture of youth and health.

"I've been helping father," he said, showing his earth-stained hands. "We have a big garden."

Ivan works on the poultry farm and his wife works with a field team. Their three children are in school.

"Father and I built this house in 1963," said Ivan. "It cost us 4,000 rubles."

It was cool in the house, the light barely coming through the blinds. Although the mistress of the house was not yet home, Ivan started our tour with the kitchen, obviously a place he and his wife were proud of. The other five rooms were furnished simply but tastefully.

"Where are the children?"

"They're doing their chores. The eldest, she's thirteen, is bringing the cows in, and our eight-year-old son has gone to the store. He does the shopping for us. The youngest is playing somewhere."

At the edge of the stanitsa the collective farm has built apartment houses with all the modern conveniences. But no power on earth can make the older Cossacks move into them. They want space and do not like neighbors so close or their kitchen gardens so far away.

But the younger people are all for these urban-type houses. Afanasi Butenko, the agronomist who invited me to call on him in the evening, lives in one.

The small Butenko apartment was a noisy place when I stopped in to see the family. Not surprising, considering that the oldest child is not yet five and there are two others.

Their mother, Violetta, answered my knock. She wore a flowered dress, and her cheeks were flushed from housework and play with the children. But the weariness on her face was immediately replaced by a welcoming smile.

"Do come in," she said. "We're always glad to have guests. Won't you have something to eat? Afanasi will be back any minute now." Then she added, as if she had known me for years, "It's the harvest, you know. That always holds him up."

The children had long since been put to bed when Afanasi finally arrived, weary and burnt black from the sun. One of his daughters immediately woke up and threw her arms around his neck.

Half an hour later, freshly shaved and wearing a white shirt, Afanasi took his place at the table.

I asked him about himself. Afanasi is 30 years old and has been an agronomist for three years. The work is not easy. There are 500 people on his team—60 operate machines, 250 work in the fields and 100 tend cattle. The team does all sorts of jobs. One of the drawbacks is a lack of trained people, and the young agronomist has to pitch in everywhere.

"But I wouldn't change my job for any other," Afanasi said. "When I was in college everyone said I should go into research. But then I met Violetta." Afanasi gave his wife, seated opposite him, an affectionate look. "We met on a train. I was going home from Moscow, where I did my army service, and she was headed for the Kuban to visit her uncle from her home in Perm, in the Urals. I was a serious type and she was flighty, kept giggling and making jokes. I couldn't take my eyes off her. Soon after we got acquainted, Violetta decided to stay in the Kuban and enter a teachers college. We met practically every day. And when I was in my fourth year at college, we got married. Then Katya was born. That made finishing college rather complicated but I did it."

Violetta also looked at her husband affectionately, but her glance seemed a little reproachful.

"After she graduated she was offered a position here, and we moved to Platnirovskaya. We were given a three-room apartment right away. By that time there were already four of us—Andrei had made his appearance. We had no furniture to speak of, not even a table, just three or four chairs and beds. There is still a great deal that we need. But we've gotten quite a bit done. For one thing, we paid off all our debts. We bought furniture, a TV and all the household appliances we need, and even a motorcycle with a sidecar. I don't worry about money any more. I earn 200 rubles a month and Violetta makes 90. She's head of the children's section at the palace. Then there are bonuses and an additional sum at the end of the year."

Afanasi went on with his story. "We don't keep hens or anything like that. I had a kitchen garden but just no time to take care of it, or any need to for that matter. I planted some flowers and a few vegetables. I tell Violetta to keep it weeded. How would it look for an agronomist to have a garden full of weeds." Afanasi laughed, then added seriously, "I've always wanted my wife to stay home and look after the house and children. But she doesn't want to. Says she wants to be part of the farm life."

I spent more than a week in Platnirovskaya, far too short a time to get acquainted with the farm in detail. But I saw a great deal. I saw that farm life now is vastly different from the old days when horse-drawn plows were used for cultivation, wheat was reaped with sickles, grain was dried by spreading it on the ground and taken to the mill in carts, and people lived in clay huts and wore beards and sheepskin coats.



Lyuba Tereshchenko is the Young Pioneer leader of a children's camp built around a pond at one end of the stanitsa. The children spend their summer vacations there under the care of trained teachers and counselors. There is no charge for accommodations; the collective farm foots the bills.



The most popular boy-girl gathering place is this recreation park. It, too, was built at the collective farm's expense.



Sports is a major activity. There are ten amateur groups with volunteer coaches, collective farmers during working hours. Lev Zanchenko, the soccer coach, is the only professional. Platnirovskaya has a stadium of ist own and a soccer team which plays to packed stands, except when the harvesting season is at its height.



Motorcycles and scooters are the vehicles that Platnirovskaya teenagers favor. They ride tandem.



Except for the fact that you occasionally run into a flock of chickens or geese, the collective farm's beach, with its sparkling water, sun, boats, games and equipment for a variety of sports will stand competition with the big resort beaches.

ARE WE ALONE IN OUTER

EARTH FOSSILS AND LIFE O

By Ivan Yefremov
Doctor of Science (Biology)

Ivan Yefremov, science fiction writer and scientist, answers the following questions:

Are there other earthlike planets in the Universe?

Did life originate by accident on our planet as some foreign authors claim?

Will we encounter brothers of reason when we move out beyond our Galaxy?

ON THE THRESHOLD of the space era, in the age of skyrocketing, we are taking stock in every field of science. Paleontology is no exception, even though at first glance it is difficult to see what searching for remnants of prehistoric life in the bowels of the Earth has to do with space exploration, the sciences of the heavens and the transformation of matter.

As we mature cosmically, we begin to understand the nature of the barriers we will have to break through before we step over the threshold of outer space, first to land on the planets of our solar system, and then to make our way to other stellar worlds.

Every knowledge-seeker, not to speak of us paleontologists and geologists, has his occasional daydream of the sensational impact that paleontological excavations on Mars, Venus or, say, on a planet of the star Cygni will have on all branches of science and philosophy. Even though these planets may be uninhabited, their layers of rock have perhaps preserved the remnants of life that once existed and then disappeared. We shall read its history in this rock and force a long dead world to reveal the secret of the disaster that killed off its living matter. On planets with life, but not inhabited by reasonable beings, we shall study the fossils to find out why thought failed to flash in this point of space. As for worlds where reason has created civilizations on the level of our own or even higher, we are certain that their inhabitants have long since known their own prehistory. And when they come in contact with us, we will be informed of the whole history of their development.

Perhaps we shall have an insight into this history even before we start excavations on other stellar bodies. In my science fiction novel *Andromeda Nebula*, I advanced the idea of communication with other worlds by relaying images from one inhabited planet to another through the Great Circle of reasonable contact. Fred Hoyle in his popular lectures on Man and the Galaxies in 1964 supported this idea.

Our World Is Not Unique

It is easier to communicate via wave oscillations traveling at the velocity of light than to send stellar ships into the abyss of space. That is why I think that our first contact with our brothers of reason will occur this way.

However, the questions arise: Do these brothers exist? What forms of life are there not only on the planets of remote stars, but on the Earth's neighbors in the solar system? Won't these forms of life be so different from those we know on Earth that, even if they are endowed with reason, we shall not be able to find them, let alone understand them?

The tradition which established itself in science in the first half of this century, when a lively interest was awakened in exobiology (the science of extraterrestrial life) gave a negative reply to all three questions. Millenniums of anthropocentrism, still deeply rooted in subconscious scientific thought, blocked our awareness of the infinity of space and time. Once we recognized the unimaginable depth of the material cosmos, we had to assume the existence of innumerable centers of life.

Astronomers like Sir James Jeans, who asserted that the birth of a star's planetary system was a very rare occurrence, were supported by biologists and paleontologists. Like George Gaylord Simpson they regarded the emergence of life, and particularly of reasonable beings, on a planet as a rare accident, with the probability of its repetition being virtually zero.

The unprecedented progress made in research in the 1950s to 1960s worked far-reaching changes in these concepts. To avoid details that would take us far afield, I would like to make this one

point: The key proposition of modern science—the great complexity of the world and its phenomena—has been proved beyond any doubt. The theses which were advanced at the beginning of the century by dialecticians in philosophy, Vladimir Lenin above all, are now obvious to any thinking man. Besides, we now comprehend the dialectical development of natural processes—opposite causes which lead to identical results. The unilinear logic advanced by the supporters of the uniqueness of life and man as its highest rational form has collapsed under the avalanche of a multitude of discoveries.

Astrophysics in the last century dealt the first telling blow at the idea of uniqueness. It proved beyond argument that the Universe—even in its remote parts barely accessible to our instruments—consists of 92 basic "bricks" or elements. The quantitative relationship of these "bricks" indicates the great predominance of certain elements—hydrogen, helium, oxygen, silicon and iron—over other elements. We do not yet know why. We can only guess that these elements as forms of existing matter are highly stable everywhere. Apparently distribution and elementary composition of tremendous accumulations of substance in the cosmos is by no means accidental.

Other achievements of astrophysics proved the notion of the uniqueness of the solar system incorrect. They showed that planets around stars are not rare in relation to infinity, so there may be a vast number in the Universe. Regularities in the composition of planetary atmospheres and their change with time were established.

The total information provided by geophysics and astrophysics had made it possible to advance a theory of similarity in the original type of planetary atmospheres which does not preclude the birth of life.



Colossal Time Spans and Stable Conditions

More recent data on the age of the Earth have considerably enlarged earlier figures. There are reasons to believe that the rock which makes up the oldest continental shields is about five to six billion years old. After that the discovery of remnants of life one and a half to two billion years old in the sedimentary rock of these shields, as in the South African shield, is not at all surprising. There is no doubt about the fact that the origin of initial forms of life, protolife, must have occurred before that time.

The colossal duration of the initial stages of life on Earth tells us why organic structures have grown so amazingly complicated. That time duration was essential even for the Protozoa. The age of life on Earth also reveals the indestructible stability of the process in time and its persistent drive for the increasing complexity of ever improving biological mechanisms.

Another outstanding discovery of the second half of the twentieth century is cybernetics (and the information theory). It demolished the last forts of anthropocentric thought.

Even the first attempts to develop self-regulating and self-improving systems give you an idea of the historical advancement of the more complex animal forms. Computers brought us closer to an understanding of the workings of the brain and how it stores information. They gave us the first comprehensive materialist explanation of instincts and reflexes as information accumulated in the course of historical development and consolidated in the mechanisms of heredity. There is no doubt about the fact that in the Universe general laws of nervous activity govern the accumulation of information.

Fred Hoyle made the point that all the information needed to build the most complex being—man—was contained in a single cell slightly larger than 15 cubic microns—the sperm. It consists nearly totally of a DNA nucleus. Obviously, if the retention of this information in a "package" of this kind has reached such a degree of perfection, it is hard to believe that chemically better systems are possible. This, one of the greatest achievements of evolution, is beyond doubt in the main stream of life in the Universe. Fred Hoyle says that we can be sure that forms of life on other planets are close to those on Earth.

The latest discoveries of the exact sciences and their application in biology lead us to the conclusion that life is an inevitable stage in the development of matter wherever suitable conditions, among them sufficient time and stability, exist.

Evolution on the Earth Is Out of Danger

Now let us see what paleontology—the documentary record of the history of life on Earth—has to say on this score. Like the history of human society based on written documents, the first fossilized remnants to reveal the structure of early organisms came from rather complex animals and plants well adapted to the surrounding medium. They represent the smaller part of the iceberg which sticks out above the surface of the water.

The sum total of paleontological data gives us a picture of gradual complication and improvement of plant and animal forms with geological time. The ascent is consistent and continuous, despite the fact that some of the groups died out, others developed or degenerated and still others remained unchanged.

At the same time, the character of paleontological documentation is such that until recently it gave the impression of a fragmented development of life in leaps and bounds, of periods of efflorescence followed by wholesale cataclysms and extinction. This impression was due to a misconception of the peculiarities of the evolutionary process. Adaptation to conditions through natural selection and minor changes helped separate animal and plant species to flourish and quickly multiply (though the case with plants was somewhat

different). As a result the population density of a region, or rather the sum total of external conditions of habitation—the "ecological niche," to use the biological term—increased until it reached a critical point. The term niche, a very accurate, descriptive one, implies limited space, not necessarily in the geographical, but in the biological sense. Outside a particular niche there was neither food, nor any other of the essential conditions for the species adapted precisely to the given region. Unhampered multiplication resulting from successful adaptation brought starvation, epizooty and mass extinction of a flourishing species. Mass extinction could also be caused by even minor changes in the external medium to which large numbers of narrowly adapted species are highly sensitive.

Mass extinction made for large accumulations of remains which led us to conclude that there had been "terrific disasters." Owing to spatial gaps in paleontological documentation, it looked as though separate cases were spread practically over the entire surface of the Earth. Actually these cases did not in the least affect other species, nor did they point to serious disasters on our planet.

More than that, the steadily ascending development from lower to higher forms bears witness to the prolonged stability of the conditions of the medium on the surface of the planet. This in turn points to constant solar radiation and the relatively calm state of the Earth's interior. Such sensitive and vulnerable indicators as land animals and plants, regarded from the point of view of the cosmos, prove this point. They reveal that stars like the Sun and systems like the solar system are stable over the billions of years required for the development of higher forms of life.

Life: Its Forms and Level of Organization

A condition for progress is independence from the external medium—homeostasis. The accumulation and storage of information, essential for survival, is impossible without homeostasis. The stronger the organic equilibrium and the longer its duration, the more information the individual can accumulate. This makes for a more universal being, better adapted to life under various conditions and less dependent on narrow ecological niches.

There is nothing new in this, but when applied to the historical development of life, it predicates the appearance of intellect in the higher forms. It also explains the struggle for independence from the habitation medium waged by the innumerable generations of plants and animals.

One more point. There can be no early ripening reason in the lower forms of life, such as mold, fungi, plants, crustaceans (crabs), not to speak of the "thinking ocean" of some science fiction writers. Incidentally, this was established two thousand years ago. An Indian poet and philosopher exlaims in *Bhagavad Gita:* "There can be no reason in loose items . . . Nor can there be creative thought in them. . . ."

To comprehend the world you must see it in all its inexhaustible variety. You must also understand its laws of survival. In the history of the Earth several attempts were made to develop the brain, but they were all premature, because the organisms had not yet reached the level of homeostasis and energesis required. In another case a big brain—bigger than the human cerebrum—was formed in dolphins and other cetaceans whose complete adaptation to water excluded all other mediums. Without the aptitude for toolmaking, it was impossible to create an artificial environment.

Man alone improved the surrounding conditions by adapting them to his needs. He expanded his food base through the use of fire and storage. The more independent he became of the external medium, the more he was able to comprehend and master the world he lived in.

Man is not specifically adapted to any narrow ecological niche. This is one of his greatest evolutionary virtues. Man's biological form is as primitive as that of his remote ancestors. It dates back hundreds of millions of years. But although archaic externally, his level of physiological organization, energesis and homeostasis is high enough to take the tremendous stress of the brain.

The higher the level of organization of life, the more closely related are its forms. Man, far from being an exception, is perhaps the best illustration of this proposition. With the accumulation of paleontological information, man's "roots" sink deeper and deeper. We now know of very ancient men, the Australopithecines, who used implements that were excavated from layers two million years old. Similar forms appeared in widely separated parts of the world. They converged and apparently mixed in the marginal zones of habitation. They never formed isolated species, but subspecies that were representative of the various stages in the development of the brain and labor. There is no doubt that we will be finding many other accompanying types of anthropoids, such as Gigantopithecus and Meganthropus. Anyhow the path from ancestor man to present-day man was not a short one. It reflected the general law: the more advanced the level of higher nervous activity, the fewer are the variety of forms and the closer they are to one another.

Once you comprehend the vast variety within the plant and animal kingdoms of our planet—both extinct and living—you do not argue the fact that on the surface of one single planet in the same phase conditions of external medium, all conceivable forms of life will develop and fill all the ecological niches and habitation regions suitable for life. To mention a few of the more startling deviations on our planet: the Pogonophora which inhabit the ocean's depths—peculiar animals that digest food between their tentacles; the highly symmetrical animals and plants—spherical, multibeamed and pentabeamed; sea lilies with the same shape as the plant, but with surface lime plates and tentacles. All of these are animals which are so different from the other inhabitants of the Earth that they could well have originated on another planet.

Summing up, we can say that a very notable characteristic of the Earth's organic kingdoms is the vast variety of lower forms, a variety which makes possible forms of life on other planets of which we cannot even conceive. And, in contrast to this variety of lower forms, in the higher animals we find a resemblance and a repetition of convergencies.

Understanding the Universe

The general laws of evolution on Earth also operate on other planets—those of the solar system and of remote stars. If we assume with a high degree of probability that protein-oxygen-water life is the most widespread in the Universe, we can see our planet as a huge research laboratory for evolution. The observations we make in this laboratory of ours, through the study of paleontological documents and comparison with the biology of still existing forms, give us an understanding and even make it possible for us to predict the course of development of life on other worlds.

Paleontology has now entered a new stage. Thanks to physics and cybernetics, the feedback between the organisms and the medium and the governing role played by environmental factors are no longer puzzles. The purposeful character of evolution no longer frightens us into acknowledging certain special forces. More than that, we can reasonably regard paleontology as the key to the future, a science which helps us understand the causative connections in the structure of living beings and, hence, to solve the problem of preserving the dialectical balance in the biology of organisms and all living nature.

We do not know how many forms of life failed the test of millions of centuries before man appeared with his brain, an organ which we find is infinitely more complex and has a greater multitude of nerve cells than we had imagined. The latest calculations considerably exceed the recent figure of ten billion. They lead us to believe that the cerebellum alone, which is not directly involved in the process of thought but only governs the central nervous system, consists of tens of billions of nerve cells. The last spire we came to know in the development of life is tightly twisted. Therefore, we have every reason to believe that all rational beings of the Universe have a structure which is just as "tight."

Some researchers maintain that there is no hope of understanding the rational inhabitants of other planets. The skeptics ask: "How can we communicate with them if we have not been able to devise reliable means for communicating with one another on our own planet?" This skepticism reflects the widespread Western notion of "noncommunication" between society and its individual members. The proponents of this theory have apparently forgotten that this is a social phenomenon and is not due to man's biological peculiarities. Communication with a rational being of any planet, whose development has been governed by the universal law of evolution, a being who has acquired a brain built in conformity with identical laws to solve similar problems, is possible, of course. And understanding, too, is possible, if not emotional and social in the beginning, then at least understanding in the sphere of technology and information. Convergence, the independent development of similar forms by different organisms, tells us that. It makes inevitable the emergence of intellect from initial chaos in a vast variety of forms of life on our own and other planets.

Thus, the science of paleontology—though seemingly at work under the surface of the Earth—serves as a window into the cosmos.

Courtesy of Literaturnaya Rossiya

MY MATCH WITH KORCHNOI

By Boris Spassky
International Grandmaster

My match with Leningrad Grandmaster Victor Korchnoi in Kiev last autumn to see who would win the right to face World Chess King Tigran Petrosyan in a title contest saw us both in a tense atmosphere, with our nervousness telling on our performances—the stakes were very high.

As you probably remember, the final score of that keen battle in the Ukrainian capital read 6.5 to 3.5, in my favor. The most crucial moment came after the sixth game, when Victor managed to reduce my lead to the minimum.

It was truly disappointing to lose that sixth game, after I sacrificed a piece in the opening and built up an irresistible (so I thought) attack on the rival King. But, I became so engrossed in seeking a most effective mate that I overlooked a simple tactical blow. The situation on the chessboard changed at once, with me now having to think about defense. This transition was so unexpected that I failed to take advantage of the chances I still had for salvation. I made only one move on resumption of play in that adjourned game, and resigned.

A setback like this can upset any chess player. Frankly, I thought that I would not regain control of my nerves, and especially since a win in that sixth game would have decided the whole issue then and there (winning back three points in the last half-dozen games, I believe, is hardly possible even for such a splendid tournament fighter as Victor Korchnoi).

You can take my word for it when I say that I had to exert great effort to keep up my spirit. My trainer, Igor Bondarevsky, lent me great support in that trying moment. He was the one who proposed that I drop the P-K4 move, with which I had started all those games in the first half of the Kiev match on the White side of the board, and launch game Number 7 with P-Q4.

It is clear to me now that the replacement of horses at the river crossing helped me tune up anew for action. I felt that the seventh game could be the decisive one in the match. Running ahead of my story, I can tell you that my intuition did not let me down.

KING'S INDIAN DEFENSE

White—B. Spassky Black—V. Korchnoi
(Game No. 7 played in Kiev in 1968)

1. P-Q4	Kt-KB3	3. Kt-QB3	B-KKt2
2. P-QB4	P-KKt3		

When Victor made this last move, I realized that it would be an uncompromising engagement. The King's Indian Defense is usually employed by a player who intends to give a battle. Naturally, I was happy about this, because it fitted in with my scheme and fighting spirit for this particular game.

4. P-K4	P-Q3	5. P-KB3	

This move marks the beginning of an efficient opening for White, elaborated by German Grandmaster Friedrich Sämisch for the King's Indian Defense.

5. . . .	0-0	7. Kt(KKt)-K2	P-QR3
6. B-K3	Kt-QB3		

This variant, employed by Black, became popular only a comparatively short time ago. I believe that it became widely known after the Botvinnik versus Smyslov game in Moscow in 1958.

8. Kt-QB1	P-K4	10. Kt-QKt3	
9. P-Q5	Kt-Q5		

This is a familiar position, which came up several times before in my playing career. On two occasions, my rivals offered a Pawn sacrifice at this point (10. . . . P-QB4; 11. PxP, PxP; 12. KtxKt), in the hope of obtaining a better development. I gladly accepted the challenge, believing (and I still believe till this day) that the Pawn sacrifice is not altogether correct.

10. . . .	KtxKt	11. QxKt	

I do not consider that the capture of the Knight by the Queen is better than the traditional 11. PxKt. I simply wanted to preserve the mobility of my Pawns on the Queen's Wing.

11. . . .	P-QB4

This is a bold move: Black is not afraid of his Pawn becoming weak on the Q file, but, instead, is counting on obtaining good counterplay. A reply of 11. . . . Kt-KR4, followed by P-KB4, merited attention.

12. PxP	PxP	13. 0-0-0	

Frankly, I made this move with some hesitation: If Black could transfer his Knight to the Q5 spot, the White King could find himself in danger. And yet I felt obliged to castle to the Queen's Wing. A challenge had been issued, and I had to accept it. Intuition prompted me that 13. 0-0-0 would give me more chances in gaining an advantage than a cautious 13. R-Q1, followed by a B-K2 and 0-0.

13. . . .	B-K3

Black views the future much too optimistically, with the hope of effecting P-Q4. It would be better for him to reply with 13. . . . Q-K2 and 14. . . . R(KB)-Q1 and thus strengthen the weak Pawn on Q3.

14. Q-QR3	Kt-K1		

The variant of 14. . . . P-Q4; 15. P(QB)xP, PxP; 16. PxP, KtxP (in case of 16. . . . BxP, there then could be a reply of 17.B-KKt5); 17. B-QB4, R-QB1 (a Queen sacrifice 17. . . . KtxB; 18. RxQ, KtxB, recommended by the former World Champion Mikhail Tahl in the Soviet chess weekly magazine, *"64"*, is hardly correct in view of 19. QxRch); 18. BxKt, BxB; 19. K-KKt1, probably convinced Korchnoi that nothing would come out of P-Q4, and he was forced to make essential changes in his plan. It grows clear that the reply of 13. . . . B-K3 is, at least, a loss of time.

15. P-KR4	P-KB3		

This is a weak reply, which immediately puts Black in a passive situation. Victor rejected the idea of a positional sacrifice of the exchange (15. . . . B-KB3; 16. B-KR6, BxP), which was the only possibility left in the given situation for Black to obtain a double-edged game.

16. P-QB5	

This exposes the QR2-KKt8 diagonal for White to create weaknesses in the rival camp which are difficult to defend.

16. . . .	R-KB2

When making his fifteenth move, Black probably intended to reply to 16. P-QB5 with 16. . . . P-Q4. Only now, after concretely assessing the position, he notices the many unpleasant things resulting after then pinning on the KKt1-QR7 diagonal (16. . . . P-Q4; 17. PxP, PxP; 18. B-QB4, Kt-QB2; 19. KtxP, KtxKt.; 20. Q-QKt3.)

17. Q-QR4	

This is a still stronger move than a straightforward 17. PxP, which also gives White an appreciable advantage.

17. . . .	Q-QB2	18. B-QB4	

The object of White's previous move is to prepare an exchange of the White square Bishops. Black is unable to prevent this exchange, spelling an advantage for me.

18. . . .	BxB	20. P-KR5	
19. QxB	B-KB1		

The issue is decided strategically, with White now beginning to cash in on his positional advantage. Laying bare the KR file is a vital point in White's scheme, because the Black forces will be shackled by the threat of a direct attack on their King.

20. . . .	P(Q)xP	22. Q-K6	
21. PxP	PxP		

White is in no hurry to capture the Pawn on QB5, preferring, instead, to activate his pieces still more. The White Queen views both flanks unambiguously from her fine position on K6.

22. . . .	R-Q1

In case of 22. . . . Kt-Q3, the reply could be 23. BxP, and it would be risky playing 23. . . . Kt-QKt4 in view of 24. BxB, RxB (24. . . . KtxKt; 25. B-Q6); 25. R-KR6, with White building up dangerous threats.

23. RxR	QxR	24. R-Q1	

Tahl believes that a more resolute reply would be 24. QxP(QB). The variant printed in *"64"* in favor of this move (24. QxP, Q-Q6; 25. BxP, Q-QB5; 26. QxKt, QxB; 27. K-QKt1, with White enjoying an extra Pawn and a better position) shows that the former world champion is undoubtedly right, but the move I have made is quite good: Black receives a brief breathing spell, but it does not change his situation very much.

24. . . .	Q-K2	26. Q-QKt6	
25. QxP(QB)	Kt-QB2		

This move paves the way for the White Knight to break through to the Q5 spot. An immediate 26. Kt-Q5 was impossible because of 26. . . . Q-K3, whereas now the reply to 26. . . . Q-K3 is a simply 27. BxP, with White winning a Pawn.

26. . . .	K-KKt2

A more stubborn reply would be 26. . . . P-QB5, but White would, in this case, also preserve all the advantages of his position.

27. Kt-Q5	Q-K3	29. QxB	
28. BxP	BxB		

And so, the lengthy siege on the weak rival Pawns in the middle of the board has ended in success: Both of them have been captured, giving White both positional and material advantage.

29. . . .	Kt-QKt4	32. R-QB1	Q-QKt4
30. Q-K3	Q-QB3ch	33. Kt-QB7	
31. K-QKt1	Kt-Q5		

White launches the final attack.

33. . . .	Q-K7

In the event of 33 . . . Q-Kt3, the continuation could be 34. Kt-K8ch, K-KB1 35. R-QB8, K-K2; 36. Q-QR3ch or 36. Kt-QB7.

34. Kt-K6ch	K-KR2		

This move enables White to wind up the game effectively. Incidentally, also after 34. . . . K-KKt1, White, by means of 35. R-QB8ch, K-KR2; 36. QxQ, KtxQ; 37. R-QR8, could quickly strip Black of his last chances of salvation.

35. Q-KR6ch!	

Black resigns in view of an inevitable mate.

By winning this game, I not only restored the two-point lead which I achieved in the first third of the match, but also scored a psychological victory for myself. I felt that Korchnoi had lost the advantage he had so unexpectedly gained in the sixth game.

The increased margin of my lead pressed down more and more on my rival, who adopted a risky continuation in the eighth game in an effort to reduce that lead. I snatched the initiative and scored another point, which actually spelled the end of the match. In the last two games, which were both drawn, Victor played quite calmly, as though having resigned himself to the inevitable. He evidently realized that further resistance was useless. Games seven and eight settled the issue.

NADEZHDA K. KRUPSKAYA REMI



Lenin and Krupskaya in Gorki, a village near Moscow. This photo w
taken in August or September, 1922, when Lenin was convalesc
from a serious illness. His physicians insisted upon complete re
that he do no work whatsoever, no matter how pressi

Nadezhda K. Krupskaya (1869-1939), Lenin's wife and associate, was an active and distinguished figure in Communist Party and Soviet Government affairs. She worked side by side with Lenin for 30 years, beginning with the founding of Marxist study circles in the nineties. Before the October 1917 Revolution she was secretary of the central party publications *Iskra*, *Vperyod* and *Proletary*, and a secretary of the Party Central Committee. After the Revolution she worked in the field of education. In numerous articles, reports and addresses she brought Lenin's ideas to the people. Nadezhda Krupskaya was his first biographer. A short biography which she wrote in May 1917 for the newspaper *Soldatskaya Pravda (Soldiers' Truth)* was edited by Lenin himself and was published under the heading, "A Page from the History of the Russian Social-Democratic Labor Party."

Since Nadezhda Krupskaya was not only an eyewitness of the events she describes but a participant as well, her writings are one of our most reliable sources of information about the life and work of the leader of the Russian Revolution. Here we present, in slightly abridged form, excerpts from her reminiscences of Lenin in the book *Krupskaya on Lenin. A Collection of Articles and Addresses*, issued by Political Literature Publishers, Moscow, in 1965.

SCES

AEMOIRS OF LENIN'S WIFE

Lenin's Childhood and Early Youth

MY ACCOUNT of Vladimir Ilyich's[1] childhood is based mainly on what I heard from his own lips during our life together. True, engrossed as he was in revolutionary activity, he did not go in much for reminiscing and would only occasionally talk about himself. We were members of the same generation, however (I was a year older), and we grew up in approximately the same environment, among what was known as the *raznochinnaya intelligentsia,*[2] and therefore his reminiscences, fragmentary though they were, told me a great deal.

Lenin was born in the town of Simbirsk, on the Volga, on April 22, 1870, and lived there until he was 17. Simbirsk was the administrative center of a province, but when you look at drawings of the streets, houses and environs of the time, you can see what a quiet backwater it was. There were no factories, not even a railway, and telephones and radios were, of course, nonexistent.

Lenin's real name was Ulyanov. He adopted the pseudonym Lenin much later to protect himself when he became a revolutionary. Today Simbirsk is named Ulyanovsk in his honor. It is now chiefly an educational center with many young students, and there is a branch of the Lenin Museum there.

Ilya Ulyanov, Lenin's father, came from a middle class family in Astrakhan.[3] He was orphaned at the age of seven, and it was only with the help of his elder brother, who paid for his education at great sacrifice, and his own gifts and hard work that Ilya Ulyanov was able to go through high school and graduate from the University of Kazan[4] in 1854. Afterward he taught physics and mathematics to the senior classes at the Penza Noblemen's Institute, and then at two high schools in Nizhni Novgorod. Later he was appointed Inspector and then Director of Elementary Schools in Simbirsk.

At the time Ilya Ulyanov took his post in Simbirsk Province, practically all the peasants there were illiterate. He was instrumental in increasing the number of schools in the province to 450, an effort which involved a great deal of work directly with teachers. Opening schools meant more than simply issuing an order. He had to make trips to the villages, travel in carts over bumpy roads, spend nights in roadside inns, quarrel with village policemen, arrange meetings of peasants. As a boy Lenin listened avidly to his father's stories about the countryside. He also heard much about rural life from his nurse, of whom he was very fond, and his mother, both of whom had grown up in the country.

During his childhood in Astrakhan Ilya Ulyanov had seen how the "alien" Kalmyks were oppressed, and as Director of Elementary Schools he made special efforts to provide educational opportunities for the many "aliens," as persons of other nationalities were then called, who lived in Simbirsk Province.

Lenin followed in his father's footsteps. He spent his entire senior year tutoring a Chuvash friend who was having trouble learning Russian, which he needed to pass his university entrance exam. He did pass it.

Ilya Ulyanov's attitude toward members of the national minorities influenced all of Lenin's revolutionary activity. Everyone knows what a tremendous amount of work Lenin did to lay the foundations of friendship among the peoples of the Soviet Union.

Lenin entered school when he was nine and a half. He made excellent progress from beginning to end and won a gold medal when he graduated from high school. This did not come to him as easily as many people think. He was a very active boy. He liked walking and hiking, he liked the Volga and the Sviyaga, he liked to swim and ice skate. "I loved ice skating," he once told me, "but when I saw that it was interfering with my studies, I gave it up." He was immoderately fond of reading. Books carried him away, engrossed him, told him about life and people, broadened his horizon. High school, though, was dull and lifeless, and he had to force himself to memorize all sorts of useless rubbish. He made it a practice to do his homework first and read afterward. He was extremely self-disciplined. He saved time. He concentrated hard and read very rapidly. When jotting down notes from books, he tried to do it as quickly as possible. Anyone who has seen his handwriting knows the abbreviations he used to take notes quickly.

He worked to develop his will power. He could be depended on to keep his word. Once, when still a boy, he started smoking. His mother Maria Alexandrovna was upset when she learned about it and asked him to give it up. Lenin promised her that he would and never smoked after that.

Lenin read all the children's magazines and books his father received, including *Children's Reading.* The children's magazines of the period devoted much space to America (as you know from 1861 to 1865 there was a war between the North and the South to abolish slavery in the Southern states), the war with Turkey, and the Balkans. Lenin also used to borrow books from his elder brother. A classmate of Lenin's recalls that he always wrote good compositions. The principal of the high school and teacher of literature was Fyodor Kerensky (father of Alexander Kerensky, who in 1917 was leader of the Socialist-Revolutionary Party and Prime Minister of Russia's Provisional Government). He used to give Lenin the highest mark for all his compositions. Returning a composition one day, he said in a tone of displeasure: "Who are these oppressed classes you write about here? Why do you write such stuff?" Nevertheless, he gave the composition the highest mark.

The Ulyanovs had six children. They grew up in pairs: Anna and Alexander, Vladimir (Lenin) and Olga, and the youngest two, Dmitri and Maria. Lenin and Olga were great friends. As children they played together, and later they read Karl Marx together. In 1890 Olga left for St. Petersburg[5] to attend the Higher Courses for Women and died there of typhus in the spring of 1891.

Alexander became interested in the natural sciences and entered the university in St. Petersburg to continue his studies. He became a revolutionary but concealed this even from his sister Anna. When he came home for his last summer vacation, he did not say a word about it to anyone. Young Lenin was dying to talk to someone; there was nobody in school he could confide in. He once told me that he got the impression one of his classmates was revolutionary-minded and decided to have a talk with him. They went on a hike to the Sviyaga, but nothing came of it. The boy began discussing future professions and said he was going to choose one that would make him a good career. Lenin said that he saw the boy was not a revolutionary at all, and so he did not confide in him.

That last summer Alexander shied away from conversation with his brother. Watching him rise at dawn to fuss about with worms and study them under the microscope as he gathered material for a dissertation on the Annelida, Lenin thought: "No, my brother will never be a revolutionary." He soon learned how mistaken he was. His brother's fate had a tremendous impact on him.

Lenin was greatly influenced not only by his father and brother but also by his mother. Her mother was a German, and her father, born in the Ukraine, was a distinguished surgeon. After 20 years of medical practice, he bought a little house in the village of Kokushkino,about 25 miles from Kazan, where he treated the peasants. Instead of sending his daughter off to school, he arranged for her instruction at home. She was an excellent musician, read a lot and knew what life was like. He taught her to be neat and orderly in everything she did. She was a good housewife and later taught her own daughters to be. When the family started to grow, her cares grew also. Her husband's salary was barely sufficient, and it took a lot of work to create the cosiness and order of the Ulyanov home, an atmosphere in which all the children could study calmly and meaningfully and acquire good habits.

Like her husband, Maria Alexandrovna paid a great deal of attention to her children's education. She taught them German, and Lenin used to relate, with a smile, how his German teacher praised him in his first years at school. He afterward became very interested in languages and even studied Latin. I believe he inherited much of his organizational talent from his mother.

She set the older children an example of looking after the younger ones. She taught them to sing in chorus—they were very fond of that—and she played games with them. From an early age

[1] Lenin was often called simply by his patronymic, as is the custom in Russia when a person is loved and trusted.

[2] Intellectuals who did not come from the aristocracy, as was usual in Russia until the middle of the nineteenth century, but from other social strata, such as civil servants, the middle class and the merchants. Many of them were later active in the revolutionary movement. They did much for Russian culture, art and literature.

[3] Astrakhan is a town at the mouth of the Volga.

[4] Kazan, an old city on the Volga, is now capital of the Tatar Autonomous Republic. It is a big manufacturing and cultural center.

[5] Now Leningrad. From 1914 to 1924 the city was called Petrograd. It was the capital of Russia until March 1918.

Lenin looked after his younger brother and sister. He left them with many memories. He knew how to introduce an element of organization into their play, and he was very gentle and attentive when he played with them.

This feeling for his younger brother and sister left its imprint on his attitude toward children in later years. He loved to play and joke with children. I never saw him stern with them, nor did he like it when others were. Contrary to some of the poses we see in paintings, he never moralized with children.

Lenin always had a great affection and admiration for his mother, especially in her most difficult years. Ilya Ulyanov died in 1886, and Lenin told me how bravely she bore up under the death of the husband she so loved and respected. He came to appreciate her qualities even more after the execution of his brother. Seeing the hard life of the peasants and the disgraceful things that were going on all around, Alexander had resolved to fight against czarism. He joined the Narodnaya Volya Party[6] in St. Petersburg and took an active part in the preparations for an attempt on the life of Czar Alexander III. The attempt failed, and on March 1, 1887, Alexander and others were arrested. Lenin was the one who had to break the terrible news to his mother. He saw her face change.

She said she had to leave for St. Petersburg at once. No railway line passed through Simbirsk then, and one had to travel first to the town of Syzran by horse and carriage. This was an expensive trip, and people usually tried to find fellow passengers to share the cost. Lenin went to look for a fellow passenger, but the news of Alexander's arrest had already spread through Simbirsk, and no one wanted to travel with his mother. Until then she had been highly esteemed as the director's wife and widow. Those who used to visit the Ulyanovs, the whole liberal "society" of the town, now shunned them. His mother's grief and the fright of the liberal intellectuals made a deep impression on 17-year-old Lenin.

After her departure he anxiously awaited news from St. Petersburg. He took loving care of the younger children and forced himself to go on with his studies.

Now he saw many things in a new light. Alexander was executed on May 8 that same year. When the news reached him, Lenin said: "No, we shall not take this road. This is not the road to follow."

1938

About Vladimir Ilyich

IN THE REMINISCENCES of him now being written Lenin is often depicted as a sort of ascetic, a kind of Philistine family man. This is a distortion of his image. He was not like that. He was a man to whom nothing human was alien. He loved life in all its many aspects and took it all in avidly.

Some writers paint a picture of our life as having been full of deprivation. This is not true. We did not experience the kind of want where you do not have the money for your next loaf of bread. That was not how we lived as émigrés.[7] There were some who for two years at a time neither had earnings nor received money from Russia, and they actually starved. That was not the case with us. True, we led a simple life—but is the joy of life rich food and luxury? Lenin knew how to take advantage of life's joys. He was very fond of nature. When we lived abroad, to say nothing of our life in Siberia, we would always go somewhere out of town to breathe our fill of fresh air; we would take a long, long walk and return home exhilarated by the exercise and the impressions. Our way of life differed considerably from that of the other émigrés. They liked to talk endlessly over glasses of tea, amidst clouds of smoke. This kind of chatter exhausted Lenin, and he always tried to break away and go for a walk. I remember, during our first year of exile, in Munich, taking Martov[8] and Anna on an outing to show them our favorite spot, the overgrown bank of the Isar, the path to which led through clumps of bushes. After half an hour they were so worn out and grumbled so much that we hurried to get them back to the civilized part of town in a rowboat and then returned to "our" spot without them. Even in London we managed to get out into the country, although it is not so easy to get out of that smoke-begrimed, fog-shrouded monster, particularly when you do not want to spend more than six farthings on bus fare.

Later, in Switzerland, when we acquired bicycles, our outings took us much farther afield. I remember the time in London when Vera Zasulich,[9] replying to a comrade who thought all Lenin did in London was sit in the British Museum and was very surprised to learn that he intended to go on an outing, said: "Why, he loves nature passionately!" I remember thinking at the time: "That's very true."

Lenin also liked to observe everyday life. We roamed about in all sorts of places in Munich, London and Paris. He liked to read notices of socialist meetings in the suburbs, in small cafés, in English churches. He wanted to see how the German, British or French worker lived, to hear him talk, not at big meetings but when he was with close comrades, to find out what he thought about and was interested in. How many election meetings we attended in Paris! We knew more about the everyday life of the workers in the country in which we were living than most exiles did. I remember a period in Paris when we were enthusiastic about French revolutionary songs. Lenin became acquainted with Montegusse, an exceptionally gifted composer and performer of revolutionary songs. The son of a Communard, Montegusse was a favorite in the working-class districts. At one time Lenin was very fond of singing his song "Salut à vous, soldats de 17" ("Greetings to you, soldiers of the seventeenth regiment"), a song addressed to French soldiers who had refused to fire on strikers. Montegusse once gave a performance at one of our Russian evening parties, and he and Lenin sat up late into the night talking about the future world revolution. The son of a Communard and a Russian Bolshevik, each had his own vision of this revolution. During the war Montegusse wrote patriotic songs.

There was another period when we attended election meetings, to which workers brought their children if they had nobody at home to leave them with. We listened to the speakers and observed what stirred and electrified the crowd; we admired the powerful figure of a forgeshop worker gazing at the speaker in veneration and, pressing close to him, the half-childish figure of his adolescent son who, like his father, had eyes for no one but the speaker. We heard a socialist deputy address a working class audience, and then we heard him at a meeting of intellectuals and civil servants, and we saw how the vital, stirring ideas which had excited the working-class audience were deprived of their lustre, were tinted by the speaker to a color acceptable to the petty bourgeoisie. Wasn't he out to win as many votes as he could? On the way home from the meeting Lenin hummed a song by Montegusse about a socialist deputy: "T'as bien dit, mon ga."

In London we used to go to Hyde Park to hear the sidewalk orators. One would talk about God, another about the hard life of salespeople, a third about garden cities. We used to go to Whitechapel, the Jewish district of London, where we became acquainted with Russian seamen and the Jewish poor and listened to their songs, so full of nostalgia and despair.

The ability to observe life, human life, in its many facets, in its diverse manifestations, and to find in it notes that are in tune with one's own feelings—doesn't this mean enjoying life? Could an ascetic do this?

Lenin loved people. He did not stand pictures of people he liked on his desk, as someone recently claimed. However, he was passionately fond of people. Of Plekhanov,[10] for instance. Plekhanov played a major role in Lenin's development, helped him find the correct revolutionary road, and for this reason he long thought of Plekhanov as wreathed in a halo. He found any divergence between his views and those of Plekhanov, even the slightest, most painful. Even after the split he listened attentively to what Plekhanov had to say. With what joy did he repeat Plekhanov's words, "I don't want to die an opportunist." Even in 1914, when the war broke out, Lenin was terribly excited as he prepared to make an anti-war speech at a meeting in Lausanne which Plekhanov was also to address. "Surely he will understand," Lenin said.

Lenin did not allow his personal feelings to influence his political judgments. Fond though he was of Plekhanov and Martov, he broke with them politically when this was necessary in the interests of the cause. A political rupture also meant a rupture on the personal plane; it could not be otherwise when one's entire life was linked up with political struggle.

But a split with someone for whom he had a personal affection was incredibly painful to Lenin. I remember how terrible he felt at the Second Congress[11] when it became clear that a split with Zasulich, Martov and others was inevitable. We sat up all night feeling bad about it. If Lenin had not been so passionately attached to people, his health would not have broken down at such an early age. Political integrity—in the genuine and profound meaning of the word—integrity which consists in being able to put aside all personal likes and dislikes in one's political judgments and actions, is not given to everyone, and to those who have it, it does not come easily.

There was nothing Lenin despised more than gossip, meddling in the private lives of others. He regarded meddling of this kind as impermissible.

In London in 1902 Lenin had a very sharp clash with a section of the *Iskra*[12] editorial staff that wanted to pass judgment on a comrade for an allegedly unseemly action while in exile. Examination of the

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[6] Narodnaya Volya (People's Will) was a secret revolutionary organization founded in 1879. Its aim was to overthrow the czarist autocracy through individual acts of terror.

[7] Lenin spent about 15 years in exile in European countries (from the summer of 1900 to the spring of 1917) with short intervals of life in Russia.

[8] L. Martov was the pseudonym of Yuli O. Tsederbaum (1873-1923), a Menshevik leader. He emigrated from Russia in 1920.

[9] Vera I. Zasulich (1851-1919), a Menshevik leader. She was the author of a number of works on scientific Marxism. Lenin criticized her for opportunistic views which denied that the proletariat was the leader of the working masses in the revolutionary struggle.

[10] Georgi V. Plekhanov (1856-1918) was a prominent leader of the Russian and international socialist movement and a Marxist philosopher and propagandist.

[11] The Second Congress of the Russian Social-Democratic Labor Party met in Brussels and then in London from July 17 (30) to August 10 (23), 1903. After sharp polemics the congress adopted the program proposed by Lenin and thus set up the world's first Marxist revolutionary working class party. Since Lenin's views won the majority of votes at this congress, he and his followers came to be called Bolsheviks (from the Russian word *bolshinstvo*, majority).

[12] *Iskra (The Spark)* was a Marxist newspaper organized by Vladimir Lenin abroad in 1900. It played an important role in creating a Marxist party in Russia.

matter naturally involved gross interference in his private life. Lenin strongly protested and categorically refused to take part, calling it an outrageous procedure. He was later accused of lacking consideration for others.

As I see it, to demand that overzealous hands refrain from poking into someone else's soul was, on the contrary, an expression of genuine consideration for others.

1924

Lenin in 1917

I REMEMBER that after the war broke out we lived in Switzerland as exiles. We rented a room from a shoemaker, a small room with windows that looked out onto the same courtyard as the windows of a sausage factory. Opening a window was completely out of the question. I was afraid Lenin would become ill. The landlord and his wife were very nice people. They let out rooms, and people of various nationalities—Germans, Frenchmen and we, Russians—lived in their apartment. It was a shabby place, and we were not well off. I had to do the cooking. The kitchen was a gathering place for everybody.

It had a gas range, at the side of which we women usually discussed international problems. Our landlady, the shoemaker's wife, was terribly indignant about the war.

"The soldiers," she once said, "ought to turn their guns against their governments."

When I mentioned this to Lenin, he liked it so much that afterward he would not think of moving. Lenin had to work a great deal all the time we lived in Switzerland. . . . He had to talk to comrades from other countries and convince them that the time had come for the proletariat to rise. In Zurich, where we lived in January 1917, there was a meeting[13] of young people from different countries. Addressing the meeting, Lenin said:

"This is a time in which socialist revolution in a number of countries has become imminent, a time in which the proletariat will take power into its own hands. But it is difficult to determine just when the moment will come." He added sadly: "I don't know whether we old people will live to see the day."

Revolution in Russia

That happened in January, and the following month the February Revolution broke out. I remember how we learned about it. I was doing the dishes, and afterward we had intended to go to the library. A Polish comrade ran in. "What are you sitting here for?" he said. "There's been a revolution in Russia!"

We dropped everything, of course, and hurried to the bank of Lake of Zurich, where there was a news bulletin board. Here we read that there had indeed been a revolution, but, of course, it was a bourgeois revolution so far. The czar had been overthrown, but the landowners and capitalists were still in power. Lenin immediately wrote to the comrades that now they must go out more among the masses, show them that they could not stop there but had to continue the struggle.

It took some time before we managed to arrange, through Swiss comrades, for our passage through Germany. From the news dispatches we knew, of course, what was going on in Russia, but neither Lenin nor any of the others could, as yet, form a definite picture of the details of the upheaval that had taken place. Side by side with the Provisional Government there existed a Soviet of Workers' and Soldiers' Deputies. True, this Soviet of Workers' and Soldiers' Deputies did not yet hold the Bolshevik viewpoint and did not regard itself as the ruling body, yet it was clear how much it was influencing the masses and what a force it could become. There was a tremendous revolutionary upsurge. When we arrived, we were met by comrades in Byeloostrov.[14] Lenin asked them: "Do you think we'll be arrested?"

Nobody answered; everybody just smiled. And when Lenin arrived in Petrograd, he saw that a welcome by revolutionary troops and a guard of honor had been arranged and that the square was thronged with people. At that moment he felt that his cherished dream of a socialist revolution was close to being realized. He was lifted up onto the top of a truck, and in a speech to the people he said:

"Long live the socialist revolution!"

The Bolsheviks Work for Peace

It was then that preparations began for the revolution which took place in October. Lenin made a close study of what was going on all around. He listened to what the people were saying. This was a time when the issues of war and revolution and all other problems were discussed in the streets day and night. We stayed with relatives, with Lenin's elder sister. When you opened the window at night and looked out, you would see a soldier on the other side of the street surrounded by a group of workers, housemaids and young people, and they would all be animatedly discussing what the Soviets were, what would happen next, whether the revolution would develop further or not, whether the war should be continued, and so on. All this was uppermost in people's minds. This was a time of revolutionary upsurge.

Lenin noted, however, that the people did not yet realize they had to seize power. At the party conference[15] three weeks later, Lenin said the main task now was to carry on explanatory work. He said the party had to take maximum advantage of this revolutionary upsurge of the masses to make it clear to them what the Bolsheviks were working for, to make it clear that the Bolsheviks were working for peace. Peace was a slogan that all working people supported. It was a slogan that also had the support of the rural areas because most of the soldiers came from the countryside. These soldiers, who now filled all the streets of Petrograd, wanted peace desperately. But, said Lenin, we must explain to them how we will bring that about, how we intend to achieve peace. When you do explanatory work among the masses, Lenin wrote at the time, you have to be very concrete; instead of speaking in generalities, you have to explain things, you have to give simple and truthful answers to all questions. One of Lenin's characteristics was to take a very concrete approach in his speeches. He never promised anything, never made any promises but said only what he himself thought.

And the workers said of Lenin: "He means what he says. . . ."

Lenin knew the difficult straits the peasants were in, and while calling for peace he spoke of the need for another slogan, a slogan demanding that land be made public property. He spoke of taking the land away from the landowners. Here in Russia the peasants hated the landowners probably more than in any other country. This was not only because the land was the property of the landowners but because they farmed it and, in farming it, oppressed the peasants so much that the peasants bitterly hated them both for being rich and for being their direct oppressors. . . . For this reason the soldiers, most of whom were of peasant origin, gave particularly hearty support to this slogan, the slogan that the land be taken away from the landowners. The imperialist war graphically showed that the imperialists and capitalists had no consideration for the masses, that they were ready to sacrifice thousands and millions of workers if it was advantageous to themselves. This the masses understood.

Finally, there was the question of power, of the need to seize power. This called for a great deal of explanation, and Lenin spoke of how necessary that was. The explanatory work which the Bolsheviks carried on was successful because they chose slogans that stirred the masses deeply. The people in every house, everywhere, were then saying that the capitalist ministers ought to be kicked out. Young children heard the grown-up talk, and a boy of six playing in the yard set up ten stones, hurled himself at them, and yelled: "Down with the ten capitalist ministers!"

The July Days

I remember the July days.[16] I was working in the Vyborg District then. A conference on cultural work had been scheduled for that day. Representatives from a machine gun regiment were to have come so that we could all discuss ways of improving cultural work among the machine gunners. I waited, but when nobody came I went to the Kshesinskaya Mansion, where the Central Committee Secretariat had its offices. There I saw the machine gunners on the march, already armed. . . . I remember this episode: As this machine-gun regiment marched along, an old factory worker stepped out in front of the men, bowed to them and said:

"Comrades, I want you to stand up properly for Soviet power!"

The action came as something of a surprise to the party. The question of what to do was discussed, and the party came to the decision that the action should be held up. The Central Committee issued instructions to that effect to all our public speakers. It is easy, you know, when you have to persuade people to act; it is much harder when you have to hold them back. Everyone who has taken part in the revolutionary struggle knows that you get much more satisfaction when you call on people to act, and they do. But when people want to act and you have to say, "No, comrades, the barricades have to be torn down; this cannot be done yet; we'll have to wait a bit before we act," that's hard. It was very hard for the Bolsheviks to do that. However, party discipline was strong, and all Bolsheviks urged that the action be stopped. It was done.

Arrests and searches began. After the July days Lenin had to go into hiding because there was an all-out search for him. He hid for a time in the Vyborg District, and then in the house of Sergei Alliluyev. Then it was decided that he should hide outside of Petrograd, at Razliv, a station on the Finnish Railway. Here Nikolai Yemelyanov, an old Party member who had been in the militant organization back in 1905, lived with his family. Although he had many children of different ages, they had been trained to keep secrets,

(Continued on page 34)

[13] This is a reference to a meeting of Swiss working-class youth on January 9 (22), 1917, at which Lenin reported in German on the Russian Revolution of 1905.

[14] Byeloostrov was the railway station near Petrograd where Lenin and Nadezhda Krupskaya arrived on April 3 (16), 1917.

[15] This was the Seventh (April) All-Russia Conference of the Russian Social-Democratic Labor Party, April 24-29 (May 7-12), 1917.

[16] A demonstration of workers and soldiers against the Provisional Government broke out spontaneously in Petrograd on July 3 (16). The marchers were on the verge of taking armed action, but the Bolsheviks felt the time was not yet ripe for a socialist revolution and kept the mass movement peaceful and organized. On July 4 (17), however, on orders from the Provisional Government, a popular demonstration was fired upon, and the Bolshevik newspapers were closed down. A warrant for Lenin's arrest was issued. The Provisional Government changed over to terrorist methods of rule. The Bolshevik Party went underground and began to prepare for an armed uprising.



Long Live the Socialist Revolution!
Poster by Vladimir Kalensky

Lenin possessed all the truly great and heroic virtues of the proletariat—a fearless mind, an iron, inflexible and indomitable



will that surmounts all obstacles, a holy and mortal hatred of slavery and tyranny, revolutionary ardor that moves mountains, and enormous organizing talent. His name has become the symbol of the new world from West to East, from South to North.

From the Manifesto of the Central Committee of the Communist Party on the Death of Lenin, January 22, 1924

(Continued from page 31)

and there was no danger that any of them would let slip the fact that strangers were staying with them.

Lenin spent the late summer in Razliv. They[17] were taken for farm laborers. They mowed a bit, they stacked hay, and everything looked natural. But when the cold weather set in, Lenin had to move to some other place.[18] A Finnish comrade drove him in a locomotive to Helsingfors,[19] in Finland.

On the Eve

It was in this period, in September, that Lenin wrote his article "Can the Bolsheviks Retain State Power?"

After this he wrote letters[20] to the Central Committee in which he said:"The time has now come to take power, because now capitalist Germany wants to conclude a separate peace with Britain, the Provisional Government wants to surrender Petrograd, it does not want to defend the revolutionary city, and now we must not miss the opportunity."Lenin wanted to be nearer Petrograd, and so he left Helsingfors for Vyborg. . . .

The long years of exile abroad, during which he had studied revolutions in other countries, had taught him a great deal. For example, he had read and reread many times what Marx said about uprisings. He knew the experience of the Great French Revolution and the experience of the Paris Commune. And so, in a letter to the Central Committee, he gave concrete instructions, pointing out that one must not play at uprising; once an uprising is begun, it must be carried through to the end. He indicated which places had to be occupied, such as the telegraph office and telephone exchange, which bridges captured, how to get in touch with army units, and how to capture the government, a detailed picture of how to organize a revolution. . . . Russian revolutionaries before us used to think: "The people will rise up, and despotism will collapse," that it would all somehow come about of itself; the strength of the Bolsheviks lay in the fact that they discussed and carried out the uprising according to a definite, carefully thought-out plan.

Together with the letter, Lenin sent me a note written in invisible ink asking that I find him a place to live. The place I found was the apartment of Marguerite Fofanova, one of our Vyborg comrades. It was convenient because the other tenants of the house were factory workers, and Marguerite Fofanova lived alone in her apartment. She would be able to do all the errands Lenin needed done. His whereabouts could be kept a secret. Lenin always insisted that we remember our old secrecy measures, and he followed them in 1917, during the preparations for the October Revolution. Notes written in invisible ink were one of these measures. The apartment was made ready, and Finnish comrades brought Lenin to Petrograd. One of our comrades started to complain that "he had arrived without permission," but this was no time for grumbling. At a Central Committee meeting[21] Lenin urged the necessity for an armed uprising, for a revolution. The great majority of the Central Committee was in favor. . . .

By this time the Soviets had come over to the side of the Bolsheviks and supported an uprising. This was one of the facts which showed that the time for an uprising was ripe. The meeting took place on the tenth, and on the fifteenth representatives from all the districts and from party organizations gathered in the Smolny.[22] Despite all the admonitions the comrades violated the old secrecy measures. We met, for instance, at the Smolny, where there were Mensheviks and Socialist-Revolutionaries and whatnot everywhere. At this meeting we discussed whether or not to organize an uprising. There were eight of us from the Vyborg District, and we all voted in favor. Most of the other districts also favored an uprising. I remember the speech made by Felix Dzerzhinsky, who very strongly urged the necessity of an uprising. . . . All the Petrograd party organizations were in favor.

The next day an enlarged meeting[23] of the Central Committee and the trade unions discussed the entire plan for an uprising and

(Continued on page 38)

[17] Lenin hid in Razliv together with Grigori Zinoviev.

[18] Lenin crossed the border illegally into Finland on August 9 (22), 1917.

[19] Now Helsinki.

[20] The letters "The Bolsheviks Must Assume Power" and "Marxism and Insurrection."

[21] Meeting of the Central Committee of the party on October 10 (23), 1917, to discuss preparations for an armed uprising.

[22] Meeting of the Petrograd Party Committee on October 15 (28), at which steps in preparation for an armed uprising were outlined.

[23] Present at this enlarged meeting on October 16 (29), 1917, in addition to Central Committee members, were representatives of the Petrograd Party Committee, the Bolshevik military organization, the trade unions, factory trade union committees, railwaymen and the Petrograd Area Committee of the party.

LENIN AT THE THIRD CONGRESS OF THE COMINTERN

By Andrei Petrov
Historian

In June and July 1921, the Third Congress of the Communist International (the world organization of Communist Parties) was held in the Andreyevsky Hall of the Moscow Kremlin. Present were delegates from 48 countries. Lenin took part in the proceedings and was elected honorary chairman.

In these rare photos Lenin is shown seated on the steps leading to the stage, not on the stage with the presidium. For a long time it was not clear at what moment of the congress deliberation these pictures were taken.

The reminiscences of Bernard Köhnen, a German delegate, seemed to establish the time. "When a German representative was given the floor, we suddenly saw Lenin. Passing quietly between the rows of tables, he made for the central aisle, toward the presidium. As always, Lenin tried to be inconspicuous. Approaching the steps leading to the stage, he glanced backward only once, then stopped quickly and sat down on a step. I was sitting at one of the front tables and was very close to him. Several



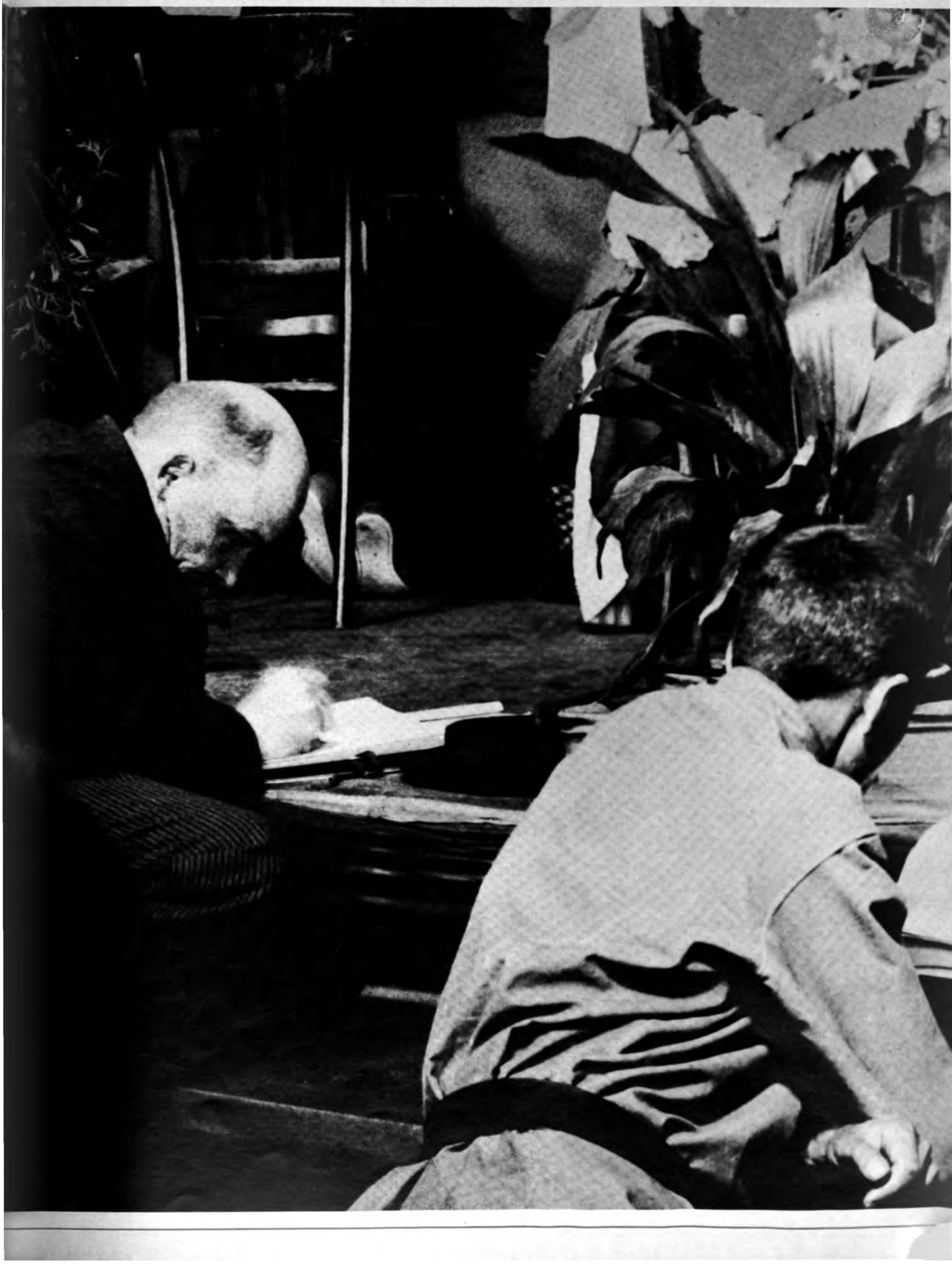
other comrades and I immediately rose to offer him a chair, trying not to make too much noise. But Lenin was already seated, and he waved to us to keep our chairs. His gesture was so plain that we obeyed at once. He obviously was telling us: 'Don't disturb yourselves. It makes no difference where I sit. What is important is that I hear clearly what the speaker says since that is what I came here for.'

"A writing pad immediately appeared in his lap. Pencil in hand, his eyes turned to the speaker. We could do nothing but remain seated comfortably in our chairs and let Lenin, our great teacher, do his work in the way he found suitable.

"Lenin watched the speaker closely. He followed not only his speech but his gestures, voice and facial expression, trying to determine what the speaker actually was and what he was attempting to be."

In spite of the Köhnen reminiscences, however, there was still some question as to when the pictures were taken. It was not until six years ago that researchers found Robert Leibbrandt, a man who appears with Lenin on one of these photos. He is shown sitting with his back to Lenin. A carpenter





(Continued from page 34)

elected a Revolutionary Military Committee, which was to make all the preparations and, in the first place, prepare the troops for the uprising. . . . The picture was now as follows: There was a Provisional Government, but all the troops had come to a decision to obey only the Revolutionary Military Committee of the Petrograd Soviet. The situation naturally grew more and more tense. The Provisional Government decided . . . to arrest the Revolutionary Military Committee (which included members of our Central Committee) and raise the bridges so as to isolate the districts. Then they began to shift officer cadets who had remained loyal to the Provisional Government to the Winter Palace. This was where the members of the government had gathered. It was clear that the time had come either to uphold Soviet power or else be defeated.

Lenin was sitting in Fofanova's apartment.Beside myself, the only one who came to tell him what was going on was Eino Rahja. The apartment was kept such a secret that even the members of the Central Committee did not know where Lenin was hiding. . . .

"What is Lenin doing now?" I wondered in the night."Is he still at Fofanova's?" I got up and went there. Fofanova told me that he had gone.[24] Rahja had come and told him that the bridges were being raised, and the two of them had decided that he should go out. They disguised him and tied a handkerchief around his head. The whole thing was done very clumsily. On the way Lenin lost his cap. . . . They barely managed to get to the Smolny. After Lenin arrived, he began to take a direct part in guiding the uprising. I did not know anything of this. At Marguerite Fofanova's I had given the prearranged knock on the door, and she had told me about Lenin's departure. After that Yevgeniya Yegorova,[25] the District Secretary, and I had climbed into the back of a truck and been driven to the Smolny. I was so carried away by my impression of the events at the time that I do not remember whether or not I saw Lenin there. I was thinking about the uprising. . . .

Thanks to the preparedness and the planning, the capture of power took place without big losses. The Provisional Government was arrested. Alexander Kerensky fled. It should be said that everyone was still very good-natured. Some of our Red Guards reasoned this way:

"Well, what of it? He may be a member of the Provisional Government, but we can let him pass because he isn't active."

Somehow we slipped up on Kerensky, and a few days later he began an offensive against Petrograd. True, nothing came of it, but it marked the beginning of civil war.

In the Smolny

All this took place at the same time as the Second Congress of Soviets.[26] I remember Lenin's speech on land. Not far from me sat a revolutionary who was dressed, peasant fashion, in a sheepskin coat. As he listened to Lenin, his face lit up with a special glow. It was evident he could see that the dream he had cherished for many years and for which he had fought was coming true. In general, the Second Congress of Soviets was marked by a spirit of great promise. . . .

I moved into the Smolny to be with Lenin. We were given a room. This building used to be the Institute for Young Noblewomen, and we were given a room formerly occupied by a *dame de classe.* Lenin's office was upstairs. He had by this time been elected Chairman of the Council of People's Commissars at the Second Congress. Opposite his office was a reception room, but it was so small there was nowhere to sit down. I would often see Lenin leaning against a wall or standing with his back to the window. Soldiers used to come here from the front, one delegation after another, and Lenin did a great deal of explanatory work among them.

At that time, incidentally, nobody knew him by sight. In the evenings we usually went out for a stroll around the Smolny, and nobody ever recognized him because there were no pictures of him then.

This year I received a letter from a man who was a member of Lenin's bodyguard in those days. . . . At first he was a messroom manager. He was probably the most primitive soldier in the Volynsky regiment. He had never been in a big city before. I once came upon him squatting in front of a primus stove over which he was pouring alcohol and watching the way it flared up. He had never seen anything like this. And now, 17 years later, he was recalling the October days. . . .

This soldier from the Volynsky regiment adored Lenin and thought he should have some white bread. It was impossible to get white bread anywhere at the time. He recalls how he went to his Volynsky regiment and said there was no white bread for Lenin. The men there located some bread, and, he adds, "Lenin ate this white bread with pleasure."

1934

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[24] Lenin left Fofanova's apartment the evening of October 24 (November 6).

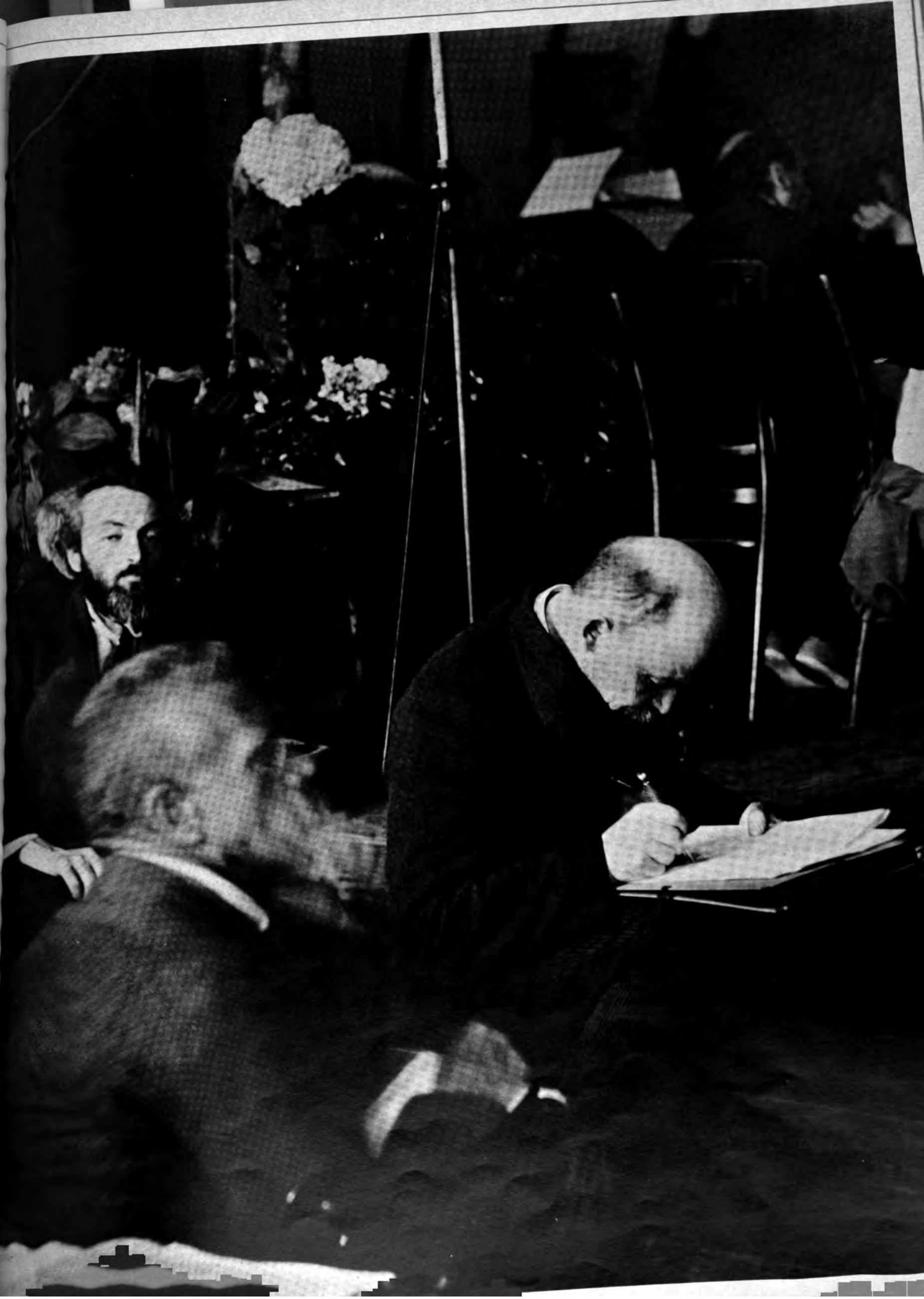
[25] Secretary of the Vyborg District Committee of the party.

[26] The Second All-Russia Congress of Workers' and Soldiers' Deputies, which took place in Petrograd on October 25-26 (November 7-8), 1917, proclaimed a Soviet republic. It formed the first Soviet Government, headed by Lenin, and adopted two fundamental decrees, the Decree on Peace and the Decree on Land.

then, he was a delegate from the German Youth Union. This is Leibbrandt's description of the proceedings at the moment the pictures were taken.

"It was when Communist tactics were being discussed. On the rostrum was Terraccini, an Italian comrade, speaking in French. I was waiting for his speech to be translated. It was a hot July day and I was uncomfortable in my cramped seat, so I found myself a better place—the high steps leading to the presidium.

"I did not take particular notice of a neighbor who joined me on this unusual bench. Only after many people in the hall started looking at us did I notice that the man beside me was Lenin. He had evidently just entered the hall and simply sat down in the first place he found close enough to the speaker. Lenin was scribbling something on a writing pad he held in his lap. He was apparently taking notes on Terraccini's speech and from the angry glances he threw at the rostrum from time to time, seemed to disagree with it. Sometimes a merry twinkle appeared in his eyes, as if he were thinking: 'That's another bit of sheer nonsense you've just said. Now wait, I'll give you what for!' And so he did, quite convincingly, when he spoke later in the discussion."



THE THREE SOURCES AND THREE COMPONENT PARTS OF MARXISM

By Vladimir I. Lenin

To commemorate the approaching centenary of Lenin's birth SOVIET LIFE will reprint several excerpts from his writings to give readers a firsthand acquaintance with the logic and style of the great thinker and revolutionary.

The article here was written on the thirtieth anniversary of the death of Marx long before the February 1917 revolution in Russia, and was first published in March 1913 in the journal *Prosveshcheniye (Education).*

Lenin outlines the philosophical, economic and political roots of Marxism to define the ideological base for the program of the Russian Bolsheviks on the eve of the Revolution.

Throughout the civilized world the teachings of Marx evoke the utmost hostility and hatred of all bourgeois science (both official and liberal) which regards Marxism as a kind of "pernicious sect." And no other attitude is to be expected, for there can be no "impartial" social science in a society based on class struggle. In one way or another, *all* official and liberal science *defends* wage slavery, whereas Marxism has declared relentless war on that slavery. To expect science to be impartial in a wage-slave society is as silly and naïve as to expect impartiality from manufacturers on the question of whether workers' wages should be increased by decreasing the profits of capital.

But this is not all. The history of philosophy and the history of social science show with perfect clarity that there is nothing resembling "sectarianism" in Marxism, in the sense of its being a hidebound, petrified doctrine, a doctrine which arose away from the highroad of development of world civilization. On the contrary, the genius of Marx consists precisely in his having furnished answers to questions already raised by the foremost minds of mankind. His doctrine emerged as the direct and immediate *continuation* of the teachings of the greatest representatives of philosophy, political economy and socialism.

The Marxist doctrine is omnipotent because it is true. It is comprehensive and harmonious, and provides men with an integral world outlook irreconcilable with any form of superstition, reaction or defense of bourgeois oppression. It is the legitimate successor to the best that man produced in the nineteenth century, as represented by German philosophy, English political economy and French socialism.

It is these three sources of Marxism, which are also its component parts, that we shall outline in brief.

I

The philosophy of Marxism is *materialism.* Throughout the modern history of Europe, and especially at the end of the eighteenth century in France, where a decisive struggle was conducted against every kind of medieval rubbish, against feudalism in institutions and ideas, materialism has proved to be the only philosophy that is consistent, true to all the teachings of natural science and hostile to superstition, cant and so forth. The enemies of democracy have, therefore, always exerted all their efforts to "refute," undermine and defame materialism, and advocated various forms of philosophical idealism, which always, in one way or another, amounts to the defense or support of religion.

Marx and Engels defended philosophical materialism in the most determined manner and repeatedly explained how profoundly erroneous is every deviation from this basis. Their views are most clearly and fully expounded in the works of Engels, *Ludwig Feuerbach* and *Anti-Dühring,* which, like *The Communist Manifesto,* are handbooks for every class-conscious worker.

But Marx did not stop at eighteenth-century materialism; he developed philosophy to a higher level. He enriched it with the achievements of German classical philosophy, especially of Hegel's system, which in its turn had led to the materialism of Feuerbach. The main achievement was dialectics, *i.e.,* the doctrine of development in its fullest, deepest and most comprehensive form, the doctrine of the relativity of human knowledge, which provides us with a reflection of eternally developing matter. The latest discoveries of natural science—radium, electrons, the transmutation of elements —have been a remarkable confirmation of Marx's dialectical materialism, contrary to the teachings of the bourgeois philosophers with their "new" reversions to old and decadent idealism.

Marx deepened and developed philosophical materialism to the full and extended the cognition of nature to include the cognition of ***human society.*** His *historical materialism* was a

great achievement in scientific thinking. The chaos and arbitrariness that had previously reigned in views on history and politics were replaced by a strikingly integral and harmonious scientific theory, which shows how, in consequence of the growth of productive forces, out of one system of social life another and higher system develops—how capitalism, for instance, grows out of feudalism.

Just as man's knowledge reflects nature (*i.e.,* developing matter), which exists independently of him, so man's *social knowledge* (*i.e.,* his various views and doctrines—philosophical, religious, political and so forth) reflects the *economic system* of society. Political institutions are a superstructure on the economic foundation. We see, for example, that the various political forms of the modern European states serve to strengthen the domination of the bourgeoisie over the proletariat.

Marx's philosophy is a consummate philosophical materialism which has provided mankind, and especially the working class, with powerful instruments of knowledge.

II

Having recognized that the economic system is the foundation on which the political superstructure is erected, Marx devoted his greatest attention to the study of this economic system. Marx's principal work, *Capital,* is devoted to a study of the economic system of modern, *i.e.,* capitalist, society.

Classical political economy, before Marx, evolved in England, the most developed of the capitalist countries. Adam Smith and David Ricardo, by their investigations of the economic system, laid the foundations of the *labor theory of value.* Marx continued their work; he provided a proof of the theory and developed it consistently. He showed that the value of every commodity is determined by the quantity of socially necessary labor time spent on its production.

Where the bourgeois economists saw a relation between things (the exchange of one commodity for another), Marx revealed a *relation between people.* The exchange of commodities expresses the connections between individual producers through the market. *Money* signifies that the connection is becoming closer and closer, inseparably uniting the entire economic life of the individual producers into one whole. Capital signifies a further development of this connection: Man's labor power becomes a commodity. The wage worker sells his labor power to the owner of the land, factories and instruments of labor. The worker spends one part of the day covering the cost of maintaining himself and his family (wages), while the other part of the day he works without remuneration, creating for the capitalist *surplus value,* the source of profit, the source of the wealth of the capitalist class.

The doctrine of surplus value is the cornerstone of Marx's economic theory.

Capital, created by the labor of the worker, crushes the worker, ruining small proprietors and creating an army of unemployed. In industry, the victory of large-scale production is immediately apparent, but the same phenomenon is also to be observed in agriculture, where the superiority of large-scale capitalist agriculture is enhanced, the use of machinery increases and the peasant economy, trapped by money-capital, declines and falls into ruin under the burden of its backward technique. The decline of small-scale production assumes different forms in agriculture, but the decline itself is an indisputable fact.

By destroying small-scale production, capital leads to an increase in the productivity of labor and to the creation of a monopoly position for the associations of big capitalists. Production itself becomes more and more social—hundreds of thousands and millions of workers become bound together in a regular economic organism—but the product of this collective labor is appropriated by a handful of capitalists. Anarchy of production, crises, the furious chase after markets and the insecurity of existence of the mass of the population are intensified.

By increasing the dependence of the workers on capital, the capitalist system creates the great power of united labor.

Marx traced the development of capitalism from embryonic commodity economy, from simple barter, to its highest forms, to large-scale production.

And the experience of all capitalist countries, old and new, year by year demonstrates clearly the truth of this Marxian doctrine to increasing numbers of workers.

Capitalism has triumphed all over the world, but this triumph is only the prelude to the triumph of labor over capital.

III

When feudalism was overthrown and *"free"* capitalist society appeared in the world, it at once became apparent that this freedom meant a new system of oppression and exploitation of the working people. Various socialist doctrines immediately emerged as a reflection of and protest against this oppression. Early socialism, however, was *utopian* socialism. It criticized capitalist society, it condemned and damned it, it dreamed of its destruction, it had visions of a better order and endeavored to convince the rich of the immorality of exploitation.

But utopian socialism could not indicate the real solution. It could not explain the real nature of wage slavery under capitalism, it could not reveal the laws of capitalist development, or show what *social force* is capable of becoming the creator of a new society.

Meanwhile, the stormy revolutions which everywhere in Europe, and especially in France, accompanied the fall of feudalism, of serfdom, more and more clearly revealed the *struggle of classes* as the basis and the driving force of all development.

Not a single victory of political freedom over the feudal class was won except against desperate resistance. Not a single capitalist country evolved on a more or less free and democratic basis except by a life-and-death struggle between the various classes of capitalist society.

The genius of Marx is in his having been the first to deduce from this the lesson world history teaches and to apply that lesson consistently. The deduction he made is the doctrine of the *class struggle.*

People always have been the foolish victims of deception and self-deception in politics, and they always will be until they have learned to seek out the *interests* of some class or other behind all moral, religious, political and social phrases, declarations and promises. Champions of reforms and improvements will always be fooled by the defenders of the old order until they realize that every old institution, however barbarous and rotten it may appear to be, is kept going by the forces of certain ruling classes. And there is *only one* way of smashing the resistance of those classes, and that is to find, in the very society which surrounds us, the forces which can—and, owing to their social position, must—constitute the power capable of sweeping away the old and creating the new, and to enlighten and organize those forces for the struggle.

Marx's philosophical materialism alone has shown the proletariat the way out of the spiritual slavery in which all oppressed classes have hitherto languished. Marx's economic theory alone has explained the true position of the proletariat in the general system of capitalism.

Independent organizations of the proletariat are multiplying all over the world, from America to Japan and from Sweden to South Africa. The proletariat is becoming enlightened and educated by waging its class struggle; it is ridding itself of the prejudices of bourgeois society; it is rallying its ranks ever more closely and is learning to gauge the measure of its successes; it is steeling its forces and is growing irresistibly.

AROUND the COUNTRY

IMPROVED ARTIFICIAL KIDNEY

The artificial kidney devised in the USSR nearly 10 years ago is being used in more than 100 Soviet clinics. It has saved thousands of lives. Clinics in Bulgaria, Poland, Czechoslovakia, Japan, Sweden and 15 other foreign countries also use the Soviet apparatus. At the Ministry of Health Research Institute of Surgical Equipment, Yuri Kozlov, Doctor of Technical Sciences, and a team of researchers recently devised an improved artificial kidney, the Diachron-80. It requires an initial charge of only 4.8 to 6 cubic inches of blood, a fraction of what similar foreign-made equipment takes. It is simple to use and does not require chemical sterilization, pressure boiling is sufficient.



THEIR FATHERS FOUGHT HERE

Thirty Young Communist League members of the Kuibyshev Electric Plant in Moscow made a tour of the sites of the memorable battles of World War II. Last May YCL cyclists at the plant took this same Moscow-Yukhnov-Moscow route.

Another group, this one of canoeists, followed the banks of the Medveditsa River, once the defense line of the 242nd Infantry Division. During the day the "fleet" paddled downstream, stopping over at places where stormy battles were fought. Late at night the canoes were banked and campfires lit. Smoke-scented *kasha* and sleep in the open were added attractions.

The final stop was at an enormous pedestal near the Bezhetsk highroad. On it stands a howitzer that has become a monument to those who lost their lives in the front lines.

Now the YCLers are sorting out and classifying the data they collected on their tours, for exhibition at the plant's Komsomol museum named Paths of Our Fathers.



WARM BATHS FOR CARP

Only in the summer do the cool waters of Byelorussian rivers and lakes warm up to temperatures of 64 to 68 degrees F. But carp bred here need at least 68 to 75 degrees F. to grow. Fish breeders of the Byten cooperative have devised an ingenious method of using the waste waters of thermal power stations for this purpose. Last spring they placed a hundred nets containing 130,000 baby carp in the channel draining off the waste waters of the Beryozovskaya station. In two months the one-ounce fish weighed up to one pound. When the catch was weighed in November, each net, having an area of 65 square feet, yielded at least a ton of fish. Since breeders have found that the carp puts on weight only in the summer months of June, July and August, they propose to give young trout warm baths in the winter.

PHYSICS MAJORS FIRST

The tenth anniversary of the day the first student volunteer building squad—339 physics majors—set out for the virgin lands in Kazakhstan, was an occasion at Moscow University. This past year volunteer squads from the university worked on projects in Kazakhstan, near Lake Baikal, in the Smolensk Region, and outside Moscow. Six squads went abroad—to work on projects in Bulgaria, Hungary, the German Democratic Republic, Poland, Czechoslovakia and Yugoslavia. The total number of volunteers last year was 4,500 students and postgraduates, including 200 Moscow University students from abroad.



SURGEON'S INVENTION

When Grigori Ilizarov, a surgeon from Kurgan, in Western Siberia, presented his dissertation for the degree of Master of Science (Medicine), experts decided that his work deserved a higher degree and awarded him a doctorate.

Dr. Ilizarov's dissertation is on the accelerated union of bones using a device of his own invention. The method has considerable medical significance. Previously, patients with diseases or injuries of large joints or with fractures required three, four and more months of treatment. Dr. Ilizarov developed and first applied his method of compressed osteosynthesis in 1951. His apparatus made it possible to create complete and permanent immobility, thereby providing the best possible conditions for a rapid union of bone tissue. It reduced the length of time of treatment by as much as two-thirds. Dr. Ilizarov has more than 1,000 successful operations to his credit.

BABE IN THE WOODS

Last June Pyotr Tropin, a livestock man at a Urals state farm, found an abandoned roe deer calf in the woods. He took it home where it made friends with his kitten. Older now, they still peacefully lap food from the same dish.

NEW GEAR-CUTTING METHOD

Radial stamping does not require retooling. It is sufficient to equip mechanical presses with all-purpose dies. In the manufacture of sprockets for silage harvesting combines, radial stamping has proved highly efficient. Toothing production increased 30 times over at the farm machinery plant in Gomel and was accompanied by a 20 per cent saving on metal. One press equipped with an all-purpose die replaced about 30 gear-cutting machines and freed about 6,500 square feet of shop space.

Radial stamping is the invention of Leonid Fedorov, a young researcher in Byelorussia who has already made a name for himself in the Soviet Union with more than 30 improvements for manufacturing gears.

A representative of the Ford Company (the United States) visited the Gomel farm machinery plant in May of last year and made a close study of the Fedorov method. He praised it highly. Ford is now negotiating with the Litsenzintorg foreign trade firm for a license to manufacture gears by the radial stamping method.



STARS BROUGHT NEARER

The Moscow Planetarium is housed in a building of unusual design contained beneath a cigar-shaped dome. It opened 30 years ago, shortly after an exhibition of interplanetary equipment and vehicles conceived or inspired by Konstantin Tsiolkovsky, father of cosmonautics. The Moscow Planetarium currently has an annual attendance of about one million visitors who come to see the reflection of stars cast on the dome by the Zeiss projector, or to hear well-known Soviet scientists lecture on the breakthrough into outer space. Also on display in the open are astronomical instruments and 16 displays tracing the history of cosmic exploration.

FOOD INDUSTRY BUDGET IS UP

Last year the food industry budget was 616 million rubles, 23 per cent more than for the previous year. Ninety-three per cent of all food enterprises, 5,200 of them, have already adopted the reforms legislated for all of the country's industry. They give the individual factories more initiative and the workers more material incentives. The Soviet Union now produces, per capita, 92.5 pounds of sugar, 24 pounds of confectionaries and 2 gallons of grape wine.



TAME BOAR

Jurkelis!" Arvid Grasmanis of the Radiant Path State Farm in Latvia called out, and a black, bristly wild boar emerged from the bushes. A tame boar? Hunters in the Soviet Far East, for instance, have seen this ferocious beast engage and vanquish tigers. Arvid found the animal on the doorstep of the state farm when it was just a few days old. The boar is not afraid of people, responds amiably when called and gets along fine with the farm cattle.

HOBBY OF MILLIONS

Over recent years the interest in amateur art has been very great. Sociologists, psychologists and art historians will, no doubt, tell us why some day. But it is already clear that the mass scope of this hobby of millions points to an overall rise in cultural standards. The trade unions invest heavily in clubs and palaces of culture which offer a large variety of activities in the graphic and plastic arts, the local folkcrafts, music, dance, theater, photography and filmmaking. In each of the republics these very creative groups take their own direction, a point demonstrated by the 1967 USSR Exhibition of Amateur Art. Currently amateur artists of the Lenin House of Culture in Moscow are selecting exhibits for a forthcoming show.



SOUVENIR TOYS

Nina Dyakova of the Moscow Applied Arts Enterprise of the Art Fund of the Russian Federation has just completed a series of souvenir toy figures portraying the characters of Ivan Krylov's fables, Alexander Pushkin's fairy tales and Anton Chekhov's stories. Another novelty to appear soon is a set of chessmen carved as Russian boyars in ancient costumes.

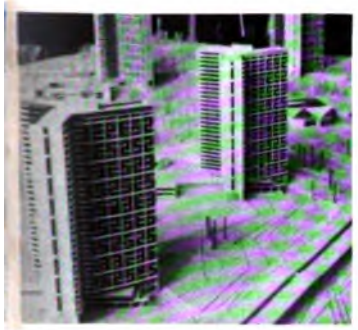
FISH TRAVEL BY RAIL AND AIR

Railways and airlines moved 300,000 adult fish and tens of millions of young fish and spawn to new waters last year.

Arctic peliad was brought to Lake Seliger, where the Volga rises, and the famous Siberian sturgeon to lakes in the Baltic republics. Pike perch was brought back to Siberia after millions of years. Experts say that pike perch was native to Siberia before the ice age.

Fish also traveled abroad last year. Russian carp was settled in lakes in Canada. Americans are now breeding pike caught in Russia's Oka River. Eels from France have been acclimatized to reservoirs around Moscow.

The fish are redistributed by the Central Acclimatization Administration of the USSR Ministry of the Fish Industry. They are shipped in plastic bags filled with water and oxygen.



MOSCOW SKYSCRAPERS

Architects of the Central Research Institute of School and College Building Design in Moscow have blueprinted an experimental neighborhood unit for a population of 10,000. The plan calls for five 30-story tri-radiate houses in landscaped areas instead of the more usual 50 five- and nine-story houses. All apartments will have movable partitions. The first two stories will be used for club and recreation rooms and lounges.

BIOLOGICAL FORECASTING

Man's health and efficiency depend in many ways on solar activity and therefore on the state of the Earth's magnetic field. Soviet researchers have discovered that magnetic storms and disturbances on the Sun have an accelerating effect on what they call electromobile people, much less effect on intermediary people, and very little effect on the electrostable type of person.

To reach these conclusions Leningrad researchers analyzed data dealing with the number of first aid calls each day over a period of time. Then they compared the figures with data on solar activity. They found a high correlation between the frequency of the calls and the condition of the Sun and the Earth's magnetic field.

When the Earth's magnetic field is disturbed there is an increase in the number of occupational and travel accidents. During the same period there are changes in blood pressure, blood coagulation and an increase in the number of deaths from myocardial infarction and in cases of acute appendicitis.

Some people are extremely sensitive to changes in solar activity. One of the electrical characteristics of their skin changes a few days before geophysical instruments register disturbances in the Earth's magnetic field. There are also bacteria that "feel" the solar flareups five days before astrophysical instruments register them. All this can be used for biological forecasting of the Sun's behavior so that measures can be taken in good time to neutralize its harmful effects on health.

ADVANTAGES OF DIGGING IN A GARDEN

Digging up a garden is becoming a highly profitable venture. Several gold bars were found not long ago by people working in a garden in a village in the Stavropol Region, the North Caucasus. On the other side of the Caucasian range a Georgian collective farmer, Shio Parsulidze, found a box with several dozen old coins in his vegetable plot. Parsulidze informed the State Museum in Georgia of his find.

Two of the coins created a sensation among numismatists. Apparently they were issued by a mint in Zagema, the first indication that there was such a mint in the Kakhetian kingdom.

VITAMINS FROM THE AIR

Academician Nikolai Kholodkovsky, a leading Soviet biologist, believes that the air we breathe in the woods or in gardens contains vitamins given off by plants. His studies have shown that in each cubic meter of air there are several milligrams of volatile substances, including vitamins.

TOMATOES GROWN ON PLASTIC PEBBLES

Tomatoes have been grown hydroponically on plastic "pebbles" at the Agrophysical Institute in Moscow. The plastic "pebbles" have been proved experimentally superior to gravel and ceramicite. They have a long service life and, since they are chemically inert, do not affect the nutritive medium. In a year one square yard yields 6 crops or 257 pounds of fine tomatoes.



ARTIFACTS THIRTY THOUSAND YEARS OLD

In a dig in the Dzudzuana cave in Georgia scientists and students of the Tbilisi University Department of History discovered numerous 5,000-year-old artifacts of the early Bronze Age, including stone grain-grinders, implements of horn and bone, well-preserved pottery, stone axes and flint arrowheads. In lower paleolithic layers in the same cave they found 30,000-year-old artifacts.



WEDDING ON TOP OF VOLCANO

Yuri Usoltsev, a fitter at the Petropavlovsk-Kamchatski shipyards and Faina Imayeva, a chemical engineer, were married on the top of the Kozelski volcano in Kamchatka, the Soviet Far East. It took them and their mountain-climbing wedding guests two days to make the ascent, braving gale-force torrents of sleet.

AMATEUR CHOREOGRAPHERS SHOW

On the opening night of a ten-day festival of choreography, Tchaikovsky Hall thundered with applause after every new number. All the performers were laureates of amateur dance festivals.

The Russian folk dance group of the Kauchuk Plant did several dances staged with the assistance of Tatyana Ustinova, leading choreographer of the Pyatnitsky Song and Dance Ensemble.

SINGING WOOD

The wood of the Shrenk spruce is very resonant and is used—especially when aged—to make musical instruments. Consequently many of the cottages built in the Kazakh capital of Alma Ata out of this spruce some 50 and more years ago have become valuable raw material for guitars, pianos and other instruments. Since the city is now building modern multistory reinforced concrete and brick structures that can withstand earthquakes with a magnitude of 9.0, the more resonant elements of the old wooden cottages slated for demolition will be appropriated for the manufacture of string instruments.



FESTIVE DINING

Russian table cheer is famous the world over. Who can resist a delicious village spread—*pelmeni* (small pieces of rolled dough stuffed with highly seasoned ground meat and then cooked and served with various sauces), *kulebyaka* (meat pies), lacy thin pancakes, village *shchi* (cabbage soup) served in small earthenware casseroles and eaten with wooden spoons! And all this is washed down with Russian *kvass* (a fermented grain drink), *braga* (a sort of beer), or *medovukha* (a heady beverage made with honey)—all time-tested Russian drinks. For a meal like that the citizens of Prokopyevsk, a mining town in the Kuzbas (Kuznetsk Basin) visit their newly opened *Slavyansky Bazar* restaurant.

Hospitable, festively attired hostesses make them welcome. The guests are entertained with old Russian songs and those so inclined dance the *barynya* or other Russian dances to the music of a folk instrument ensemble.

MUSEUM OF CARPETS

A new museum of Azerbaijanian carpets and folkcrafts has opened in an old fortress in Baku, the Azerbaijanian capital. On display are old and modern carpets, chased copperware and folk embroideries from various parts of the republic.

BOLSHOI BALLET PREMIERES

Yuri Grigorovich, chief ballet master at the Bolshoi Theater, is staging *Ikar*, a ballet with music by Leningrad composer Sergei Slonimsky. Vladimir Vasiliyev, the Bolshoi's leading male dancer, stars. He is also making his debut as the choreographer of *Ikar*.

Natalia Kasatkina and her husband Vladimir Vasilyov, who is also a choreographer, are staging *Creation of the World*, a ballet inspired by Jean Effel's drawings, for which Andrei Petrov wrote the music. The young couple are well known for their productions set to the music of Bach, Stravinsky and other composers. They have premières at the Bolshoi every year.

Old ballets in new stagings hold an important place in the Bolshoi repertory. The most notable of these is Sergei Prokofiev's *Romeo and Juliet*.

Toward the end of the current season the theater will revive Boris Asafiev's *Flames of Paris*—a certain success to judge by past performances.



MOUNTAIN DAM

The Central Asian mountain river Naryn does not look it, but its hydropower resources equal those of the Volga. The Toktogul power plant with a design capacity of 1,200,000 kilowatts is to be constructed here. The Kirghiz Sea—65 square miles in area—which its dam will create, will irrigate some five million acres of cotton and rice plantations, orchards and vineyards in Uzbekistan, Kazakhstan and Tajikistan.

The erection of the 650-foot-tall dam in the narrow gorge of the Naryn River presents formidable problems, never before tackled in power station building. The idea is to wedge the main body of the dam between the walls of the gorge and anchor its wings by massive concrete pillars.

BICONTINENTAL FILM FESTIVAL

More than 100 films of different styles, trends and genres were shown at the international Afro-Asian film festival in the Uzbek capital of Tashkent. Japan entered more features and documentaries than it had ever shown at an international film festival. All the films had simultaneous translations in Uzbek, Russian, English and French. There were no prizes awarded at the festival, only diplomas.



AROUND the COUNTRY

QUERIES FROM READERS

QUESTION: My students are presently engaged in the study of Russian history. I would consider it a great favor if you would be so kind as to help in my search for some facts about the Mongol Khan Devlet I. (Lyuba Sypek, East Greenwich, Rhode Island)

ANSWER: Devlet Girei I, the Crimean Khan from 1551 to 1577, was the henchman and vassal of the Turkish sultan. More than once he raided and pillaged Russia. In the spring of 1571 with an army of 120,000 he penetrated deep into the country and burnt down Moscow. The following year he raided again, and this time his men were routed by a Russian army led by Mikhail Vorotinsky. The Russian state suffered from the activities of Devlet Girei during the Livonian War (1558-1583).

QUESTION: I would like some information on the origin of the Cossacks. (Richard G. Wood, Houston, Texas)

ANSWER: The Cossacks were fugitive serfs who settled along the rivers Terek, Don and Kuban in southern Russia in the fifteenth to the seventeenth centuries.

The word "Cossack" is of Turkish origin and means "freeman" as opposed to serf. During the sixteenth and seventeenth centuries the Cossacks fought off Turkish-Tatar raids. The czarist government was compelled to recognize the vital role they played in protecting the southern frontiers of the Russian state and supplied them with armaments, money and foodstuffs. Gradually the Cossacks became an all-military force serving the Russian Empire. At the beginning of the twentieth century there were 11 Cossack troops in all.

During the February 1917 Revolution frontline units of the Cossacks went over to the people. In 1917 to 1918 revolutionary Cossacks played an important part in putting down counterrevolutionary rebellions.

The victory of the Red Army over foreign intervention and internal counterrevolution brought the toiling Cossacks over to Soviet power en masse. In the Second World War they fought against the German fascist invaders side by side with the rest of the Soviet people.

QUESTION: I would like a brief description of the Hermitage Museum.

ANSWER: In the mid-eighteenth century the name "Hermitage" was given to those halls in the Winter Palace, the czar's residence in St. Petersburg, where paintings, sculpture and *objet d'art* were kept to be seen by select visitors. Later the name was also used for museum buildings built near the Winter Palace.

The Hermitage was originally the private property of Catherine II. She bought several large collections abroad to create one of the finest art galleries in Europe. Besides paintings, it had engravings and drawings, ancient sculpture, gems, coins, medals, a mineralogical cabinet and a library.

In the first years of Soviet power the nationalization of private collections—those in country palaces, the Museum of Fine Arts and elsewhere—augmented the Hermitage collection. In 1923 the whole of the Winter Palace was placed at the disposal of the museum.

Among the treasures of the Hermitage are works by Raphael, da Vinci, Giorgione, Titian, Michelangelo, El Greco, Ribera, Velasquez, Murillo, Reynolds, Gainsborough, Poussin, Watteau, Chardin, Houdon. The especially rich collections of Dutch and Flemish paintings include Rembrandt, Rubens and Van Dyck. The museum is visited by about two million people annually.

QUESTION: If an American boy fell in love with a Russian girl, could he marry her? If so, how would they go about it? (Billy Davis, Nashville, Tennessee)

ANSWER: Yes, he could. Article 31, Section V of the Fundamental Law of the USSR and the union republics on marriage and the family, reads:

"Marriages between Soviet citizens and foreigners, as well as between foreigners, are contracted in the usual way.

"Marriage between Soviet citizens and foreigners does not entail any change in citizenship."

Article 9, Section II on registering marriages, reads:

"Marriages are registered in state offices for the registration of acts of civic status."

"Marriages are registered one month after application to a state office for the registration of acts of civic status by the parties concerned."

QUESTION: I recently read about electric sleep. I would like some information about it.

ANSWER: The first reports on electric sleep appeared back in 1949. The use of electric sleep therapy by Soviet physicians interested foreign investigators. The ES-III apparatus is now exported to many countries, including the United States.

It has been established that in electric sleep the blood contains more oxygen and the minute respiratory volume is greater than in physiological and medication sleep when these factors are reduced.

Electric sleep acts somewhat like rhythmotherapy or electrical massage.

Weak electrical impulses bring relief to people suffering from nervous fatigue, cardiac insufficiency and insomnia. A whole "family" of medicinal currents, the so-called sine-wave modulated currents, is used for treating disorders of the peripheral nervous system, of the blood circulatory system and of the joints.

The method requires further investigation.

QUESTION: I am a free-lance writer researching the subject of kites. I am interested in their history, uses and design. (Lisa Bennett, Berkeley, California)

ANSWER: Our children's kites have a bamboo or wire framework covered with paper or cloth (percale). They rise to heights of no more than a few hundred feet.

Our kites for scientific purposes, in particular, aerological kites, are fairly large and have a light metal or wooden (bamboo) framework covered with silk or percale. They come in various shapes: box, flat and semicylindrical. They are held by a thin steel wire or a nylon cord, wound onto a drum with a winch.

These kites are used for lifting automatic (recording) aerological instruments (meteorographs). They usually rise to an altitude of 4,000-5,000 feet. For greater altitudes, several additional kites, as many as four, added to the head kite with the equipment will rise as high as 2.5-3 miles. The greatest height to which equipment has been raised with a kite is 5.8 miles.

Benjamin Franklin was the first man to use kites for scientific observations. At about the same time the Russian scientist Mikhail Lomonosov flew kites to study atmospheric electricity.

The regular use of kites to raise meteorographs was begun in the last decade of the nineteenth century in Russia, France and the United States.

For reasons of safety, these kites are flown mostly on the high seas and in the Arctic, not in heavily populated areas.

QUESTION: Are Otto Schmidt, Ivan Papanin, Valeri Chkalov and Mikhail Gromov still alive and active? (Harry E. Black, Spokane, Washington)

ANSWER: Otto Schmidt (1891-1956), a member of the Academy of Sciences, an outstanding mathematician, astronomer, geophysicist and Artic explorer, was a Hero of the Soviet Union. In the last years of his life he offered a new hypothesis on the Earth's origin: that the Earth and the other planets were formed out of solid particles of a gas-dust cloud that once surrounded the Sun and that the mass of the cloud was of the order of the total mass of the modern planets of the solar system. An island in the Kara Sea and a promontory in the western part of the Chukchi Sea (the basin of the Arctic Ocean) have been named for him.

Ivan Papanin (b. 1894) is a Polar explorer and twice Hero of the Soviet Union. He headed the first Soviet North Pole research station on a drifting ice floe in the Central Arctic (1937-1938). A promontory on the Taimyr Peninsula (the northern extremity of Siberia) bears his name. Papanin is now chief of the marine expeditions department of the USSR Academy of Sciences.

Valeri Chkalov (1904-1938) was a flier and a Hero of the Soviet Union. He began test flying in 1930 and tested more than 70 types of planes. In 1936 Chkalov was one of the three men (Georgi Baidukov and Alexander Belyakov were the other members of the crew) who flew nonstop from Moscow to Vancouver over the North Pole, covering more than 7,400 miles in 63 hours and 25 minutes and setting a world record for long-distance nonstop flights. Chkalov died on December 15, 1938, while testing a high-speed fighter plane.

Mikhail Gromov (b. 1899) is a Colonel General of Aviation and a Hero of the Soviet Union. He has participated in a number of long-distance, nonstop flights. With Andrei Yumashev and Sergei Danilin he crossed the North Pole from Moscow to San Jacinto, California, covering 6,300 miles in 62 hours 17 minutes. In World War II Gromov commanded an air army. After the war he held a leading position in the Soviet Air Force. He retired in 1955.

MEDICINES FOR NEUROSES

By Professor Vsevolod Perekalin

Researchers at the Hertzen Pedagogical Institute in Leningrad have been working on the industrial synthesis of various complex compounds, particularly amino acids. Last year this group was issued a patent for a method of producing a valuable medicine—phenigama, in which both Soviet and foreign medical firms are interested.

Professor Vsevolod Perekalin, head of the research program, describes the new medicine and its possibilities.

MODERN MAN suffers from a multitude of irritants. First of all, there are the traumas of everyday living, the fairly strong acoustic and psychic irritants of travel by trolley, bus, train and plane. We are subjected to nervous irritation in our own homes. Nearly all of us have washing machines, vacuum cleaners, electric floor-polishers and other noisemakers.

Second, at work we must meet the demands that a high level of mechanization imposes. Modern industrial machinery requires maximum concentration and attention from the operator. And not simply mechanical but intelligent attention, which involves the expenditure of nervous energy.

Third, we are continually being bombarded with information. Our brains are now forced to digest the endless stream of data brought to us by papers, magazines, radio and television. This is especially troublesome for children because they have not learned to be selective; they take in everything. As a result of these and other irritants such unhealthy conditions as neuroses and insomnia develop. We have a whole category of neurotic children being treated at special schools.

Finally, there are the serious mental ailments. I do not say that they result directly from our tempo of life, but we must take these ailments into consideration too.

Numerous psychotropic remedies are being used in the treatment of nervous and mental disorders. In recent years a new branch of science—psychopharmacology—has emerged which examines the effect of medicines on human psychology.

In treating patients, however, doctors find that these psychotropic substances are alien to the human organism and sometimes have harmful side effects. Frequently they also have a toxic effect.

We in our laboratory thought that progress in the field of chemical synthesis should make it possible for us to derive for psychopharmacology substances which form a part of the human organism, which are products of the metabolism of the brain cells. Gamma-aminobutyric acid is such a substance. It is present in large quantities in the brain and apparently plays an important role.

Gamma-aminobutyric acid can be synthesized artificially, but on being introduced into the organism it has no effect. It is apparently prevented from penetrating to the brain by biological barriers. Our aim, therefore, was to obtain a substance which would be based on this acid but differ from it in certain respects. Figuratively speaking, we had to graft onto the molecular "tree" of the gamma-aminobutyric acid small "twigs" which would help the molecule break through the barriers of the organism and exercise a healing effect. This had to be done in such a way, however, that the organism would not notice the additions and would not distinguish the grafted molecule from its own.

This proved to be no easy task. Many different preparations were tested on animals, but they failed to answer one requirement or another. In the end, however, we produced a medicine —phenigama—which in its skeletal structure is very similar to the metabolism products of the human organism and is absolutely nontoxic.

Of course, we did not work alone but in cooperation with pharmacologists and clinicians. The study of the new preparation in clinics in Leningrad, Moscow, Kuibyshev and a number of other cities showed that phenigama cures some forms of schizophrenia and epilepsy, relieves manic states and feelings of fear and anxiety often experienced by the insane. It also acts as a mild sedative and soporific for people suffering from disturbances of the nervous system. Phenigama should, of course, be taken only on doctor's order.

In cooperation with doctors, we have established what changes in the chemical composition of this substance tend to enhance its effect and when the effect disappears, that is, we have studied the whole spectrum of chemical and, subsequently, pharmacological phenomena connected with grafts onto the "skeletal" molecule. We now have new variations of these substances. According to the first results, they have a much stronger action than phenigama.

Phenigama has a sedative effect. The patient recovers his spirits, and his relationships with the outer world improve. The drug helps him throw off depression, fatigue and irritation. We are trying to produce substances which would still further improve the patient's mental condition.

One other important aspect of our work. The human brain is the most perfect, delicate and intricate "computer" we know. When we say that a man has arrived at a certain discovery or decision intuitively, what we are really saying is that we do not know how the brain works. And since we do not know the principles on which this "computer" works, repairing it when it goes out of order is a very difficult job. Prophylaxis, preventing damage to this vulnerable and highly complicated mechanism, is therefore of vital importance. The substances we are seeking to derive will make such prophylaxis possible and permit us to keep man's mental condition stable and healthy. The preservation of that mental stability is more than a medical good; it has large socioeconomic effects since the productivity of labor, its quality, and creative activity in general depend upon the condition of the nervous system and the mind.

Courtesy of Pravda

SPACE SPIDERMEN

By Academician Anatoli Blagonravov



From left to right: Yevgeni Khrunov, Alexei Yeliseyev, Vladimir Shatalov, Boris Volynov.

THE PROBLEM of building a long duration orbital laboratory which will ensure the continuous work of researchers beyond the limits of the globe and thus offer broader possibilities for knowing better both the macrocosm and the microcosm is now very urgent.

To give man adequate working conditions in such a laboratory, it is necessary to provide a large enough space inside the artificial earth satellite, by imparting greater size and weight to it. But the launching of "heavy" satellites assembled on Earth would pose an extremely difficult problem involving the development of giant-sized booster rockets fitted with engines of unimaginable power. Therefore, it has been clear from the very outset, that the way to tackle this problem was to assemble such satellites in orbit, part by part.

This assembly, of course, would require that all parts should be placed into the same orbit, concentrated in one place and then linked up mechanically.

Work of this kind may require the presence in space of men capable of doing certain jobs. Another aspect of this matter involves ensuring man's long stay in an orbital laboratory. This means creating an artificial atmosphere and a microclimate inside the station itself, and supplying necessary food and sources of power.

A trace can be made of how these tasks were accomplished consecutively, step by step, as space research developed. First, there were experiments with maneuvering space vehicles (Polyot stations). Then a solution was found for the problem of rendezvous and the subsequent automatic docking of two spaceships. This was followed by a rendezvous between the spaceship piloted by cosmonaut Georgi Beregovoi and an unmanned craft. And finally came the recent experiment whose elements were maneuvering, a rendezvous between two manned spaceships in earth orbit, their mechanical coupling or docking, as we now call it, the emergence of two cosmonauts into free space and their transfer to the other craft.

Equally successive was the way toward solving the other aspect of the problem—that of ensuring the possibility of a long stay and work inside a space station. The first cosmonaut's hour-and-a-half flight was followed by longer duration missions with regeneration of the atmosphere, preset temperature conditions and diet. With every new flight cosmonauts had to fulfill more complicated functions. There was parallel work under way to improve communications between the cosmonauts and the Earth. Now we are able to watch their activities directly on TV screens. Naturally, a reliable and steady communication link with the Earth helps to reduce nervous tension and appreciably eases the cosmonaut's job. Mention must also be made of the recent experiment of our three-man test group that spent a year under conditions simulating outer space.

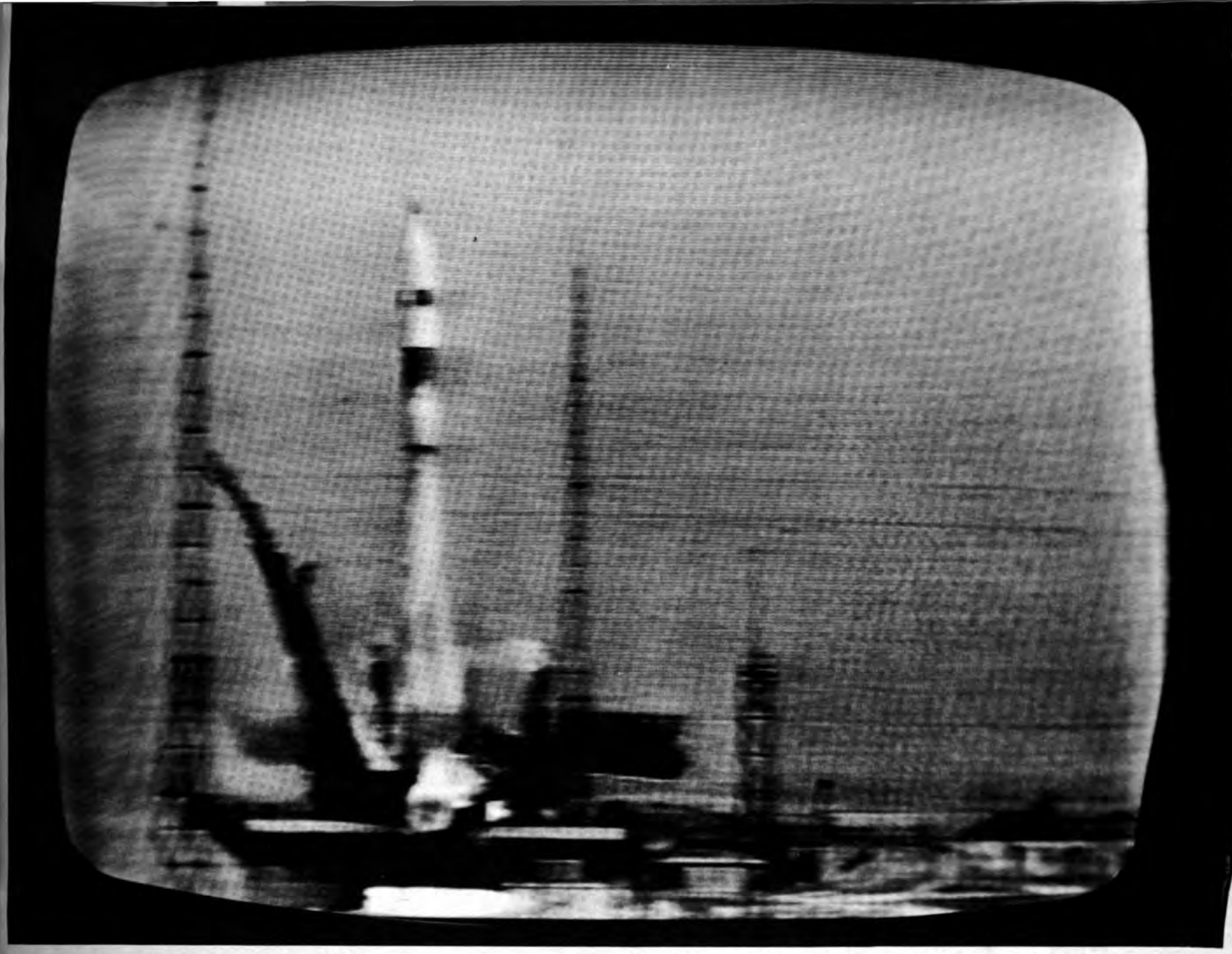
Such is the succession of quests by our scientists, engineers and technicians that brought us closest to establishing a space laboratory.

The day is not far off when a permanent laboratory will be orbiting the Earth, with researchers going up there to work under normal conditions, with all the comforts, and to return whenever necessary for their earth-bound duties. And when required, a space ambulance may be sent to such laboratories. The station will be linked with the Earth not only by radio, but also by a regular space mail service.

By sending aloft small fuel supplies from time to time, it will be possible to ensure the long operating life of the station by firing engines that will make up for loss in velocity due to drag in the upper layers of the atmosphere.

The time is approaching when space flights will become as common a human pursuit as air travel is now.

Courtesy of Pravda



This still from a TV broadcast on January 14 shows Soyuz 4 as it leaves the launching pad.

Boris Volynov and Yevgeni Khrunov check their space suits for the last time before taking off.





Boris Volynov and his wife Tamara strolling on the boardwalk during a vacation at the seaside.

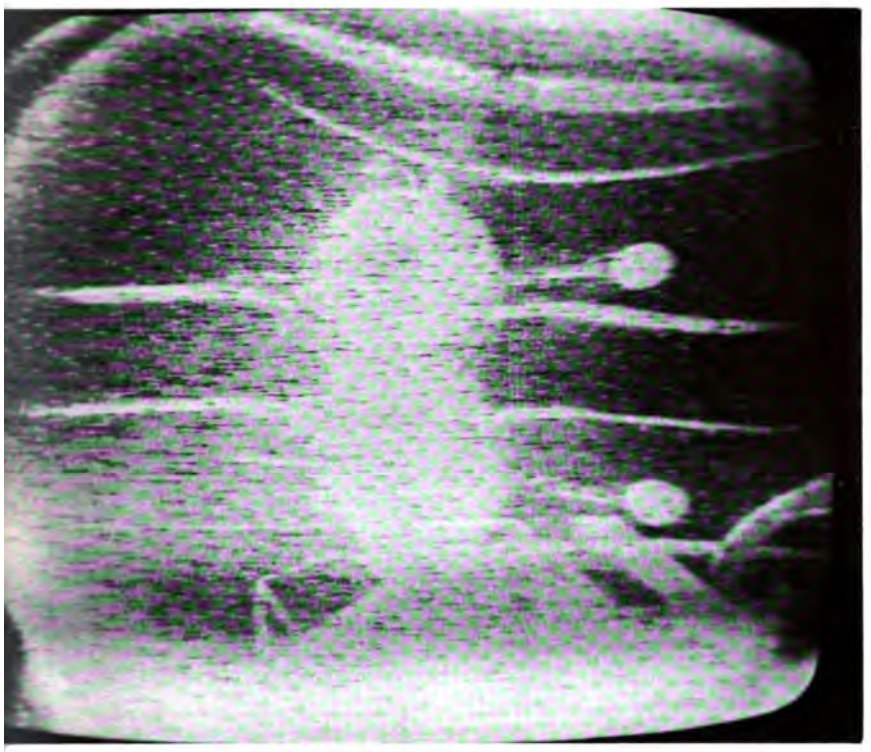


Decorating the fir tree on New Year's Eve. Cosmonaut Boris Volynov with his daughter Tatyana.



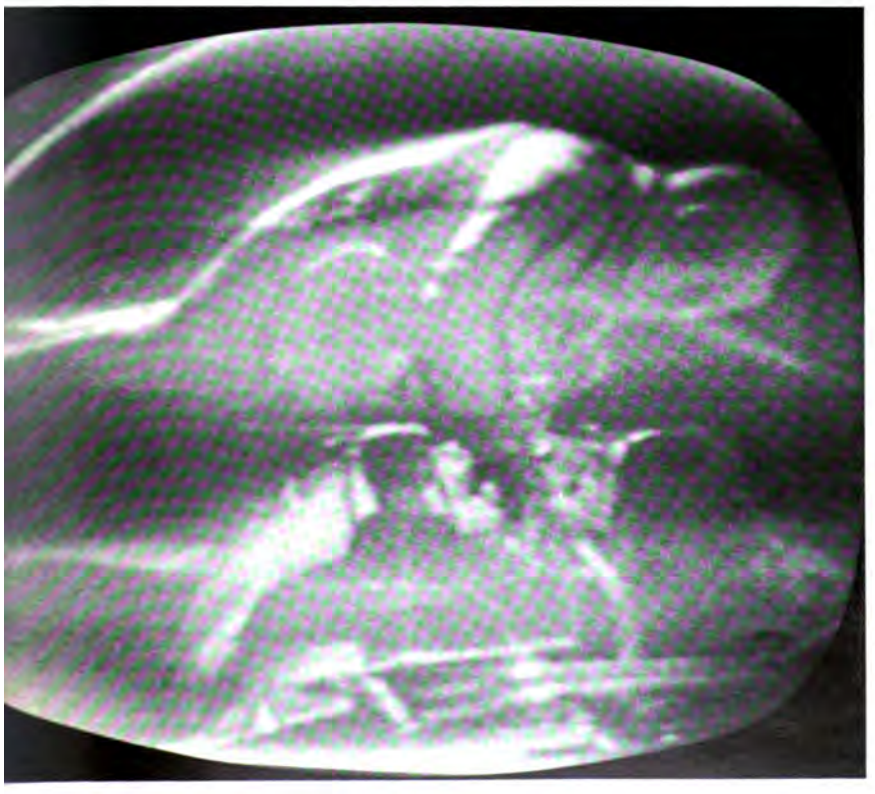
Family portrait: An evening at home. Yevgeni Khrunov with his wife Svetlana and son Valeri.

CHANGING SHIPS IN ORBIT



Two television cameras working simultaneously got a picture of Soyuz 4 and Soyuz 5 docking.

A television record of Alexei Yeliseyev leaving the ship on January 16 for his walk in space.



After the space walk of the two cosmonauts from Soyuz 5 to Soyuz 4, an *Izvestia* correspondent met pilot cosmonaut Alexei Leonov and asked him to comment on the experiment.

QUESTION: Could you please speak of the importance of the docking of the ships and the walking of the cosmonauts from one ship to the other for the future of astronautics?

ANSWER: Docking, both automatic and manual, opens the road for the establishment of orbital stations that will be used for scientific investigations calling for lengthy stays of specialists in space. It will be necessary to replace the crews of such stations, and the experiment of Soyuz 4 and Soyuz 5 is the first test of this kind. The walk of Alexei Yeliseyev and Yevgeni Khrunov shows that this is quite a realistic thing. Besides, the flight confirmed once again that the cosmonauts will be able to take part in assembling large orbital stations. At the same time this is in some measure a rehearsal of an emergency situation. The flight of the two Soyuz ships demonstrates that should such a situation appear, and this is something that cannot be precluded, our cosmonauts will always get assistance and will be able to return to the Earth. It is very important to feel that you have a reliable "backup."

QUESTION: What is the difference between this experiment and your walk in space?

ANSWER: We had absolutely different ultimate goals in the experiments. My job was to make the first walk in space and check whether man can live and work in a space suit under the conditions of a vacuum and sharply contrasting temperatures. Khrunov and Yeliseyev, in addition to this, had to perform the concrete operation of walking from ship to ship, an operation which future cosmonauts will have to perform fairly often.

The ships of the Soyuz class are much bigger and more comfortable than our Voskhod. Unlike Voskhod, they don't have a special lock chamber. Instead, the entire orbital compartment, where the cosmonauts make scientific experiments and rest, is used for this purpose. Before changing ships, the hatch door to the crew compartment, where the ship commander remains, is pressurized, the air is removed from the orbital compartment, and then the hatch door into space is opened. During the walk the cosmonauts used a life line employed for communications during the passage and for checking the state of the organism.

QUESTION: In what way was the passage from ship to ship worked out on the Earth?

ANSWER: At first the entire experiment was performed visually on the Earth, so that the sequence of action was determined and the pattern of walking was evolved. Then experiments were made with a laboratory plane, which had installed in it two docked orbital compartments, absolutely identical to those in Soyuz 4 and Soyuz 5, and in conditions of brief weightlessness the cosmonauts went from ship to ship.

When this stage was covered, the time came for work in a gigantic thermal and pressure chamber which also had two docked ships installed in it. In conditions close to that of space, the cosmonauts worked out the passage procedure. It should be said that this is much more difficult to do on the Earth than in the state of weightlessness.

And, last but not least, there were integrated training drills with all the spaceship crew members taking part, and with the entire flight being rehearsed from beginning to end. There was a good deal of training, according to the principle: The harder the training, the easier the work in space.

QUESTION: Apparently the sensations of Khrunov and Yeliseyev, who walked in space, are in some measure similar to yours. Could you perhaps recall what you felt when you left the ship?

ANSWER: Sensations are always subjective. Yet, apparently there is a common objective denominator of sensations. A very vivid de-



Back on the good earth, the cosmonauts receive a warm welcome as they leave the helicopter.

scription of these sensations of man walking in space was offered by Konstantin Tsiolkovsky in his book *Outside of the Earth.* I read that book earlier, but did not pay attention to details. When I read it again after the space flight I was amazed at the subtle and clever way in which he depicted even professional trifles. The difference is only in terminology: He calls the lock chamber a box, the life line a chain, and the vacuum screening insulation an overall. Yet, the entire process of the emergence and the emotions of the men in "overalls" are described so accurately, that you would think that Tsiolkovsky had walked in space himself. He wrote the following lines:

> It seems to me, and nobody could persuade me that it was otherwise, that I was turning with my handles the entire firmanent with the Sun and the stars. It was like a merry-go-round: If I wanted I could turn the firmanent quicker or slower or stop it completely. . . . It seemed to me that I pulled the rocket to me by the chain, and it submitted obediently. . . . Yet, the thing was that my rotation produced the illusion of the movement of the sky.

This is put very aptly and accurately. Indeed, you make the slightest movement, and the stellar world begins to rotate. This is an unusual sensation.

The unusual nature of the situation is accentuated by your having to make yourself get accustomed to the thought that you are not falling down, that you have no need to fear the altitude of 124 miles, and that the velocity of 17,400 miles per hour, with which you fly in orbit, is nothing for you. You have to get used to the thought that all these conditions, seeming so exotic from the ground, are normal for you. And you do get accustomed to this thought. I, for instance, did not even think that I would fall through somewhere. I came out carefully, pushed myself away and I was in space. Training drills and visual rehearsals of the entire situation, while on the Earth, had completely prepared me for this. I think that Khrunov and Yeliseyev were also prepared.

QUESTION: What advice did you offer them at the training drills?

ANSWER: The main thing I stressed was not to hurry and to do everything smoothly. Think for a good while and then move your finger; then think just as much and move your hand. Every movement is connected with the production of heat in the space suit. Heat accumulates in the suit with sharp and hasty movements. This is a great impediment to work and can even lead to the cosmonaut's loss of working capacity. Naturally the cosmonaut's state is controlled—his temperature, pulse beat, respiration, blood pressure and other medical parameters are sent to the Earth and to the ship. Watching these indicators, the men conducting the flight can always take precautions and order the cosmonaut to return to the ship if need be. But the cosmonaut himself has to use his own judgment.

If you push yourself away from the ship too sharply, you can start rotating around your own axis, even get into rotary motion around several axes and, in that way, lose orientation in space. Therefore the degree of effort and the direction of the angle at which you push yourself away should be carefully calculated.

QUESTION: Will the cosmonaut walking in space always be connected by a life line to his ship? What individual means of transportation for cosmonauts can appear in the future?

ANSWER: I am not sure that man will have to go dozens of miles away from the ship. The diameter of the future orbital station will hardly be more than six-tenths of a mile. With individual transportation means of the type of rocket pistols or portable jet engines, it will be dangerous to go far away from the station. The stock of fuel may peter out. Therefore, when you move away from the ship by means of rocket pistols, you should have an emergency life line 990 to 1,600 feet long. With the use of modern materials it is easy to make such a life line light and strong. In independent trips of large distances it will be necessary to use some space "motorcycles" with a sufficient stock of fuel for their jet engines. And time will show what these motorcycles will look like!

Courtesy of Izvestia

PERSONALITY, GENERATION, HISTORY

By Tatyana Ivanova
Film Critic

Personality, generation, history—where they cross is a perpetual problem for the arts.

The artist who tackles that problem must think in terms as large as life. He must have the capacity to probe deep into his characters, to reveal their relation to the society and the times they live in. He must be able to dissect these deep-rooted links. Although the three films I will be discussing are unlike in style and manner, they touch on kindred subjects. But let me emphasize that to the directors of these films, what makes a generation is not so much the concurrence of age, education and career as the sharing of common experience, the common involvement in the tide of history. Granted that within a generation lives shape themselves differently—some are caught up on the crest of events, others are set adrift in shallow waters—relationships between generations are keyed, too, to the tide and content of the age and are determined by them.

Daytime Stars

IT IS its non-fictional heroine, the well-known and still living Soviet poet Olga Berggoltz, that gives this film such impact. The moving poems Olga Berggoltz wrote in beleaguered Leningrad during the Second World War were avidly read and learned by heart. The tragic theme of blockaded Leningrad haunted the work of this poet for many long years afterward. In her poems and prose she drew with rare intensity her portrait of a "Leningrad woman," somewhat detached, but making us feel the full measure of the woes and tribulations that befall her. She loses child and husband and from the first to the last sees it through the horrors of the nazi blockade. So great are her sufferings that even the sound of her name has the poignancy of a dirge.

Based on a volume of lyric prose by Olga Berggoltz, the film brings us the anguish and the pain of this wartime experience.

Complex in structure, the picture plays fast and loose with time. Different historical periods shuttle back and forth to clash, contrast and converge. Action in the present day shifts five years back, and to the Russia of 1917, and to the Old Rus of the early seventeenth century. This is a technique mastered to perfection and therefore unimportant in itself. What is important is that far from being a mere compositional device, the "unfixity" of time, the bringing together of time periods, is the key to the film's underlying idea.

Thus, relief from personal grief is sought and found by the heroine in a fortitude derived from indentification of her own destiny with her people's collective destiny—at its most dire as well as most exultant moments. "Whatever the nation has experienced, so have I. . . . I take it all—the heavy cross and the hope."

The barriers between past and present fall away. In the crucible of human experience, in the susceptibility of the poet's heart, the past and present become one. So intense is this oneness, this link with the people's destiny, that scenes from history

Two stills from the film Daytime Stars. *Alla Demidova plays the poet Olga Berggoltz and Andrei Popov plays her father.*





The church bell is publicly whipped in Uglich's town square before being sent off to Siberia into exile.

recreated by the imagination acquire the reality and tangibility of childhood recollections—the personality seeking identity-roots in the past of the nation, in its history.

The plot is simple. On a day of the Leningrad blockade the heroine steps out of her own home and trudges to the other end of the city to pay her father a visit. When she reaches his home, warms herself at the feeble glow of the makeshift stove, is comforted and urged to go to sleep, the film is over. Her long tramp across the city, interspersed with flashbacks from her past, reveals the journey of a life that invites historical parallels.

Leningrad is shown in the vise of the blockade, tragedy stalking every step. There are the empty vistas of the city's lovely streets, buses and streetcars buried in snowdrifts, lone, gaunt figures of passers-by hardly able to drag their feet. The houses are a sorry sight inside, too, with boarded up windows, the only light supplied by the flicker of kerosene wicks, the people tormented by gnawing hunger and with only their own breath to warm themselves. The scenes can only compare with some terrible phantasmagoria.

And yet they are real, derived from authentic accounts of eyewitnesses. The spell of this harsh reality is broken by the sudden intrusion of something out of another world, something that brings the promise of a miracle. Startling things begin to happen, the heroine accepting them without question. The doorbell, long dead for lack of electricity, rings unexpectedly. She answers it and follows her strange visitor, a young girl dressed in the style of the twenties. They descend the dark, icy stairs—the weary woman, huddled in shawls, and the young girl in a cloud of pink ruffles and bows.

A new miracle awaits them as they slip out of the house. Instead of the icebound, shell-pitted city, they find themselves in a meadow spangled with spring blossoms. The air vibrates with the ringing of the church bell. They are in Uglich, the old Russian town where the heroine spent her childhood. Three and a half centuries ago the city witnessed one of the gory tragedies of Russian history. Popular riots broke out after the murder of the boy Dmitri, son of Ivan the Terrible and rightful heir to the throne, by supporters of the pretender Boris Godunov. Refusing to accept the official verdict of accident to explain Dmitri's death, the rioters lynched the supposed slayers. The riots were cruelly suppressed and the ringleaders punished. A penalty, too, was imposed on the church bell which had summoned the people to the scene of the crime. The bell was brought out into the city square where the populace was assembled. It was publicly whipped, its tongue was torn out, and it was rolled off to Siberian exile, so history tells us.

Stark, concrete, yet picturesque and alive with the hues of old-time Russian costumes —*sarafans,* blouses, bright vests, headgear and homespun tunics—the scenes are snatches from history but not really historical. Some new genre seems to be at work, expressed not so much in the sudden appearance in the crowd of a woman in modern dress holding her hand to her mouth to suppress a cry of horror as in the stress on human drama and in the predominance of the lyrical.

In the midst of the mob of seventeenth century townsfolk staggered by the crime, we pick out the film's heroine. No jarring note is struck by her presence.

The scene then shifts to Leningrad of the late thirties when a group of political adventurers wormed their way into the state security organs and flagrantly broke the country's laws. From the billboards Lyubov Orlova, popular movie star of the time, smiles archly down upon the passing crowd. But the people themselves appear depressed, estranged from each other, and so preoccupied that the wierd procession, again a snatch from the past, that intermingles with the stream of traffic escapes their notice. But we see it—the pilloried church bell, the imprisoned rioters from Uglich in their tattered garments, their hands tied behind their backs. And once again the film's heroine stands there horror-struck, her hand against her mouth, suppressing the cry of anguish and heartache. Past and present meet again, and the recurrent motif of personal experience identified with national plight is further emphasized.

Sequences set in the present day on the deck of a pleasure boat sailing the Moscow River bring the glow of new life. The brass doorknobs shine, the glassware sparkles and the tablecloths gleam on the restaurant tables. Strains of music can be heard. There is dancing. Shyly, the young waitresses approach the celebrated poet and ask for her autograph. *"Budte schastlivy!"* (Be happy!), she writes. Dares she herself whose life has been one long chain of irretrievable losses think of happiness?

Yes, we are told, she dares. This affirmation is not lightly given but is the result of the pondering pursued throughout the picture, revealing the inseverable link between the individual and the nation, the truth that a person's life is worthwhile to the extent of that "inseverability."

Sky of Our Childhood

THERE is perhaps in the title of the film *Sky of Our Childhood,* produced by the young Kirghiz director Tolomush Okeyev, a slight affectation at variance with its lucidity and simple charm.

Tracing a well-defined shadow, the helicopter flies over the mountains, its engines throbbing, the view spreading into a panorama. There are mostly schoolchildren and old people aboard. Kirghiz housewives, returning from their shopping, feel at home at this height and chat leisurely. Next we see a transistor radio hanging from the saddle of a former nomad, a drove of nervous horses contrasted with the stream of heavy trucks in the steppes, a bulldozer beside a faded nomad tent. We wonder with some uncertainty if these scenes are picked to deliberately contrast the old and the new in these ancient steppelands of Asia.

Among the children flown in from town by the helicopter to spend their holidays in their native village is the boy Kalyk, youngest son of Urum and Bakai, a late child on whom his parents dote. Doubting whether

Stills from Sky of our Childhood. *Tolomush Okeyev directed this film set in Kirghizia about the generation gap.*





Nikolai Dubashev as Kalyk, the youngest son of Urum (Alimun Zhumbirmanva) and Bakai (Muratbek Ryskulov).

city life is good for the boy, Kalyk's parents consider having the boy leave school to stay in the village and be their standby in old age. The situation even gives rise to some quibbling. Much as they want their son to stay, however, in their heart of hearts they know that when the term begins he will go back to the city school.

That sums up the film's action. There is little dialogue. The characters are shown at their daily tasks, tending the fire, minding the babies, loading the camels, curing the animal skins, lining their tents with felt. We see them lasso their horses, tether them to poles, lift the hot irons out of the flames and brand the flanks of the rearing animals.

But because the director has the heart of a poet with a rare epic sense, these homely scenes come to life on the screen with the stark, compelling force with which Homer describes the way Hermes forged the shield of Achilles. At the same time we miss none of the dramatic implications which bring the story to its climax.

It is indeed on the coming to grips of the old and new or, more correct, on the problem of the generation gap, that the film dwells. The fact that at the outset we are uncertain about it is not due to any half-heartedness in tackling the theme but rather to its presentation in a new epic light stripped of the cocksure certainties and vanities of current fads.

This sets the key for the film's dramatic undertones—the women's lamentations over the fate of a widowed old man, the guilt the bereaved son feels because he was always tongue-tied with his father, the impatient, eager questions of Kalyk's parents. It is echoed in the tenderness of the mother and the father's supplication—"Let the boy gaze at the stars," in Kalyk's remorse and tears, which soon dry up, however, as he bids his parents good-by.

The young fledglings leave the parental nest to try their wings. They cannot be stopped any more than life itself can be stopped. Their departure leaves heartache in its wake. It is an affront in a way. The drama of life is in the complexity of human relationships, in the need to break away. It is there when the joy of reunion is marred by the knowledge that separation must come, when smiles at parting are mingled with tears. It is in the awareness that the old ways are disappearing and with them their romance is dying, too. The film makes the point with shots of an old blind eagle flapping its wings clumsily and making a feeble attempt to soar. But the proud unwanted bird only succeeds in cutting a pathetic picture.

In one of the final episodes this central idea is brought home with great force. We see the gray-bearded horsemen with deep-furrowed serene faces slowly going up the narrow mountain path. And then the scene shifts to a group of chasing, tumbling, uproarious youngsters running ahead without a glance back. We know that the old men will return to their tents and pastures, but the young lads and girls will abandon them forever. In these scenes are caught the throb of life's progress, its wisdom and compelling force.

July Rain

UNLIKE the placid overtones, the well-etched landscape of steppe and hillside in *Sky of Our Childhood,* Marlen Khutsiev's film *July Rain* carries us into the atmosphere of sophisticated urbanity, with its tensions and high fever. There is the bustle and hubbub of the city streets, the sudden early morning spill of buses into empty macadam squares, the milling crowds squeezed by the rush of traffic into the underground passageways and swallowed up. And there is the pandemonium of noise and din—the swish of automobile tires, discordant voices, the strains of the overture from *Carmen,* a soccer game on the radio, scraps of conversation, a popular jazz tune.

With this the film opens, presenting documentary-like stills and sound track.

The story is about a not-too-happy love gone to seed. It is related in a pensive vein with a note of sad anticipation. Love's frustration results from a listless repression mingled with an inner skepticism, from a sordid preoccupation with petty things and subconscious fears that prevent the lovers from declaring and fighting for their love. And that love withers before our eyes, corroded from the inside.

There is more to the film's story, however, than meets the eye. Attention is focused on quite a number of characters, mostly persons between thirty and forty, belonging to the same generation, the generation that did not fight in the war but has vivid memories of it. The audience is given glimpses into their lives, nothing whitewashed, nothing blackened, and is left to draw its own conclusions.

Open confrontations do not occur. The characters are not shown as good or bad. But in bringing us into Moscow homes where people gather who know each other intimately and in whose midst you will find the half-baked "intellectual," the "pop singer" and the "misfit," the director, with infinite discretion, makes us see where sordidness lurks behind the pretty phrase and gesture.

The points raised in the film are the relationships of man and modern civilization, style, as one of its manifestations, true culture, and man's responsibility to himself, society and the times.

For all its subdued tones and musicality, Marlen Khutsiev's style is crisp and vigorous. In the final scene the smooth narrative suddenly explodes. True to its compositional concept, the film ends with a reunion on the Bolshoi Theater steps in Sverdlov Square. The strains of a half-forgotten army song float in the air, while the war veterans, with medal ribbons on their best suits, greet and hug one another with tears and laughter. This scene then dissolves into a moment of meditative silence. The eye of the camera travels upward, lingering on the Bolshoi Theater columns, and the music changes to an old Russian song with its easy flowing, vaguely melancholy melody. Again we catch a glimpse of what goes on at the foot of the columns—we see a group of teenagers and get a closeup of their faces as they turn a searching, unflickering gaze on the older men.

These growing youngsters, we know, will soon be faced with the choice of their own roads in life. This new generation is apparently going to be the subject of Marlen Khutsiev's next film.

July Rain is film director Marlen Khutsiev's latest effort. The story is about man's responsibility to himself and his times.





Yevgeniya Uralova plays Lena and Alexander Belyavsky plays Volodya, two young people in love



TOWNSPEOPLE NOT MUCH OLDER THAN THEIR TOWN



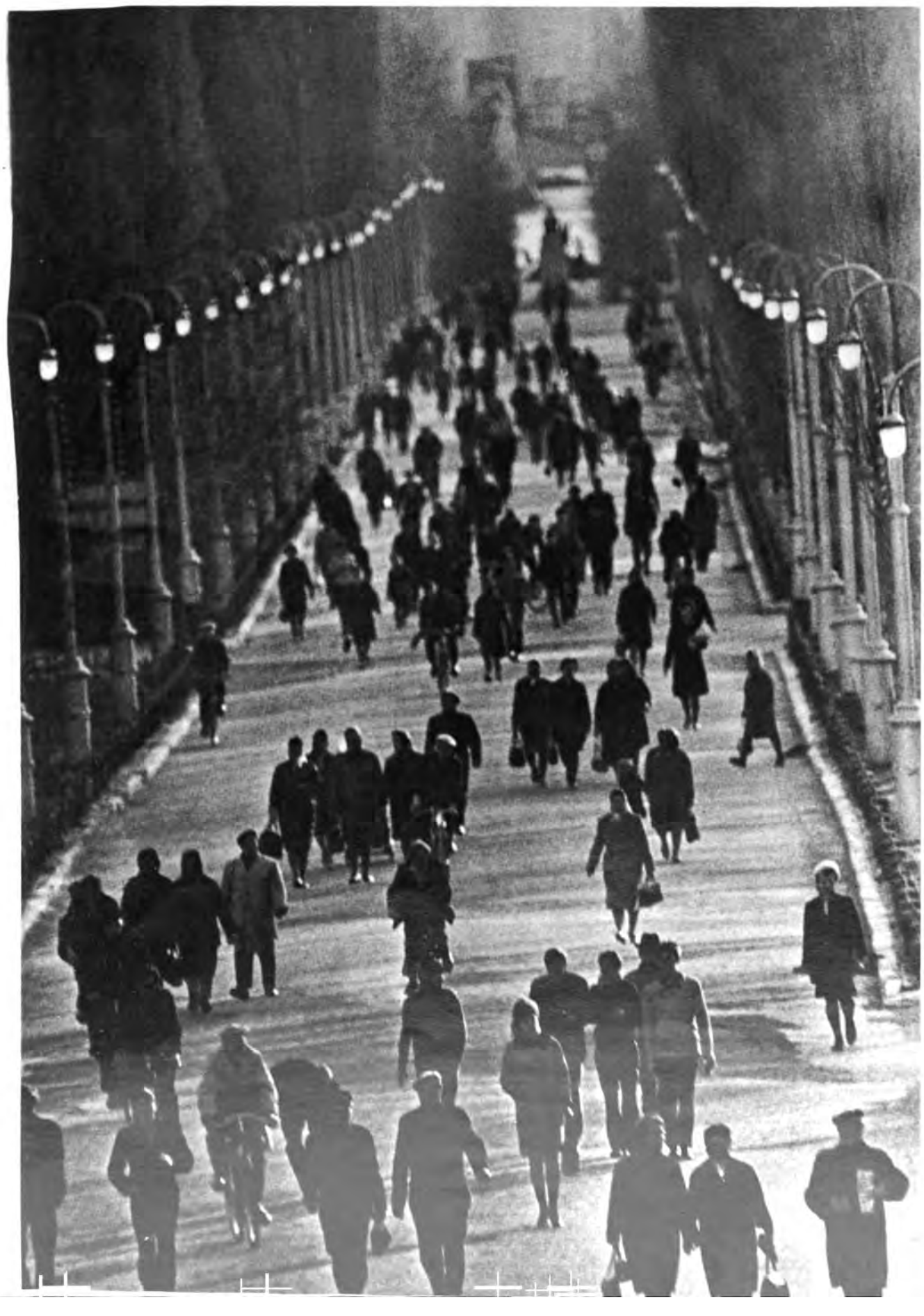
PHOTOGRAPHS BY ALEXANDER MALKIN,
YURI KOROLYOV

The up-and-coming major industry of this long time coal and metal area is chemicals. This modern day alchemist, senior scientific worker Victor Granzhan, conjures up nitrogen derivatives in his laboratory.



A working altitude of almost 700 feet does not bother Petro Jus. He and other young Severodonetsk steeplejacks are assembling the framework for a heat and power plant.

A typical street scene in Severodonetsk. The town has its own population explosion, with the highest birth rate in the country after Bratsk, a new Siberian town.





SEVERODONETSK is twenty-two years old and has a booming population of 80,000. Its inhabitants are on the average only a little older than the town itself—twenty-six. This fact leaps to the eye of every newcomer. There are young people in the shops of the chemical plants, in the laboratories of the research institutes, everywhere.

A quarter-hour's ride from Severodonetsk, at the edge of an overgrown ravine, stands a concrete pedestal bearing a memorial plaque. It says that the first shaft in the Donets Coal Basin was sunk right there two and a half centuries ago. For decades this famous industrial district in the Ukraine has been supplying the country with coal and metal.

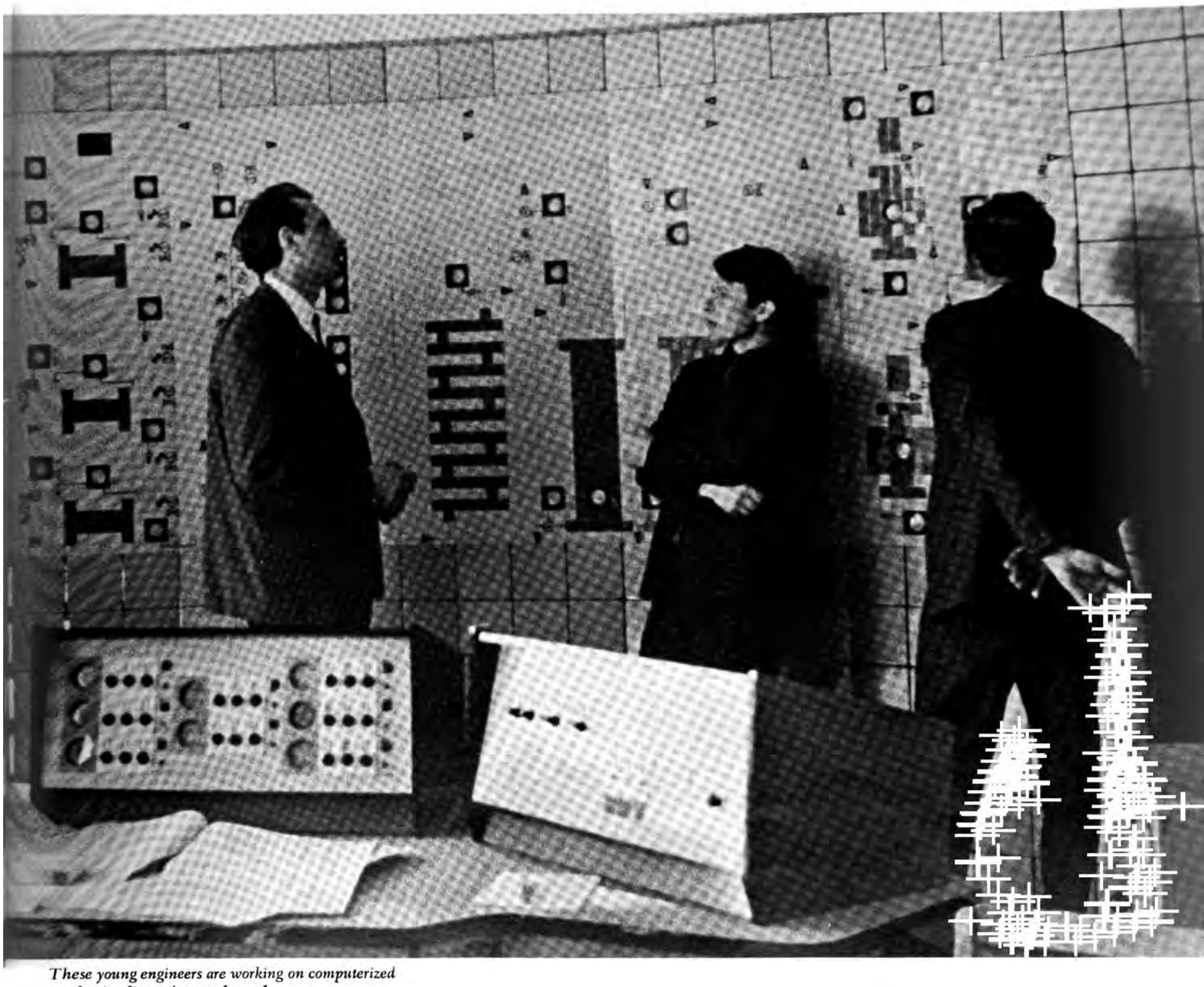
In recent years other industries have been developed, notably that of chemicals, the youngest and most promising. Severodonetsk is the center for this new development. Looking straight down the "memorial" gully, you see rising beyond the green brushwood around the Northern Donets River a complexity of pipes, towers and high-voltage masts—the industrial landscape of the new town.

Construction first began in the 1930's, but the little settlement was razed during the war. All that remained was quicksand. Burning heat and dry winds swept the barren soil. Sands blew onto the roads, threatening the meadows and gardens along the river. When builders returned in 1947, their buckets and dippers stirred up the sands. A suffocating cloud of dust hung low over the building site day and night. The "tree and shrub planting department" started working almost before the shops of the future chemical complex did. Compared to the machinery provided for the other departments, the planting equipment was primitive: only spades and watering machines, plus trucks bringing in fertile black earth from around Severodonetsk. But the sands began to retreat.

The greenery problem was linked with the problem of water deficiency, a crucial one in arid Donbas. Ordinary piped drinking water was used, but it lacked the required nutritive minerals. Besides, there was not enough to go around, even for drinking. The river had to be turned to. A specially-laid, six-mile water main connected the town with the Northern Donets, and another two miles of pipes—with the little Borovaya stream. A man-made lake appeared.

Seen through the trees, the neat rectangles of Severodonetsk's streets look like clearings in a thick forest. The surrounding chestnuts, Lombardy poplars, oak, ash and maple give the feeling of a preserve rather than an industrial town.

The greenery is there, of course, not sim-



These young engineers are working on computerized production lines. A control panel they have designed will soon be operating at a chemical plant in Severodonetsk.



This is a sports-minded town. Not surprising, considering the number of young people. Tennis is a favorite, which is surprising; the sport is relatively new in the USSR.

ply for aesthetic reasons—to add color. It provides health insurance: A live barrier that separates the residential areas from the chemical complex and, at the same time, stops the sand and dust-laden winds from reaching the plant buildings.

The giant chemical complex supplies the entire country with nitrogenous fertilizers, toxic chemicals and synthetics for the manufacture of nylon and extra-hard plastics. A stubborn campaign is being fought against the many occupational diseases chemical workers are prone to. A new and much admired shop was almost closed after several workers fell ill. The "culprit"—six-valent chromium—was quickly found and two-valent chromium—an almost non-toxic metal—was substituted for it.

Working conditions in the low-concentration nitric acid shop were especially hazardous. It took a fundamental reconstruction and the reassembly of all the equipment outside the shop proper, to eliminate the hazard. The alterations cost 3 million rubles, but the incidence of occupational disease was reduced by half.

But all of this constitutes only a small percentage of the money and effort spent to safeguard and build up health. The basic preventive medicine here is sports. Even a cursory survey of the city makes the point: 700 sports grounds and facilities —tennis courts, basketball courts and soccer fields, to mention a few. An unusually large number for a small town.

Many of the young people one sees on the streets carry themselves like athletes. This is no chance impression; statistics say that every second Severodonetsk resident participates in some sport. You won't find any record-holders or champions here; that is of incidental value. More important is that there is no problem finding a vacant tennis court, and they are all free of charge. The construction plant's stadium alone has 13 courts. An imposing figure by our standards: Tennis was never a mass game here.

Severodonetsk's indoor courts are considered the best in the country, and all-Union tennis matches have been played here several times. The town's sports facilities, in general, are superior. Serious attention is paid to their construction, and sports-minded townspeople are involved in their planning and building. Severodonetsk has a sports council with representatives from the plants and various organizations.

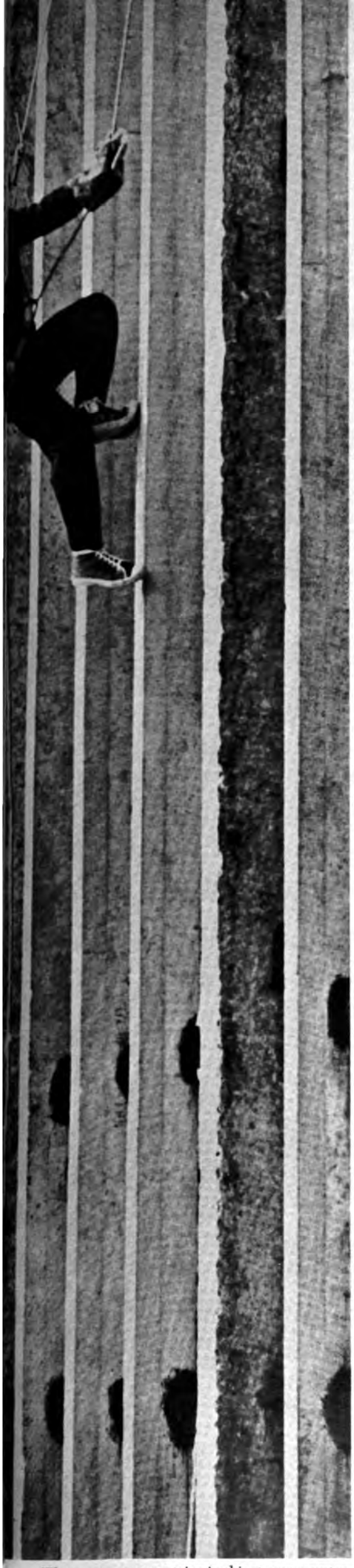
The lead in pushing for sports construction comes from the young people, as it should. The construction agencies are not always able to cope with all the contracts, and that's when volunteers flock around. Young engineers in their free time draft original and inexpensive designs for sports facilities, and young building workers translate them into life.

The only ones who do not take comfort in the optimistic figures on sports construction are the local mountain climbers. There are not many in this town surrounded by steppeland—only 147. Since nature has not supplied the training facilities they need, they climb practically "anything that is vertical," even buildings on their way up.

Despite the great popularity of sports, the interests of Severodonetsk's residents are apparently not one-sided, judging by its 48 libraries with their 64,000 regular readers—three-fourths of the town's population.

For all its special qualities, Severodonetsk is a typical, young, fast-growing town which is being built according to plan. Its citizens have much in common with their counterparts developing the country's taiga, tundra, desert and arid steppes.

Courtesy of the magazine Soviet Union



There are no mountains in this steppe country, but that does not stop the local climbers. For practice Svetlana Danilevskaya scales the ice-skating rink the town is building.



The motoball team is one of the best in the Ukraine. Two years ago fitters Alexander Aseyev and Yuri Antipin, assembler Anatoli Kezikov (left to right) and their teammates won the cup presented by the newspaper Molodezh Ukriny (Youth of the Ukraine)

Though there is no water to speak of in Severodonetsk, some of its citizens go in for skin diving. They work out in the Black Sea and the Pacific and often help deep-sea divers do underwater repair work. The local club is named after Sadko, a folklore hero.



CRIME AND ITS CAUSES

by Sergei Ostroumov
Doctor of Science (Jurisprudence)

All the basic socioeconomic causes of crime—private ownership of the means of production, society's division into antagonistic classes, unemployment and poverty—have long since been eliminated in our country. There is no discrimination against any section of the population. One would think that the very foundation has been cut out from under crime. How are we then to explain the thefts, robberies, murders, bribery and other crimes that still occur? What must we do to prevent, anticipate and completely wipe out crime in our country?

Let us turn to statistics. If we take the number of persons convicted for crimes in 1928 as 100, by 1955 it had dropped to 63, although the population had grown from 147 million to 194.4 million. This decline in crime continues to this day. The number of convictions in 1965 was down 47 per cent from 1958, with the population figure up by 9.7 per cent. It is noteworthy that the number of convictions per 100,000 population in 1964 was half the prewar figure and less than one-third the 1928 figure.

So the incidence of crime has been dropping year by year, but it is still with us. Why?

Here we must make a distinction between the objective factors responsible for preserving crime and those responsible for encouraging the commission of crime. We explain the survival of crime in our country as a carry-over from the past, the product of attitudes inherited from the old private-property society. But what explains the persistence of these attitudes? Although the economic conditions responsible for them have long since vanished, they continue to exist as sources of antisocial behavior and, under certain conditions, even of crime.

These are the most widespread causes or motives (which in many cases coincide) for so grave a crime as premeditated murder: revenge, 19.1 per cent; jealousy, 11.3 per cent; hooliganism, 29.4 per cent; greed, 8.8 per cent; quarrels ending up in fights, 20.7 per cent.

The causes of crimes committed by juveniles under 18 are curious (the figures are based on a selective inquiry): false romanticism, 24 per cent; craze for high living, 22 per cent; thoughtlessness and lack of will power, 18 per cent; loose morals, 16 per cent.

Obviously we still do have conditions making for the survival of some vestiges of the past; hence also of crime. First among them is the fact that consciousness lags behind being. Being changes faster than consciousness. Referring to the difficulty of overcoming the vestiges of the past, Karl Marx wrote: "The traditions of all dead generations weigh like a nightmare on the minds of the living." The vestiges of the past are a terrible force; they survive in the life and consciousness of millions of people long after the social and economic conditions which bred them have disappeared.

Here is a case in point. It occurred in a small provincial town. Seventeen-year-old Valya Los left the house to go into the garden. A terrible scream shattered the quiet. The girl's father rushed into the garden and found Valya dead. How did the girl die? The murderer was a neighbor named Pukhovnikov. The Pukhovnikovs had planted an orchard on a plot they had been given and built a high fence around it. The trees yielded their first crop. One day Pukhovnikov discovered apples missing from one of his trees. Beside himself with rage, he stretched two 220-volt live wires around his plot and orchard. The girl accidentally touched one of the wires. "You knew that by switching on the current you were endangering the lives of your neighbors. Why did you do it?" Pukhovnikov was asked. And he replied wildly: "What's mine is mine. It is my right."

What are the concrete conditions under which a potential crime becomes an actual crime? The fact is, not all those with attitudes carried over from the past commit crimes. We must therefore determine the conditions which, like catalyzers, activise, invigorate, unleash the motives.

Generally speaking, these conditions are produced by bad family relations, poor schooling, drink, the inadequacies of daily life and leisure, shortages of certain goods, ineffective work by the militia (police), prosecutors, courts and crime-prevention institutions, etc. Here is what *Kommunist*, organ of the Central Committee of the Communist Party of the Soviet Union, has to say on the subject:

"It is important to remember that vestiges of the past cling to the consciousness not only because consciousness lags behind being, but also because of the difficulties, contradictions and complications of life itself. It is sufficient to recall the suffering inflicted by the last war and its dire effects on the material conditions, the everyday life and consciousness of people. Difficulties and contradictions, insecurity and personal misfortune help not only to maintain but even to revive vestiges of the old ideology and morality."

Hence, certain conditions may serve as the link between a given cause (greed or envy, for instance) and a given effect (embezzlement, for instance). It should be remembered that a change in conditions leads to a change in the operation of the given cause and may even make it inoperable altogether. Thus, rising living and cultural standards, as the Program of the Communist Party of the Soviet Union points out, provides the basis for the elimination of crime, that is, of the vestiges of the past in the minds and actions of people. For example, meeting the demand for goods in short supply undermines the ground for speculation and the survival of private enterprise.

Criminal statistics offer a more or less accurate picture of the causes of certain categories of crime. One of the prime causes in our country, for instance, is alcohol. The figures show that 67.8 per cent of the premeditated murders are committed by persons in a state of intoxication. This is confirmed also by the data on murders committed on holidays: on legal holidays, 13 per cent; on Saturdays and Sundays, 14 per cent; on religious holidays, 21 per cent; on days of some particular moment to individuals (birthdays, name days,

weddings),. 5 per cent. Hence, 53 per cent of the murders are committed on holidays, which are often accompanied by drinking. It may be added that 96 per cent of the hooliganism, 67 per cent of the rapes and 57 per cent of the bodily injuries are also committed when drunk.

Personality development depends not only on the social system but on the immediate daily environment. In other words, the consciousness, the spiritual attributes of a man or woman, a young boy or girl, their mental powers, their resistance to bad influences depend to a very large degree on the so-called microenvironment in which they live.

One of the most important causes of crime among minors is poor family upbringing. This often leads to the neglect of the child, with all its unfortunate consequences. According to the data of one of the regions of the Russian Federation, 68 per cent of the hooliganism was committed by people whose childhood environment was unfavorable: They grew up with no family at all or in families without a father or mother. Ninety-one per cent had lost one or both parents before the age of 12. A study of thieves with more than one crime in their record revealed that 73 per cent had grown up without one or both parents; 62 per cent had committed their first theft before they were 18.

But this question arises: Why is it that only a few of the people with those firmly entrenched individualistic hangovers commit crimes under the influence of certain causes and conditions, while the majority live by socialist laws and morals? Which brings us to the personality of the criminal, subjective psychological characteristics.

It is obvious that man's psychological attributes—such things as thoughtlessness, cruelty, cowardice—play an important part in behavior in general, and criminal behavior in particular. But, it seems to us, the subjective psychological characteristics are relevant only in connection with a specific crime. For the study of crime in general, examination of individual psychological characteristics does not help us elicit its typical features and laws. The fact that among criminals we find, say, a certain percentage of individuals with sanguine or choleric or other temperaments does not in any way influence crime as a mass phenomenon. It is quite another matter when we study a particular crime or the person who committed it. Criminal behavior then is due largely to individual character or temperament. We know that the same objective conditions have a different effect on different individuals.

The part played by individual psychology in the commission of the crime should not be exaggerated, but neither should it be ignored. We must underscore our belief that individual personality is the product of the conditions under which a person grows up, lives and works. Hence, important as a man's subjective influences are, his actions and behavior depend upon the concrete external conditions and circumstances. These subjective influences may make the commission of a crime more likely or prevent it, but under no circumstances do they inevitably doom the man to become a criminal. Recognition of man's ability to resist bad influences is one of the basic planks of Soviet criminology.

About the criminal personality in our society, I should like to make this important point. As a result of numerous criminological investigations we have concluded that material conditions do not play a major part in the formation of antisocial attitudes and habits. The center of gravity here has shifted, as far as we can judge, from economic to cultural factors. Here is an example.

In the Central Black-Earth Area 85 per cent of the criminals covered by an inquiry had less than eight years of schooling, and 2.6 per cent were totally illiterate. It is typical that among murderers the percentage rose to 4.4 per cent, and among habitual criminals to 5 per cent, this being twice to three times the percentage of illiterates in the population as a whole. We should note that this percentage of the population, which according to the 1959 census was 1.5 per cent, consisted mainly of old people and those who were either chronically sick or suffering from some physical defect. But the bulk of criminals are young people, two-thirds of them under 30, people who had had every chance for an education.

No less instructive is this comparison. The percentage of Soviet citizens with a college or high school education in 1959 was 28.1 per cent, including 1.8 per cent with a complete higher education; the figures in 1967 were 36 and 2.7 per cent, respectively. But the percentage of educated individuals in the total mass of criminal offenders was 9.1 per cent, including 0.4 per cent with a higher education; among hooligans, the figures were 8.2 and 0.5 per cent; among murderers, 8.2 and 0 per cent; and among recidivists, 7 and 0.5 per cent, respectively.

That habitual criminals have no cultural interests is evident from the following: 95 per cent of them were never active in community affairs, 55 per cent read no books, 41 per cent read no newspapers or magazines, 79.5 per cent never went to a theater, etc.

If we are to fight crime effectively, these figures tell us, we must raise the cultural standards of the population generally.

Courtesy of the magazine Nauka i Zhizn

NEXT ISSUE



The turbulent Vakhsh in the Tajik hill country of Central Asia will shortly be stemmed by a thousand-foot dam. The river has already been tunneled to a temporary bed and the foundation of the 2.7-million kilowatt Nurek power station is being laid. The project will bring electricity and much needed water to arid pastures and potentially rich cotton land. See the May issue for an illustrated story about the Vakhsh reclamation program. It was started 40 years ago by cotton growers who dug channels in the rocky soil with pick and shovel.



Pop singer Edyta Piecha has an astronomical following. She is vocalist with the Druzhba (Friendship) Ensemble, a group that made the long jump from amateur to professional status and fame in a phenomenally short time. Edyta had much to do with it. She is mobbed by fans in and out of concert halls. Her singing style and even the slight foreign accent she has been working for years to lose is being copied by aspiring performers. The story of this Soviet Piaf who was born in Poland and lived in France as a child next month.

About a Tajik university graduate who goes back to his native village to teach physics. His parents, like most of their generation, were illiterate peasants. Now a high school education is being made compulsory. A leap into today's world of science from illiteracy. It faces this teacher with a complexity of problems. How does he meet them?

In Russia the seed of Marxism fell on fruitful soil, made ready by generations of fighters against czarism. Revolutionary thought and action took varied forms, from poetry to regicide. Though idealistic and inconsistent, the nineteenth century revolutionaries contributed markedly to molding popular attitudes, thereby paving the way for the Marxists.

Excerpts from a novel on the life of Lenin by Marietta Shaginyan will appear in the forthcoming issue. The chapters focus on Lenin's youth.

An artcle with the pleasant thesis that wine, besides its familiar virtues, has medicinal values as well. The doctors say that wine helps digestion and metabolism, is good for the nerves and adds years to your life. Centenarians in the Caucasus—they seem to be unusually common in that part of the world—much prefer their local wines to water.

A visit to Tallinn, the Estonian capital on the Baltic, where you turn the corner of a modern street and find yourself in a medieval city.

Among the icon painters of the Russian Orthodox Church, the Karelian craftsmen held an honored place. An article on their masterful work.

COMING SOON

The ever-young world of the circus.

THE MARSH KINGDOM IS DYED GREEN

By Vladislav Bakhrevsky

In the beginning the Marsh Kingdom was black. Everyone avoided it, and the Marsh King grew dark and twisted from grief. He thought and thought and finally came up with a brilliant idea. He summoned artists and ordered them to dye the marsh green.

Artists are honest people. They did not want to hurt either animals or men, so they refused to dye the marsh. That made the king very sad. He ordered the artists to be wrapped in slime and shelved.

One artist felt so sorry for himself that he agreed to dye the marsh. He worked and worked. The king was pleased with his work. Now the earth was green and the marsh was green, and there was no way of telling them apart. The artist mixed them up and sank into the Marsh Kingdom.

"You are one of us!" the people in the kingdom cried. "You are a Marshman. We shall erect a monument to you!"

"Hurrah!" shouted the artist. "I am one of you. I am a Marshman. Quick, quick, put up a monument to me!"

And the Marshmen erected a monument in their marsh.



Drawing by Leonid Sergeyev



HEAVENLY MEAL AT THE DEVIL'S MILL

Photographs by Yan Tikhonov

The old windmill standing at the crossroad near the Lithuanian village of Seduva can be seen from a long way off. There are lots of them around. They stand deserted, often without sails, as though Don Quixote had won a battle here. But the mill near Seduva still has it medieval quality; even the sails turn. And there is the log to which horses used to be hitched! Strange-looking figures, the passerby will say of the devils with old-fashioned lamps hanging from them. If he is especially observant, he may notice that the sails of this mill turn even without wind. If he is of an inquisitive turn of mind, he may push open the heavy doors, having prepared himself for elves, sprites, witches or some local variety of spirit. But he will see something quite different. Around the huge millstone on sacks of grain sit people with mugs in their hands. The hostess asks what they would like for dinner. A restaurant with an unusual and charming interior! Old-fashioned furniture, Lithuanian proverbs carved on the high-backed chairs, earthenware crockery, thick stone walls hung with masks of the devils and spirits that inhabit the mill, so folklore says. Part of the interior is original, but much of the decor—the dishes and decorations—was made to order by Lithuanian artists two or three years ago. The decorators have created a fine atmosphere for such delicious Lithuanian dishes as potato sausage and cracklings. They go down especially easy when the mill's jazz combo plays.

It's only the ... traveler who can ...



No neon lights or modernistic trimmings. Everything is in character, from the heavy wooden doors with their antiqued metal hinges to the mugs and cutlery.



These tools and utensils, a century old, give one the feeling that the miller soon stride in and, with an appropriate flourish, set the millstone grinding a



This mask, one of many, testifies to the talent of the artists who did the decor.



No time for the complete dinner with all the trimmings? Have a snack on a sack.

The round table built around the mill axis is the most desirable in this unique restaurant. To be seated here, you have to show up much before the crowd starts coming.



The mill's jazz combo will play anything you request, from an old, rarely heard Lithuanian folk song to a recently imported Dizzy Gillespie number.



Medieval roofs. "Tallinn Silhouettes," a photo story on the Estonian capital will be appearing in an early issue.

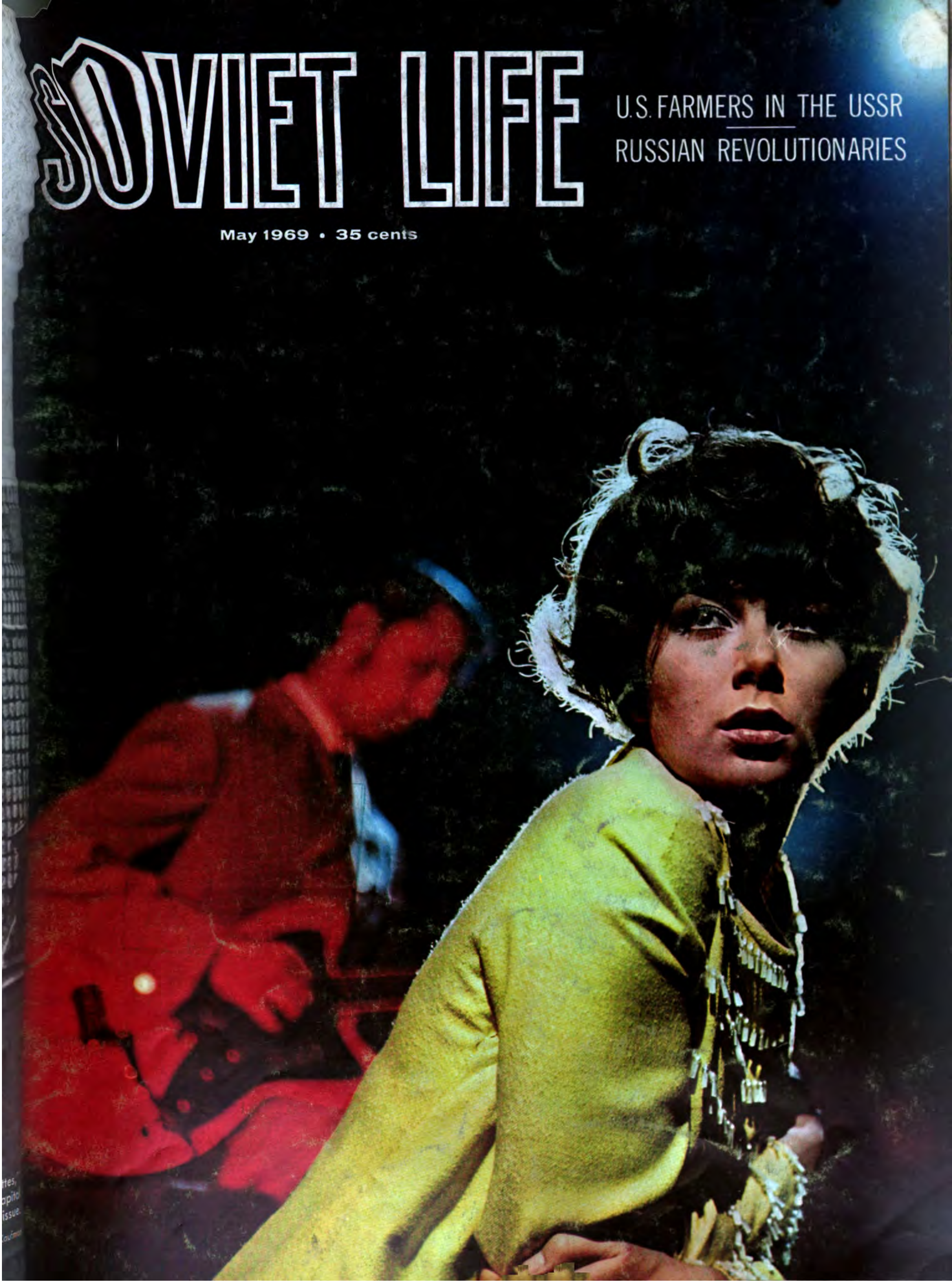
Photograph by Fred Grinberg and Boris Kaufman

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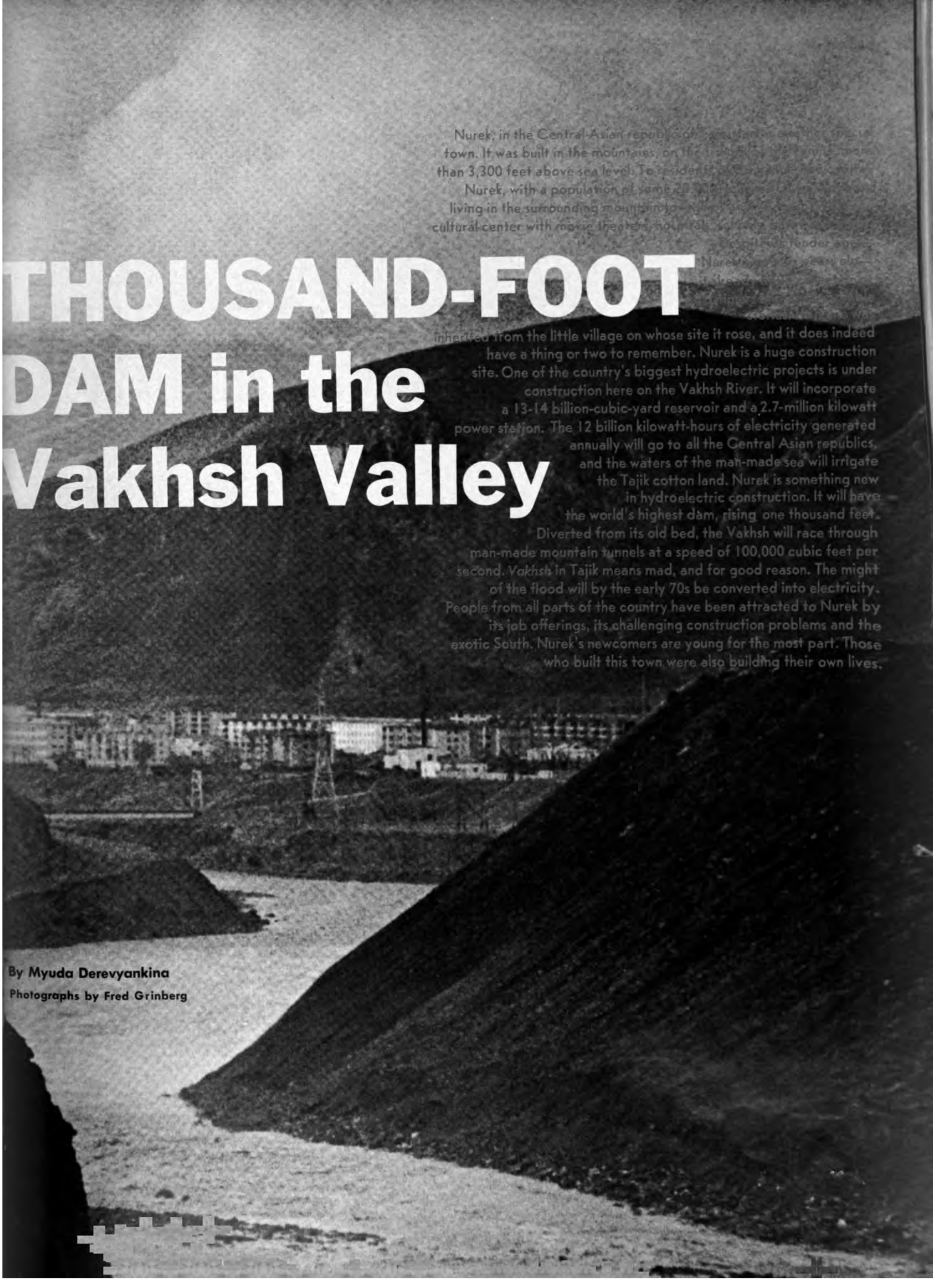
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THOUSAND-FOOT DAM in the Vakhsh Valley

Nurek, in the Central Asian republic of [illegible] town. It was built in the mountains, on the [illegible] than 3,300 feet above sea level. To residents of Nurek, with a population of some 20,000 living in the surrounding mountains, [illegible] cultural center with movie theaters, hospitals, [illegible] inherited from the little village on whose site it rose, and it does indeed have a thing or two to remember. Nurek is a huge construction site. One of the country's biggest hydroelectric projects is under construction here on the Vakhsh River. It will incorporate a 13-14 billion-cubic-yard reservoir and a 2.7-million kilowatt power station. The 12 billion kilowatt-hours of electricity generated annually will go to all the Central Asian republics, and the waters of the man-made sea will irrigate the Tajik cotton land. Nurek is something new in hydroelectric construction. It will have the world's highest dam, rising one thousand feet. Diverted from its old bed, the Vakhsh will race through man-made mountain tunnels at a speed of 100,000 cubic feet per second. *Vakhsh* in Tajik means mad, and for good reason. The might of the flood will by the early 70s be converted into electricity. People from all parts of the country have been attracted to Nurek by its job offerings, its challenging construction problems and the exotic South. Nurek's newcomers are young for the most part. Those who built this town were also building their own lives.

By **Myuda Derevyankina**

Photographs by Fred Grinberg

Blastman is the most respected profession on the project, and probably the most dangerous. Vasili Bakhtin (second from left), superintendent of drilling and blasting, is a former sapper.



Tabar Kurbanov, a blastmen's team leader, was born here in the village of Tutkaul, which will soon disappear under the future Nurek Sea.



Spring-clad mountains and blooming almond trees—or mountains hard as granite: Those attracted by the Nurek project's challenge were drawn to become the town's old-timers.



Head of the blastmen's section Vitali Krivonogov (on left) is a young engineer. He came to the project in Nurek six years ago straight from the institute in Tula, in the center of Russia. Soon he grew to respect these "live" mountains. "It was Nurek," he says, "that made engineers of us."

The Vakhsh flowed along this chann millions of years. Now the rive been diverted and the foundation be laid here for a thousand-foot and a new hydroelectric power sta



Tabar's Noisy Life

Tabar Kurbanov was born in Tutkaul 35 years ago. Tutkaul was a quiet *kishlak* (village), its little adobe huts sticking to the slope of a mountain. Water for the gardens was carried in jugs from the Vakhsh, which the old men dubbed the "vicious river" —it carried off their soil and was bottomless. The river raced by, but life in the *kishlak* flowed sluggishly. Tabar tended sheep in the mountains, worked in the garden and in the fields, and after seven grades of schooling took off with a prospecting expedition. Then he was called up and served in the army engineers.

When he got back home he hardly recognized his native parts: A huge construction project was under way in Nurek, a village neighboring on Tutkaul. Life had altered, accelerated the local sluggish pace, even added new, sharp-edged words to the slow-flowing Tajik language—adit, cutting, concrete, explosion.

Explosions became Tabar's specialty. He learned the trade from Vasili Bakhtin, a skilled foreman, and at courses in the extramural technical secondary school. Then he trained others, fellow villagers who liked this noisy work. Tabar was reputed to be a sober-minded and sensible man. He had seen much and knew a great deal, and soon not only villagers from Tutkaul but from distant *kishlaks* sought his advice. The team Tabar led was made up of men of various nationalities and he was able to talk to them in their own language—Tajik, Uzbek or Russian. And so no one in Nurek was surprised when he was elected deputy to the city Soviet and then to the republic's Supreme Soviet.

Tabar is still on the project; his team blasts shafts, roads and tunnels through the mountains. His work with people and the knowledge he has acquired has enlarged his world. First it was made up of Tutkaul with its 200 inhabitants, then of Nurek with its population of 20,000; now it has expanded to embrace his whole republic—Tajikistan.

Tabar likes to tell newcomers about his *kishlak,* that he was born on the bottom of the future sea.

"My *kishlak* is called Tutkaul, which means mulberry. It has been hanging from these mountains for many hundreds of years. During the last 200 our *kishlak* has been so quiet that you could hear the silkworms nibbling the leaves of the mulberry trees after which it was named. Now Tutkaul will be flooded by the new sea. We have caught up with the times. We now live in a new place called Nurek. In Tajik it means hell. But I was speaking to some old men recently and they thought light or fire would be a better translation."

Honeymoon in "Hell"

Perhaps it was because of the 122-degree F. summer heat or the gloomy mountains surrounding it that the little *kishlak,* crammed into a crevice in the cliffs, was given this inauspicious name: *Nurek*—hell.

"We were traveling to this site over a wonderful road," engineer Vitali Krivonogov recounted. "Spring-clad mountains, a bright blue sky and blooming almond trees.

"And like every road to hell this one was also paved with good intentions. Overflowing with fresh institute wisdom, we young engineers were planning to organize things here strictly according to the last word in science, and to go on studying evenings.

"There were ten of us, mining engineers, graduates of the same institute. We're from Tula, the very center of Russia. Five of us had just married and were going to spend our honeymoon in Nurek.

"We climbed down to the Vakhsh, and there was Nurek: a little *kishlak,* strange-looking adobe huts, narrow dusty streets, and every free spot packed with machinery—full of tower cranes, dump trucks, bulldozers. We commenced working right off, the very first day. There weren't enough engineers, and our careers progressed at a frightening pace. We all became section foremen, then section chiefs and finally chief engineers. There was a shortage of everything: manpower, experience, machinery, time. We said good-by, of course, to our dreams of studying evenings.

"We felt like soldiers and officers of an army continuously advancing. Every day new engineering problems. Everything was unusual at this unusual construction site: tunnels in the mountains, rivers without banks (you couldn't really call these cliffs banks), and even the dam was without concrete. The Nurek power station is being built on unstable soil—earthquakes of magnitudes up to 6-7 are frequent. A concrete dam might crack in an earthquake, which is why the foundation of our dam will be made of heavy clay reinforced with rock and gravel. Vibrations of the earth will only strengthen it. Another problem is the mountains. Nowhere else do you find such mountains—now they are hard as granite, now they are quicksand, now they are creeping clay. No wonder geologists call them 'live' mountains.

"We also came to feel they were alive. Not because of their changing structure, but because we learned to understand their beauty. Hydraulic engineers, despite their nomad way of life, have certain pleasurable pastimes built in—where there is a river, there is always fishing and swimming. But not here. The Vakhsh is no place to swim—it will sweep you away in a second, and its temperature is 50 degrees F. But there are the mountains. We learned to negotiate the most dangerous paths, hunting wild boar and grouse and simply enjoying the unique landscape.

"Our wives also took a liking to the mountains. They came here for what they thought was a honeymoon, but they have no desire to leave. Some of them are also engineers, graduates of our institute. When I tried to talk my wife into leaving the design bureau, she staged the first domestic row in our married life.

"I was a drilling and explosion section chief, all the time up there in the mountains. We were cutting roads and tunnels for transport and outlet tunnels for the Vakhsh, while down below, in the ravine, a town was emerging. It's now the same age as my six-year-old son Mishka. And we are the town's old-timers, although by habit they still say we're from Tula. It was Nurek that made real engineers of us. We have almost forgotten those trying first days, though we have our setbacks even now. But you know how fast the wounds of victors heal."

That Cunning Abdullo

Abdullo Sayidov was considered a very cunning man in his *kishlak*. True, his cunning was unselfish and showed itself only in harmless practical jokes. The jokes were referred to afterward with a smile—if the person mentioning them was, of course, not one of the victims: not one of those who had run to the "magic" spring for a drink that made one's whiskers grow faster, or chased to the post office for a telegram from a long-deceased great-grandmother. For his practical joking Abdullo was nicknamed Nasreddin after a notorious wit from Central Asian folklore. Abdullo, though a poor man, lived lightheartedly like many a joker and philosopher. But he was bitten by one of his own jokes, he says.

"Khoja Nasreddin stories have been circulating in Central Asia for centuries," Abdullo explained, "including the one about the marketplace. Planning a little 'cleanup' of the big market once, and counting on the gullibility and greed of the merchants, Nasreddin came running into the market square shouting, 'O, Faithful Ones, they're handing out free pilau at the mosque!' When the marketplace emptied, Nasreddin gave the stalls a once-over, and, instead of sampling the goods left unguarded by the merchants, was himself overcome by doubt—what if they were really dishing out free pilau? And ran off in the wake of his gullible fellow men.

"I reminded you of this old tale because something very much like it happened to me," Abdullo continued. "When construction began in Nurek I started telling the lads of our *kishlak* that a school had opened in Nurek where you could learn any trade —driver, excavator operator, welder—and all this while you were asleep. You sleep a month and wake up a first-class specialist! Any loafer would be tempted by such a prospect. The lads decided to go and see. And I went along with them too—maybe they were really 'handing out free pilau'?"

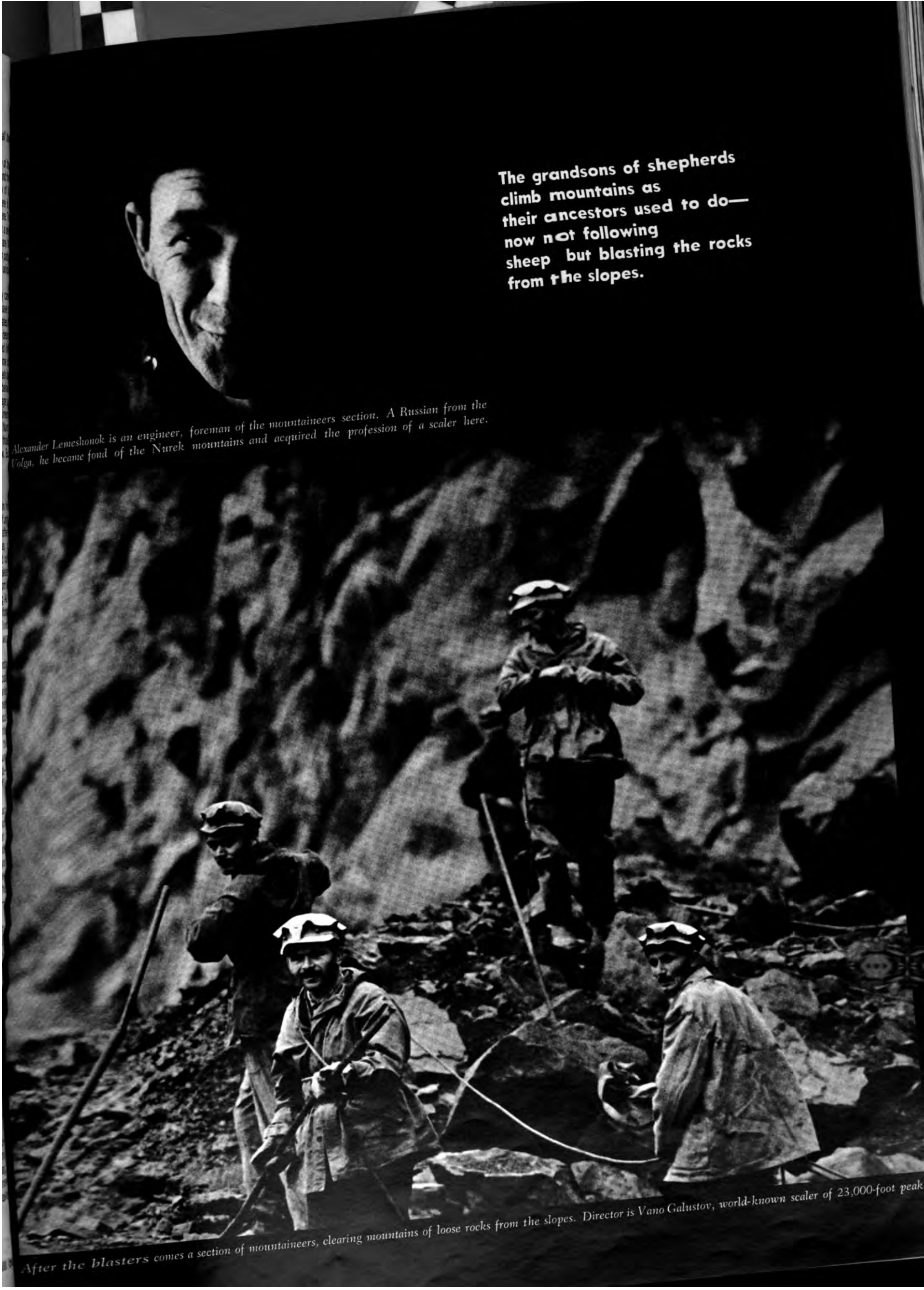
Trades were being taught in Nurek, and free of charge, too. The project needed skilled labor and vocational schools went up with the first houses. Abdullo had only an elementary education, not enough to qualify for vocational school. The complex machinery attracted him but scared him off at the same time. He did not want to leave the project, so he took a job as watchman and cleaner at the local garage. The garage also serviced two excavators, and the operator of one turned out to be an enthusiastic hunter. Abdullo knew the good hunting spots for miles around. He showed them to the excavator operator, who taught him how to run the big machine. In a few months Abdullo was assistant operator. He studied long and stubbornly (alas, not in his sleep!), got through secondary evening school, and qualified as a full-fledged excavator operator. Now he is enrolled at an evening technical school which he will graduate as a mining technician.

It is seven years since he came to the project. In Nurek, Abdullo Sayidov enjoys everybody's respect, but the nickname Nasreddin has stuck. His old *kishlak* friends will sometimes say: "Hey, Abdullo, haven't you heard? They're dishing out free pilau at the University in Dushanbe: Sleep a month—and wake up a professor. Don't you want to try it?"

"Why not?" responds Abdullo blandly.

Vakhsh Valley Dreamers

Half the electricity generated by the Nurek station will be consumed in the Vakhsh Valley itself.



The grandsons of shepherds climb mountains as their ancestors used to do— now not following sheep but blasting the rocks from the slopes.

Alexander Lemeshonok is an engineer, foreman of the mountaineers section. A Russian from the Volga, he became fond of the Nurek mountains and acquired the profession of a scaler here.

After the blasters comes a section of mountaineers, clearing mountains of loose rocks from the slopes. Director is Vano Galustov, world-known scaler of 23,000-foot peak



Nurek, youngest city in Tajikistan, is the site for a 2.7-million-kilowatt hydropower station and man-made sea being constructed on the Vakhsh River. The sea will irrigate a new Tajik crop: fine-staple Egyptian cotton.

Bursting from its tunnels, the Vakhsh cuts through the cliffs of the Kara-Tau mountain range and descends southward in a long curve across a level region.

On the curve's left bank are five flat terraces framed by small hillocks. This is the Vakhsh Valley, one of the warmest spots in the USSR. The average summer temperature is 86 degrees F., not a drop of rain nor a cloud in the bright blue sky. Winter, spring and fall, all together, are hardly three months long. Valuable fine-staple cotton, not cultivated in Tajikistan before the 30s, grows well in the valley. This is how it arrived.

Some 40 years ago the Central Asian Textile Workers Union received a letter:

Dear Comrades:

Though many cotton-growing specialists are unfavorably disposed to our experimental effort to grow Egyptian cotton in Central Asia, we have found a suitable spot in the Vakhsh Valley. We carefully studied and checked all the conditions necessary for fine-staple cotton to mature, and have absolutely no doubt that southern Tajikistan's 200 sunny days will do the job.

We have good imaginations, and we already envisage large-scale cotton plantations in the Vakhsh Valley. We see tens of thousands of acres covered with the snow-white flowers of Egyptian cotton and the Vakhsh reversed, irrigating the once barren plateau.

Give us your support, Comrades! Help us get some Egyptian cotton seeds for our first experiment.

Yours,

Artyomov, Antonov, Shiyan.

The Textile Workers Union had only 27 seeds of this fine-staple cotton to send the young scientists. These first seeds were planted in the Vakhsh Valley, in the *kishlak* of Khalkoyar, on a little plot tilled by the selectionists themselves: six yards by six. All the 27 seeds sprouted, but 10 plants died while flowering, another seven were eaten by a donkey that had wandered onto the experimental plot, and only 10 plants, surrounded by a high clay fence, yielded bolls with lint and seeds. Now they had a lot of seeds. The next year—even more. And in 1930 the Vakhsh State Farm planted 7,500 acres with these seeds. Egyptian cotton began to be grown in Tajikistan.

But the Vakhsh Valley dreamers had only taken the first steps. They still had a long road to walk on this arid soil to reach that wondrous land they had written about in their letter. Dozens of problems slowed them down. The problem of security: The valley adjoined an almost unguarded frontier across which Basmachi brigands (armed bandits who tried to overthrow Soviet power in Central Asia) raided the villages. The population problem: After repeated Basmachi raids the valley became very sparsely populated. The soil problem: salt-ridden lands. The health problem: Every second resident suffered from malaria. The transport problem: no roads in the desert and mountains. And, finally, the last, or to be more exact, the first, the big one: the problem of water.

A deep-flowing river crossed the valley but the soil was thirst-scorched.

Construction of an irrigation system began in 1931. Its total length was to be 8,000 miles. Although the country was moving heaven and earth to industrialize itself, machinery was in short supply. Most of the excavation therefore had to be done with heavy hoes, the age-old tool of the Central Asian peasant.

A considerable part of the equipment was purchased abroad, and consulting engineers from Britain, the USA and Germany came to the site where it was assembled. They had different feelings about the socialist country, but even those who were well disposed had no faith in the grandiose plan. American engineer Ludwell Gordon, for example, credited the builders with imagination, but that was all. He had seen gold prospectors in California, knew inventors of the primus stove who dreamed of becoming Edisons, talked to H. G. Wells, the British writer, about his science fiction. What was being conceived on the Vakhsh needed more imagination than any of them, too much imagination to be possible, Gordon concluded.

Construction went ahead under the most trying conditions. Hundreds of loaded camel caravans moved across the mountains from Dushanbe. Dust-enveloped trucks wound their way through mountain passes, and on reaching the valley floundered in boggy soil and sand. Thousands of hoe-armed peasants came down from the mountains to dig canals. A large encampment of builders sprang up near the *kishlak* of Kurgan-Tyube. The Tajiks in those days did not have engineers and technicians of their own; they came from other republics—Russia, the Ukraine, Georgia, Lithuania. Engineer Vagrashek Karamov from Armenia was one of the most popular men on the site. But gradually local Tajik engineers began to crop up. Here were trained those who 20 years later built other power plants on the Vakhsh, even some who came to work in Nurek.

In 1934, three years after construction began, the canal was dug and the Vakhsh Valley got its long-awaited water.

Families and whole *kishlaks* moved down from the mountains into the valley. The population grew rapidly. There were 11,000 people in 1926, 100,000 in 1940, now more than 300,000.

Today's state and collective farm cotton plantations in the valley are well to do—the farmers here boast the highest income in the republic. But every acre of plowed land yielding cotton, lemons, grapes is precious. That is why more and more water is required every year, why the irrigation network has to keep expanding.

Abdurazik Toshmatov, chairman of the Lenin Collective Farm, said: "We are planning for tomorrow. Yesterday we devoted ourselves to vital matters: providing the *dekhans* (Central Asian peasants) with work, clothing, food and homes to live in. They were poverty stricken and illiterate. When we organized our collective farm in 1930 only two of the people could read. The richest person among us was old Khaidar who had three sheep and two blankets. A collective farmer's income today is 400-500 rubles a month (one ruble equals $1.10), plus a plot of his personally owned orchard and livestock. His children go to school. I don't think we have any illiterates to speak of today. But people who have the necessities develop fresh needs. They want their children to go to college; they set for themselves higher living and cultural standards.

"Our collective farm publishes a newspaper of its own in the Tajik language. Our club has an amateur theater group, and we often invite actors from the city. . . ."



Like most mountain roads, those in Nurek run either up or down. Till recently these slopes were crossed only by wild boar paths.

Chairman Toshmatov was too busy to give us any more details about cultural activity in the Tajik countryside today. When we were leaving,he suggested we drop in on Olimjon Khakimov, a teacher at a local school. What he told us appears on the next page.



Olimjon Khakimov teaches high school physics in the kishlak *of Surkhob in Tajikistan, one of the Central Asian republics. "A teacher," he says, "is expected to know everything there is to know and a little more besides."*

TEACHING IN TAJIK

Not Only the

OLIMJON KHAKIMOV, a physics teacher at the high school of the Surkhob *kishlak* (village), was answering the ten questions in a questionnaire circulated among the teachers of several Tajik schools.

"What must a teacher know?"

"A teacher must know everything there is to know and a little more besides."

Here are some of his other answers:

"What is your conception of the ideal teacher?"

"I still remember what kind of teacher I wanted to have when I was 15. And so I try to approximate the ideal I created in my childhood. The teacher I pictured knew everything, could do everything and was my good friend in addition."

"What is your conception of the ideal student?"

"The ideal student is not the one who dutifully writes down everything the teacher says, but the one who keeps asking questions."

When Khakimov stands in front of the class, he is showered with questions.

For instance, here is an experiment to illustrate a certain physical law. The children watch the apparatus with curiosity. They keep asking him their endless "whys" and "what fors," but Khakimov is in no hurry to answer. He wants the class to help him.

"What do you think yourself? Is that so? No, you're wrong. And what do you say? Well, you are very near the truth. That's right. You are a smart one!"

And a law discovered in the nineteenth century is rediscovered again. A whole class, 27 children, become the colleagues of the great physicists of the past.

Khakimov walks around his physics laboratory with the light swift gait of a mountaineer. He was born right here in this Vakhsh Valley *kishlak,* but his forefathers lived in Karategin, which is mountain country. Olimjon's father Khakim lived so high in the mountains that the morning clouds would sit on the flat roof of his house.

To fetch water one had to go down the steep mountain paths, while to reach the tiny vegetable gardens and orchards one had to climb higher still. For half a year the *kishlak* was cut off from the outside world when thick snow covered the mountain passes. In 1929, when the alpine villagers were offered the chance to move to the valleys and were even given money to build new houses and begin farming, some families decided to have a try. Khakim's family was among them. The Surkhob *kishlak* in the Vakhsh Valley became their native village. There was never any winter in the valley, and there was plenty of land. But water was in short supply. Several peasants joined their bits of land, dug common canals and formed a small collective farm. On the 250 acres they sowed cotton. The land was cultivated manually, and the canals were dug with hoes. The valley had its difficulties too—the soil became salinated; hot winds from the desert drained the land. But the big drawback was the lack of water. Water was priceless there. It was in the valley that Khakim first heard the saying, "A son is more precious than money, and water is even more precious than a son."

When news arrived at the *kishlak* that a big canal was to be built nearby, Khakim joined the builders. He was illiterate, but while working on the canal he learned how to read and write, how to operate the machines, and his horizon broadened. He became a driver and made the acquaintance of Vagrashek Karamov, an engineer. Karamov was almost a legend in Tajikistan. He laid the first railway lines, built canals and brought the first railway engine there.

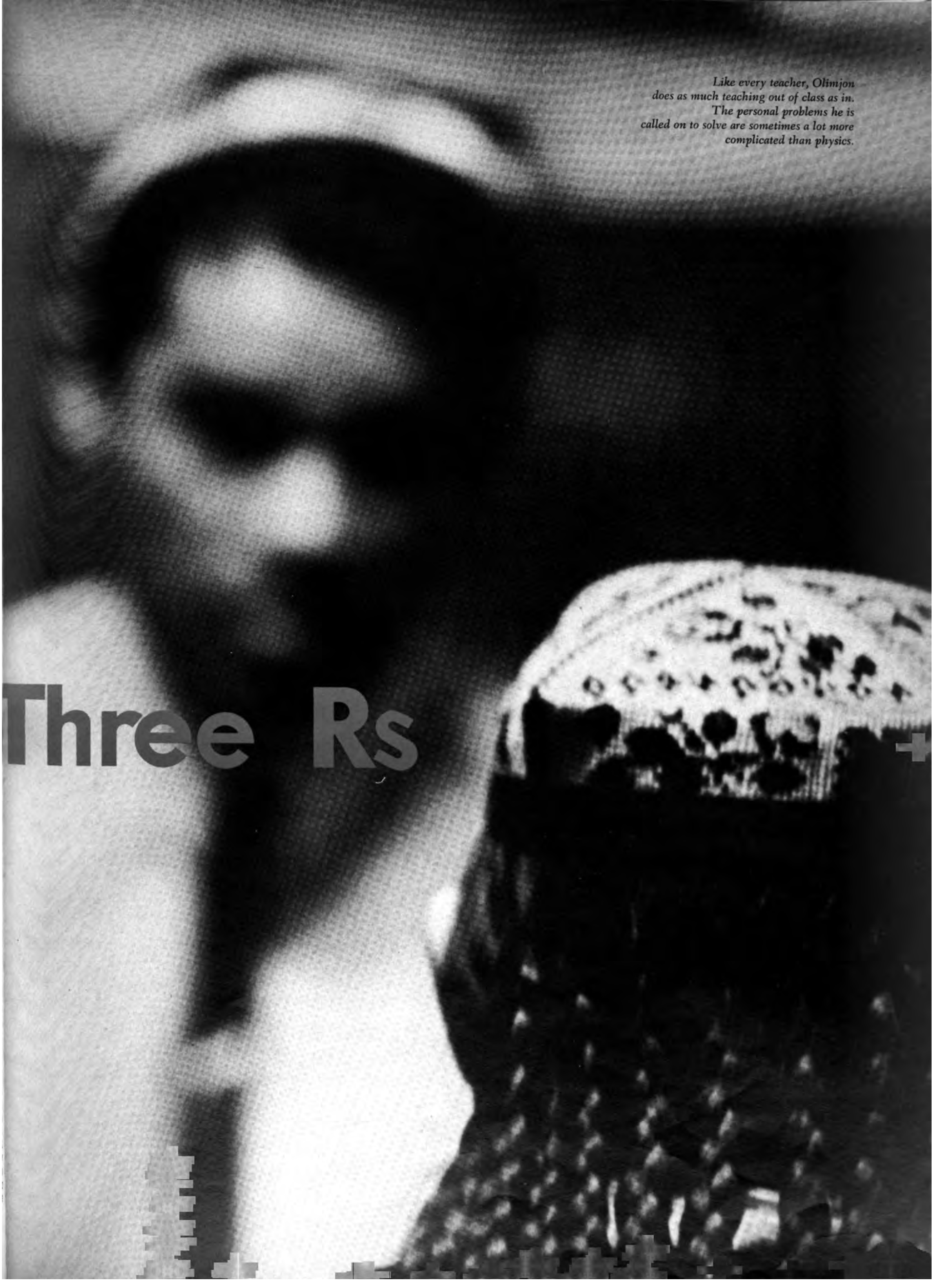
Once Khakim asked Karamov: "Tell me, engineer, why do you spend so much energy and time building all these canals? You are old already and you won't be here to see the water running through them." "You know, Khakim," replied Karamov, "tomorrow is as important for man as today."

Khakim was wrong. Karamov was there to see water flowing through the canal. And by the time Khakim's first-born Olimjon arrived, most people in the Vakhsh Valley had forgotten that old bitter saying about water being more precious than a son.

"When I finished school (it was this very school)," said Olimjon, "my father wanted me to become an engineer and build canals the same as Karamov. But I became a teacher. However, I did remember what the engineer had said about the future being as important as the present; my father had passed that along to me. Life used to move very slowly in the East, but our present is no longer like the past.

"Our problem now is spiritual development, educating children emotionally as well as intellectually. We have learned how to give children an elementary foundation of scientific knowledge. It is far more difficult, however, to teach them to think and act boldly and independently. I teach physics and mathematics and deal mostly with formulas. But there is very little in the children's merely memorizing them. Formulas can be found in any reference book. If we could get children to see the great scientific thoughts that stand behind the formulas, if we could get them to experience the same joy of discovery the scientists did, that would be something. Once they experience the joy of creative work, children begin to educate themselves. They grow up not only educated people, but thinking and active citizens as well.

"Here in the East submission to fate and to the will of Allah, a fatalistic attitude toward one's self and life, have been accepted for ages. It is therefore more difficult to be a teacher in Central Asia than in Central Russia. We have different traditions here, other customs, habits and family relations. For example, children in the East are taught to lend a more attentive ear to what their fathers say to them than children in Russian cities. That, I think, is not such a bad thing. Children grow up modest and obedient, they respect their elders. But then, on the other hand, are grownups always right? Sometimes they tend to cramp young people, paralyze them. What would you say to that? You don't know? Well, neither do I. There are no simple answers. There are as many answers as there are children."



Like every teacher, Olimjon does as much teaching out of class as in. The personal problems he is called on to solve are sometimes a lot more complicated than physics.

Three Rs +



There was a time, not too long ago, when a Tajik woman never left her house unveiled nor without the man's permission. Illiteracy was almost universal for men, let alone the women. Today girls go to school as a matter of course and the long horsehair veil they once wore is a rarity, even in remote villages. With a population of 2.7 million, half a million are schoolchildren.











In the Tajik village the teacher is a respected figure.
When addressing him pupils say "Muallim"
(mentor, leader), and adults— "Ustod" (erudite man).



"All my explanations are worthless if the class does not work along with me. When we study a new law, my job as teacher is to guide the children so that they evolve that law themselves. I want them to rediscover the laws of physics with me," says Olimjon.

Tajik wrestling: Olimjon picks himself a tough one, the physical training teacher.





Rano, Olimjon's daughter, sleeps in the traditional cradle, but she is growing up in a socialist Tajikistan. The birth of a daughter, formerly hidden from neighbors, is now a holiday.



Olimjon and his wife Nisso in the garden behind their house. These mulberry trees, symbol of well-being and happiness, grow near every Tajik home.



Transfiguration
Sixteenth century.

Paintings of Ancient Karelia

BY SAVELI YAMSHCHIKOV
ART CRITIC

PHOTOGRAPHS BY STANISLAV ZEMNOKH



Descent to Hell
Sixteenth century. Detail.

AS SOON AS SPRING takes over, museum workers from Petrozavodsk, the capital of the Karelian Autonomous Republic, which is in the northern part of European Russia, set off on expeditions to locate ancient national paintings. Experts from Moscow and Leningrad go along. Their travels take them to towns and villages famous for their architectural relics. In recent years such expeditions have brought back to the capital of the republic important and interesting finds.

But until a while ago it looked as if many were beyond restoration, irretrievably lost.

In the dark and damp churches, for which these paintings were made, the layers of varnish soon lost their transparency. In 50 or 60 years the varnish became completely opaque, concealing the original painting.

The restoration artists had to work with the greatest of care, using special solvents developed by chemical laboratories that washed away the film of dark varnish and left the painting exposed and intact.

The processing of each Karelian find brought something new and unexpected to light, filling in, one by one, the links in the complex chain of the history of this typically Northern art. Specialists restored enough icons to prove that there were major art centers in ancient Karelia.

An especially interesting local school of painting flourished at the turn of the eighteenth century as a result of church construction. Scores of little chapels and complex architectural ensembles, such as those in Kizhi and the cathedrals of Kem and Kondopoga, were embellished with a multitude of icons. The principal natural resource of Karelia has always been its forests, and most of its churches were made of wood. This is why frescoes were rare and icons so common in the North.

The local artists were born and bred in Karelian villages. It is most unlikely that any of them learned the complicated art of icon painting in metropolitan art studios. They gleaned their knowledge from elder craftsmen and immediately began working on their own. Their teacher and prime source of knowledge was mother nature.

Paintings of Ancient Karelia



Peter and Paul
Fifteenth century. Detail.



The Post of the Czar's Gate
Sixteenth century. Detail.

Zosima and Sabbati in Life
Eighteenth century. Detail.



Characteristic of the art of ancient Karelia is its understatement and lack of superfluous embellishment. It has the severe and majestic qualities of Northern nature. The local artists brought religious themes into the world of everyday life. They transformed the Biblical heroes into the broad-shouldered and sturdy pioneers of the land of forests, lakes and granite cliffs. Especially popular among the Northern artists were illustrations of literary characters. Scenes from the lives of the saints were interpreted freely in terms of the life the artists knew.

"Teaching Grammar"—a detail in an icon found in one of the villages—depicts a village school, its walls made of huge logs broken by narrow, slit-like windows. A tall roughly-hewn door leads to the classroom. Two boys in plain linen shirts are sitting on a rugged bench, listening attentively to the teacher. It was in such a school that the artist, who conveyed so authentically the atmosphere of the village school, might have received his first instruction.

The Karelian masters pictured monastery buildings and houses in their icons. With great precision they reproduced multi-cupola churches with astonishingly fantastic silhouettes and the sturdy log walls of the houses in which the Karelian peasants lived. As a rule, they grouped the structures against a background of the local landscape.

Most curious among the Karelian paintings of the seventeenth and eighteenth centuries is the icon depicting the everyday life of Nikola found in Medvezhyegorsk. One of its marks (a "mark" is a scene from the life of a saint depicted in the margin of the icon) shows a rescue at sea. The survivors of the wreck are in a longboat, like those which can still be seen on the waters of Lake Onega. The expressions of the seamen are all strikingly individual.

The special quality of ancient Karelian painting is its unique combination of color. Metropolitan artists used colors of foreign origin, but the Karelian artists used only homemade colors. Karelian paintings of the seventeenth and eighteenth centuries are quiet. The local artists seldom used vermilion, preferring tinted shades of ochre, red and indigo.

Restorers are still uncovering masterpieces of Northern art. An exhibition of ancient Karelian painting was recently held in Moscow and Leningrad.

TOMORROW'S SCIENTISTS

FROM junior researcher to academician, the residents of Science Town all take a paternal interest in the students of the local physics and mathematics high school. These boys and girls, they believe, represent the future of Siberian science.

Ever since it was opened under the auspices of Novosibirsk University, the school has been selecting its students through Olympiads—competitive tests in mathematics, physics and chemistry which thousands of youngsters take. The Olympiad idea has justified itself, except that city youngsters have been the only winners. Those from the farm areas of the Urals, Siberia and the Pacific seaboard never had a chance for several reasons. The principal and most disturbing reason was the difference in academic standards between urban and rural schools.

Yet there are certainly as many capable children in the villages as there are in the towns. The problem remains, but progress is being made. The Novosibirsk school draws up special sets of mathematics, physics and chemistry problems to help gauge the ability of rural youngsters. It also admits them on the recommendation of rural schools and boards of education. One of the hitches, though, is that the local people are not always able to discern whether a child has a scientific bent. They send their hard-working and well-behaved students rather than their gifted ones.

Last year the Novosibirsk school interviewed 600 youngsters recommended by rural schools. They selected 100 and gave them an advanced program of study. They found very capable students, but none of Olympiad level. In fact, most of them had no idea these Olympiads were held. The advanced program brought them up to the school's standards.

Instructors at the physics and mathematics school have therefore been talent scouting in Novosibirsk Region the past few years. Instructor Akram Zhafiarov went to a district in the northern part of the region. The local teachers had him meet 11 honor students. Not one of them coped with the problems he set for resourcefulness. Zhafiarov looked through seventh-grade student progress records and chose two boys with high marks in tests the other children had failed. Their marks for ordinary classwork, though, were very low. Zhafiarov asked to talk to the boys.

"They won't do," the teachers said. "They are both lazy, not at all the kind of children your school wants."

The boys were helping out on a farm nearby. A motorcycle brought them to town, their faces flushed and dirty. They quickly solved the problems Zhafiarov gave them to test their ingenuity. Both are doing well at the physics and mathematics school. Any of the instructors scouting the rural areas for gifted children can tell similar stories.

Discovering talent, though, is not the whole answer. Application is an imperative. Plenty of capable youngsters have been asked to leave the school because they did not know how to work or did not want to work. Vladimir O. was there a year and a half. Although he has a good head on his shoulders, he was unwilling to put in the hard work required. Science has no room for idlers. Vladimir had been spoiled by the school he previously attended, where he did not have to make much effort to get good marks. About 20 per cent of those admitted to the physics and mathematics school flunk out. They are either capable children who are lazy or industrious children who are not sufficiently capable. Those who fail to meet the school's high standards are transferred to a regular 10-year school.

Any student with a superiority complex is quickly cut down to size. I glanced through a class register. It had as many failing and average marks as any school register, perhaps more. It takes hard work to get an Excellent at Novosibirsk. The school week is only five days, the usual school has a six-day week. The extra day off in the middle of the week is devoted to hiking, sports and gardening. The school year is divided into two semesters instead of the usual four, and there are two examination periods instead of one at the end of the school year. Winter holidays are not at the beginning of January but at the end, running into February, as at colleges and universities. Not too many medals go to honor students at graduation time, only a few more than at the ordinary school.

Girls make up only 18 per cent of the student body. Is it because girls are less capable, or not as good at physics and mathematics? The Novosibirsk instructors believe the trouble lies with the way children are brought up, that ability has nothing to do with it.

"Non-Euclidean Education"

Professor Yuri Rumer is head of a laboratory at the Institute of Nuclear Physics and one of the old-timers in Science Town. He worked with Bohr, Planck and Einstein. Professor Rumer can speak for hours about physics and physicists. His desk, couch and tables are strewn with newspapers and scientific journals in almost all the European languages. But his bookshelves are a model of order, except that books by great physicists stand beside books by great poets.

Like all the eminent scientists in Novosibirsk, Professor Rumer is interested in the training future physicists get at the school and university.

"Why do high school courses of study always go from the old to the new? The new is not always harder than the old. Why does the course always have to begin with mechanics, go on to field theory and thermodynamics, with quantum mechanics and the theory of relativity coming much later? Why that order? Like Mendeleyev, who systematized the chemical elements and predicted the existence of new elements, indicating what their properties would be, in 1961 Gell-Mann and Ne'eman systematized the elementary particles in cosmic rays and discovered the possibility of predicting and describing a number of the properties of still undiscovered particles. Fundamental to this systematization are the laws of the mathematical theory of groups, a discipline that was developed before the discovery of quantum mechanics, developing as an abstract mathematical discipline that had little to do with theoretical physics. But in the past few years the mathematical apparatus of the theory of groups has proven no less important than the apparatus of differential and integral calculus in the structure of classical mechanics. Is this new mathematical apparatus of the theory of groups more difficult and less easily understood than differential and integral calculus or school trigonometry? In general, is chronological exposition the best for teaching? Perhaps it is time to consider 'non-Euclidean education'?"

Professor Rumer poses important questions of principle. It is true that courses of study need substantial revision. But how? Professor Rumer could draw up a physics course that would be new, interesting and original, and it would be the best possible course for training certain kinds of physicists. But other physicists, mathematicians and chemists also have ideas about how their subjects should be taught, and they are as interesting and original as the men themselves. Each scientist would bring a new, fresh approach to the course that would reflect his love of his own department, the one he considers the main branch of mathematics, physics or chemistry. This is the source of the joy the student experiences when he reaches up to the pinnacles of science. But it is also the source of the troubles that befall him when, taking a college entrance examination, he is stumped by a simple question that gives the graduate of an ordinary high school no trouble at all.

Schoolboy to College Student to Scientist

The new experimental programs at the physics and mathematics school are in addition to the usual high school courses. It took some effort to get this principle accepted. At first "university" courses were introduced at the expense of elementary sections of the program. This had some curious effects. The instructors laugh today as they tell the story of one school graduate who was taking the entrance examinations for Novosibirsk University. He was asked a question on the design of the steam engine, something any high school student knows. This graduate did not know the answer, but he had brains and time to use them. Applying his knowledge of the laws of thermodynamics, Carnot's principle in particular, he invented a steam engine on the spot.

The physics and mathematics school has an academic council chaired by Dmitri Shirkov, a corresponding member of the USSR Academy of Sciences. It includes Academician Vladislav Voyevodsky, corresponding members of the academy Spartak Belyayev, Abel Aganbegyan, Mikhail Kargapolov, Alexei Lyapunov and Nikolai Yanenko, and men and women with the degree of Master of Science or Doctor of Science. The academic council guides the school's instructional work, recommends instructors and establishes teaching standards. The school's principal and vice chairman of the council is Yevgeni Bichenkov, a Master of Science and a senior scientific worker on the staff of the Institute of Hydrodynamics. Its secretary is Samuel Literat, head of the school's department of instruction. The opinions of the vice chairman and secretary carry the greatest weight at meetings of the academic council.

Improved educational methods for schools of this kind have been developed in the past few years.

Where do the students go after graduation? They become undergraduates at Novosibirsk University and then research workers at the Siberian Branch of the USSR Academy of Sciences or instructors at Siberian colleges and universities. These goals dictate the research studies in which the youngsters are involved and the new experimental study programs.

The eighth grade, with which this school begins, is preparatory. For the first year and a half all students follow the same program. Extracurricular clubs guided by scientific workers from academy research institutes and by college students play a major role in this period. A student can join any club he likes. He can leave one and join another, then leave the second and join a third. Work on a club project is obligatory. When the

By Boris Yarantsev

student reaches the tenth grade, he is expected to know what field he wants to specialize in. Ten hours of school work a week are devoted to this field. The student now spends a full day each week working in a laboratory at a Science Town research institute. For all practical purposes he becomes a laboratory assistant, observing the various stages of a scientific experiment by participating. Course credit tests are arranged by members of the laboratory staff. The student learns how the laboratory selects its problems for study and the research methods of the scientist who heads the laboratory. This is how his interest in science is developed.

Scientists Train Schoolboys

"You overcome difficulties only if they get in your way," says Principal Yevgeni Bichenkov. "You should not try to teach a person with a gift for mathematics to like chemistry, or vice versa. We want our students to ask themselves, 'What do I like best and what am I best at?' "

Seminars do the most to develop independent work habits. At seminars the students are faced with problems that call for prolonged and intensive work. Ordinary high schools usually require a student to concentrate that intensively for a maximum of one hour. The students are also assigned topics not touched on in the lectures or in classwork but which are related to topics they have covered. Such an assignment, which requires a creative approach, usually takes about a month, and the student gets course credit for it. University-type lectures, seminars and examinations, close ties with the academy's research institutes and scientists, and extended experimental study programs are all part of the teaching process.

Scientists have direct ties with the school. Corresponding members of the academy Alexei Lyapunov and Nikolai Yanenko lecture on mathematics. Academician Gersh Budker, corresponding member Spartak Belyayev, and Boris Chirikov, Yuri Sokolovsky and Yevgeni Bichenkov, who have master's degrees, lecture on physics. Corresponding member Abel Aganbegyan lectures on the social sciences. Some of the seminars are led by researchers from the academy's Siberian Branch.

The best students work individually with academy scientists. For instance, Georgi Karev, Sergei Treskov and Gennadi Friedman began to work under Professor Yuri Zhuravlyov, who has a doctorate in physico-mathematics and is a Lenin Prize winner. By graduation time the boys had written an article for a scientific journal. Today they are continuing to work under Professor Zhuravlyov as undergraduates at Novosibirsk University.

Professor Yuri Rumer has also taken some of the school's students under his wing. He teaches them, on the high school level, the modern theory of groups and its application in systematizing atoms (Mendeleyev's periodic table) and fundamental particles.

These are what we might call elements of "non-Euclidean education."

Which Field to Choose

"We put in at least 10 hours a day in class and on homework," says Misha Kishinevsky, who comes from Ussurisk, in the Far Eastern part of the Soviet Union.

"But I still prefer it to an ordinary high school," adds Zhenya Derevtsov, whose parents live in Science Town. "It's too easy there. You don't have to spend much time on homework, and then you just waste the rest of the day. You never really get down to studying something in earnest."

"The subjects are taught in depth, and you can't learn them properly unless you do extra work," explains Sasha Mordvinov, who comes from the town of Omsk in Western Siberia.

"We ourselves have to choose the specialized literature we read," says Victor Ostanin, from Frunze, in Central Asia. "It's hard to tell when you've done enough reading for any particular assignment."

These are teenagers who will soon graduate from the physics and mathematics school. They are more purposeful and serious than the general run of student and already know how to work independently.

When I asked Zhenya Derevtsov what his chosen field was going to be, he looked somewhat shamefacedly at his classmates. "I don't know exactly," he said. "I'll go to Novosibirsk University, of course, the Mechanics and Mathematics Department, but I don't know just which field in mathematics."

Zhenya is embarrassed because final examinations are drawing near, and he still cannot make up his mind. His friends have their futures all planned. Victor Ostanin is going in for radioelectronics, Sasha Mordvinov for mathematical logic, Valeri Aksyonov for functional analysis, and Misha Kishinevsky for nuclear physics. But Zhenya still does not know which of the many mathematical disciplines to major in. At ordinary schools the word "math" is definite enough. At this school you have to be more specific.

Must a Physicist Read Tolstoy?

When Science Town was set up more than 10 years ago, one of its founders, an eminent physicist, said: "The sciences are divided into the natural and the 'unnatural.' In Siberia we are going to stick to business."

A clearcut statement and accepted without much question at the time. When Novosibirsk University was established, it had three departments: mechanics and mathematics, physics and chemistry. Only a short time ago a fourth, humanities, was opened.

Not without a trace of pride the school principal told literature instructor Elvira Goryukhina, when she came to teach there three years ago: "You'll find youngsters here who have no use for Leo Tolstoy."

"It will be interesting to meet youngsters who know Tolstoy and don't like him," she said lightly.

During her very first lesson Elvira Goryukhina saw that the youngsters at the physics and mathematics school had a lot to learn about literature and other cultural subjects.

"We'll be meeting for two hours a week," she told the class. "Today I'll let you ask me questions for the first hour, and I'll ask you questions for the second."

An experienced literature teacher, Elvira Goryukhina was prepared for all kinds of questions. There was a long, tense silence. Finally a boy asked: "How many compositions will we have to write during the year?"

That was the only question the class asked.

"What did Maria Bolkonskaya and Nikolai Rostov, in *War and Peace* have in common?" Elvira Goryukhina asked the class.

Silence. Finally a boy who was a mathematical wizard said: "Why do we have to bother about all that? These people didn't even exist."

Was this spiritual impoverishment? Or was it complete dedication to science, leaving no room for anything else?

The problem of the humanities loomed large at the physics and mathematics school.

In Science Town, where the humanities are practically nonexistent, the high school student often meets gifted young researchers who are convinced that you can learn the humanities, on which ordinary schools "waste" so much time, by going to the movies and reading the latest novels. Yet these young men are usually former Muscovites or Leningraders who got a good grounding in the humanities at high school.

This deplorable notion is especially harmful for children from rural areas and small towns who have a poor enough background in the humanities as it is. Fortunately the physics and mathematics school has some excellent teachers of language and literature who are filling in the gaps.

Many of the children take an interest in literature and the arts. Literary magazines are read with pleasure, along with science fiction. Poetry reading evenings are held. The Art Lovers Club is thriving. It has a good library of classical records and fine albums of reproductions, and sets the tone for all the work done at the school in art and music appreciation. The club started History of the Arts readings two years ago and arranges art shows regularly.

The Future of the School

The physics and mathematics school still has its unsolved problems, but it also has significant achievements to its credit. No one knows this better than the faculty of Novosibirsk University, where the majority of the school's graduates matriculate.

I discussed the school's problems with Assistant Professor Yuri Sokolovsky, head of the university's Education Section. He is an excellent popularizer of physics. I sat in on a lecture of his at the school on the theory of oscillation. It made me realize how much we need good science teachers.

Sokolovsky believes that one of the school's weaknesses is that it does not teach the students to do their work in a neat and orderly way, something the ordinary schools teach well. The instructors at the physics and mathematics school rarely bother with that part of the teaching process. Study material is at times poorly organized, a typical falling in experimental teaching.

The physics and mathematics school in Science Town and similar schools in Moscow, Leningrad and Tbilisi now pose the important problem of training teachers. How is the theory of relativity to be taught at these schools? Who can teach it as it should be taught? A knowledge of higher mathematics is supposed to be necessary to grasp the theory of relativity, but scientific theories can be taught in different ways. It is possible to prove the theory of relativity without using differential and integral calculus; it has been done with elementary mathematics.

A theory in a textbook is usually presented in the form stated by its author. It can often be explained in simpler language. People with a gift for simplifying science concepts must be encouraged. As of now, we do not have nearly enough popularization although there are a hundred high schools in the Altai Territory in Southwest Siberia alone where teenagers are studying the theory of relativity.



Boris Lagutin (right) and Yuri Mavryashin.



STAYS ON

BY ANDREI BATASHOV
APN SPORTS COMMENTATOR

WHY THIS CRAZE for boxing?

You see the ropes and the springing figures as if you are looking through a pair of binoculars turned the wrong way. And you think it's all a cinch. The boxers glide around the ring, punch out and seem to dodge the other fighter's fists with ease. You can almost hear the spectators holding their breath.

For me boxing doesn't exist without Boris Lagutin. I saw him for the first time ten years ago in the gym of the Wings of the Soviets Club in Moscow. At the top of the steps leading to the ring sat a grinning, curly-haired lad. By his side stood coaches Mikhail Li and Vladimir Trenin and six-time USSR title holder Boris Stepanov, one of the club's most famous members.

They were chuckling, and Li—his Korean eyes glinting in mock anger—observed that Lagutin had taken too long a summer holiday and didn't deserve any of his *shashlyk*. I learned later that Li's *shashlyk* was for a select few.

For several years afterward, I trained in the same gym with Lagutin. We all tried to copy him and took in his every word. He would wish us luck and looked disgusted if one of us didn't know who Charlie Parker was.

Then suddenly came the day, and very quickly at that, when many light middleweights began to copy Lagutin. And it began to look as if Lagutin was not so much to write home about after all, and that with a little more effort he could be beaten.

Now the ring, however near it seems to you in the audience, is always far away, at least in the figurative sense. You see the bout from a distance, and the commentary is always after the fact. In the years I watched Lagutin box, I saw nothing but the strict pattern he kept to. He was so perfect that I never realized the price he had to pay for his perfection or what a tough and dangerous sport boxing was.

You watch him do his footwork and his opponent follow suit. Only in the case of the latter, the side-stepping is more abrupt and lacks something. But what? After all, both of them are good boxers.

Later, when I learned from bitter experience what a knockout is and felt the icy draft of an opponent's glove, when I saw Lagutin get up after sickening knockdowns and win, a boxing bout no longer looked to me like a show seen through a pair of binoculars turned the wrong way.

Now I knew that Lagutin was also vulnerable, that he also went down and slowly regained consciousness like us ordinary mortals. Take his bout with Ivan Sobolev at the USSR Championship, for example. Lagutin caught a punch. When did he hear the count? When did the roar of the hall and the glow of the lights reach him again? On the fifth or sixth second?

Sobolev stepped up the tempo, but he couldn't get through to Lagutin. Again came the fancy footwork and a series of straight blows to the head and body.

I heard the audience wonder: "Was there any knockdown or did we only imagine it? Or was the referee mistaken?"

Nothing of the sort. The fact is that Lagutin has so much will power that he can overcome everything that can be overcome and even more.

Lagutin was knocked down in the European Championship in Yugoslavia but got up to win in his usual fine, rational, even elegant style. Then he went ahead to take the European title for the first time. Two years later he defended his title in Moscow, capturing the special prize for tactics.

It is hard to follow the movements of a real master. But it's easy to reconstruct a mental picture of Lagutin's punches; they are so rhythmic, so geometrically precise.

Lagutin is sometimes called an "academician," an oblique way of saying that he doesn't have much of a flair for improvisation. In recent years, ever since the talented middleweight Victor Ageyev turned up, spectators and referees have been giving their cheers to an impromptu style.

Lagutin and Ageyev, incidentally, are almost the same height. But in the ring Lagutin seems much taller. He stretches up, boxing from the classic stance, and hops around on his toes. Ageyev prefers the middle distance; he bends and dodges, slipping between the blows as if he had radar to help him.

On the eve of the Tokyo Games Lagutin outpointed Ageyev in a dogged bout and returned with the title from the Japanese capital. But after that the seemingly invincible Lagutin started losing bouts. In 1965 he was defeated by a rather mediocre boxer, Yuri Mavryashin. It was clear to the specialists that if he were in shape, he would never have lost. However, a defeat is a defeat, and Lagutin's popularity began to wane.

Boxing fans made no allowance for the fact that when he returned from Tokyo and completed the Physical Culture Institute course, Lagutin enrolled in the Biology and Soils Department at Moscow University. He was working as hard at science as he does at sports.

In 1966 and 1967 he lost to Stasis Strumskis and twice to Victor Ageyev, and grueling fights these were. Ageyev's wins over Lagutin pushed him into the front rank at once. Last year Ageyev went to the European Championship in Rome and came back with the title for his weight class and a citation as Europe's best boxer. Meanwhile Lagutin, with his battered sports bag, showed up three times a week at the gym to train until the "sweat dripped from his eyes," as Russian boxers say. Many thought this almost indecent. They wondered why he didn't call it quits.

At that time I met Lagutin once again. I dropped into his university classroom just before a genetics lecture. I had a little trouble spotting him. He was bent over, taking notes a mile a minute. During the break, he saw me and came up to say hello. There was a time when we were all a bit in love with him, though every one of us wanted to spar with him. No wonder my tongue stuck to the roof of my mouth, and I couldn't bring myself to ask him when he was quitting.

After a pause he said: "Only now am I beginning to understand what boxing is."

I couldn't believe him. I thought that like many celebrities he simply didn't know how to make a proper exit. But at the same time I was delighted to hear that he was going to stay on.

Last year he proved that he was not just talking. He indeed reached greater heights.

Just before the last USSR Championship I went to see Lagutin train. His arms were lifted in the classic position and seemed to hang at the elbows. His fists closed only on impact. Again I saw his lightning jabs and the familiar, exciting pattern of his footwork.

But now his movements were sharper and more angular. The tempo was faster. And the gliding step which had earned him the nickname "ballerina" was even lighter.

"Don't react!" cried coach Vladimir Trenin, who has been with Lagutin all along.

The sparring partner was boxing like Ageyev, imitating his famous feints.

"Don't react!" came the cry.

Finally came the day of the bout with Ageyev at the semifinals for the USSR Championship. "You couldn't recognize Ageyev. His boxing was blunt. There was none of his usual keen resourcefulness," said Victor Ogurenkov, senior coach of the Soviet national team, after the bout.

Ageyev hadn't lost his skill. It was simply that over these years Lagutin had risen to newer and higher levels. Next, by defeating the gifted Valeri Tregubov, Lagutin regained the USSR title.

Boris Lagutin was the only member of the Soviet boxing team in Mexico City competing in his third set of Olympics. He had won a bronze medal in Rome and a gold medal in Tokyo. In the Mexican capital, he won another gold medal by beating Cuban Rolando Garbey in the final round.

The Cuban mitt-wielder rushed into action without preliminaries. He tried to hammer away at Lagutin's body, but the Tokyo Olympic champion smartly side-stepped the onslaught and caught the Cuban with a right that made the referee stop the bout and count up to eight.

In the second round, as Western news agency reporters later wrote, "Lagutin gave the Cuban a real lesson in classical boxing. His devastating, accurate punches rocked Garbey."

Recovering a bit from this pounding, the Cuban, in the third round, managed to get two powerful punches across, but Lagutin, a clever strategist, gave his opponent no chance to build up. Toward the end of the final round he had the powerful Cuban against the ropes.

You recognize the master in every movement he makes. I, for one, don't think there is a more perfect pattern of fighting than Lagutin's in Soviet boxing.

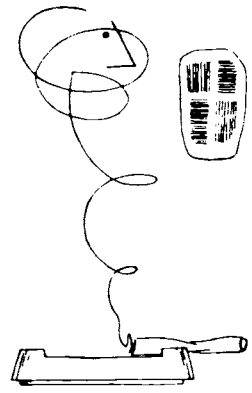
He is romantically minded, in boxing and in life generally. That accounts for his affinity for Don Quixote, which he has had since childhood.

He still isn't married. "Why so?" I asked.

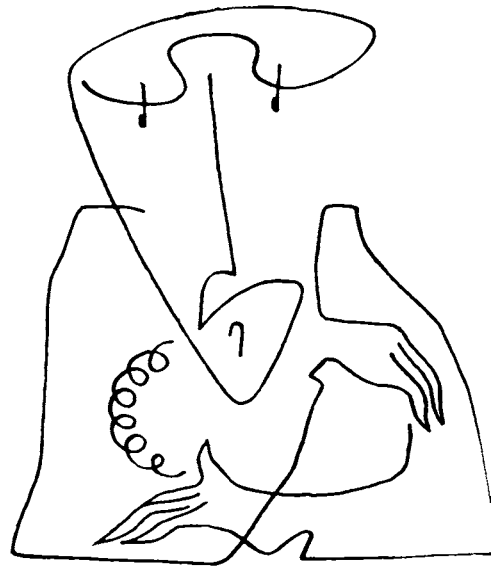
"The responsibility is too great. Because so far I don't think I'm entitled to be a father, yes, a father, because without children a family isn't a family."

When I think of Lagutin, I always see his clean-limbed body and his pose as he listens attentively to you. I don't think he ever once questioned a referee's decision or said it was unfair.

So what is this craze for boxing? And why can't you tear your eyes away from the men inside those white ropes? Toward the close of the third round heart and lungs seem nonexistent. All boxers seem to have are their arms which flail away because one has to win. In boxing you can't do anything else but win. Perhaps that's why people who are crazy about boxing give up their whole lives to it.

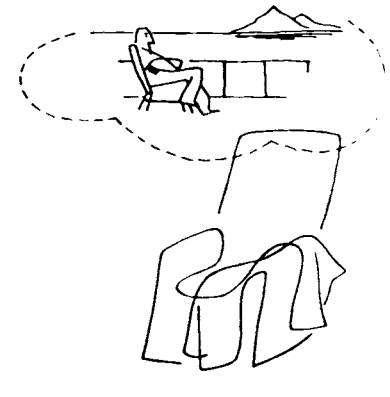


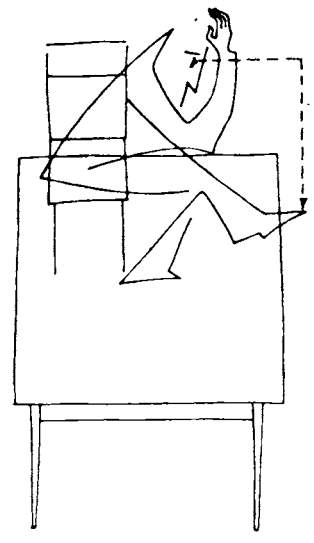
Vladimir Moiseyev, a 29-year-old engineer employed at the Industrial Design Institute in Minsk, capital of Byelorussia, started drawing cartoons six years ago. He says: "A cartoon is the formula for extracting the comic roots of an object, phenomenon or situation. People think in images, which should be put down on paper as lines, not as words. I don't like words because a man can hide his thoughts behind them. He can't hide behind drawings; there he must be open and honest."

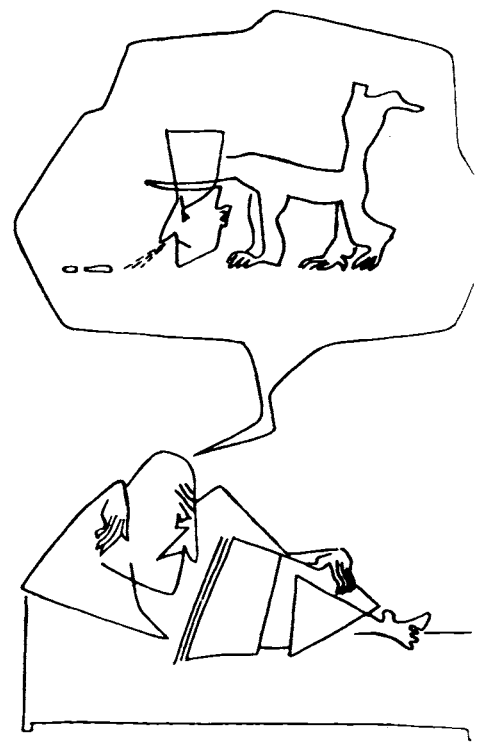


Telephone on duty.









Detective.

OUTER SPACE AND EMOTIONAL RESPONSE

By Fyodor Kosmolinsky
Master of Science (Medicine)

PILOTS AND COSMONAUTS are subjected to unusual flight and environmental stresses, to nervous and emotional strains which can reduce working capacity and disorganize a mission program.

Internists and neuropathologists know that emotion plays a decided role in the origin of cardiovascular and nervous diseases. Usually they examine only the patient. Prevention, however, requires that an experimental model of the condition be created, the reason researchers are concentrating on emotional response to extreme living and working conditions.

Such studies are very current in space medicine. As Soviet and American research has shown, before blast-off cosmonauts develop pronounced emotional stresses that persist through the flight, with especially high points in firing, landing and performing complicated operations.

Cosmonauts react emotionally to the novel situation, the risk and uncertainty, the closed and cramped space, the lack of ordinary comforts, and social isolation from the Earth. Add to all this the complicated conditions of spatial orientation and the need to maintain the required relationships in the cosmonaut-spaceship system in outer space and under zero gravity.

Considering the great variety of stimuli possible, we know that the first manned flight into space, the first walk outside the spaceship and other such stressful pioneering missions will elicit a whole gamut of emotional reactions—psychic, behavioral, vegetative and biochemical.

Yuri Gagarin's pulse rate, for example, reached 180 beats a minute at the boost stage. The same was true for Leonov when he stepped into outer space. His pulse rose to 162 beats per minute, and his breathing rate to 36 cycles per minute. When Gemini 2 docked with its target rocket, American astronaut Richard Gordon's pulse rate went up to 180 beats, and his rate of respiration to 40 cycles a minute, newspaper reports said.

A detailed study of man's emotional response in space, however, is technically complicated, so that researchers must look for similar situations in other fields of activity.

There is some analogy with flying practice. In 1957, for instance, American scientists conducting a psychological examination of flying personnel found that pilots develop a feeling of physical "aloofness" from Earth. In high-altitude flights, up to 40,000 feet, this phenomenon was noted in 48 of the 137 pilots examined, 35 per cent of the cases. More often than not, this feeling developed on solo flights, with muscular activity reduced, and was accompanied by various emotions: "unearthly serenity," pleasant freedom and gaiety, or sad loneliness.

Soviet aviation medicine experts, in examining pilots in flight, recorded their cardiograms, pulse rate, rate and rhythm of breathing and filmed the pilots' actions. This information, in addition to biochemical analyses of changes in the organism's internal environment and observations and self-observations of doctor-pilots, provided a rounded picture of the emotional state of flying personnel under complex conditions.

Soviet scientists made a study of the psychophysiological condition of crew members doing such complicated maneuvers as formation flying. After these flights pilots showed noticeable nervous and psychic changes: Their attention span and speed of visual perception were reduced, the latent time of motor responses was longer, and there was a rise in the threshold of the eye's electrical excitability and in the critical frequency at which light flickers blurred into a continuous stream. Emotional stress manifested itself in changes in breathing and blood circulation. The number of cardiac contractions increased to 145-160 a minute and even to 180-186 in learners, 2 to 2.5 times more than the norm. The number of breathing movements rose correspondingly to 50-54 a minute, or 2.5 to 3 times more than normal.

This study also demonstrated that not only the novelty of the task and its complications and dangers but also a keen sense of responsibility may evoke a heightened emotional stress in flying personnel.

Space psychology experts emphasize that alarm and wariness are intrinsic to space missions. Some foreign specialists even speak of an instinctive fear of outer space. True, cosmonauts have a natural feeling of wariness due to the novelty of the situation and its possible risks. Novelty and hazard in outer space will always be linked. Man's response in such conditions is and will be primarily an exploratory and orientation reflex for novelty, which is accompanied by more or less pronounced emotions.

The cosmonaut is under a tremendous emotional strain in complicated situations, especially when orienting the ship before landing. The slightest error at the moment of firing the retrorocket may move the ship into another orbit. Even a correct but protracted orientation procedure does not rule out the possibility that the ship may land in mountains, taiga, ocean or desert. Here is one of the examples of successful orientation. Pavel Belyayev, the Voskhod 2 commander, was permitted to land using manual controls. After analyzing the situation, he chose the landing area, oriented the ship and switched on the retrorocket at the specified moment. In that critical maneuver Belyayev remained cool and confident, a result of his rich experience as a fighter pilot.

Reentry, as orbital flight experience suggests, hides a number of contingencies which may provoke a great deal of emotional stress. Pilot-cosmonaut Andrian Nikolayev faced one. This is how he described his emotions at the time: "It is very interesting to see your ship beginning to burn as it enters the denser layers of the atmosphere. Flames leap about in the portholes, and you hear things cracking. You think, 'What if a part of the ship's heat shield should come off?' But I know the ship's design and therefore there is no reason to have any doubts. I say to myself, 'Be calm, let it burn, it is normal landing procedure.' "

Indeed, the cosmonaut's behavior in that situation attested to his great self-control. He was able to suppress his alarm and realistically appraise what was happening.

Future studies, both with ground simulation experiments and in conditions of real space flight, will certainly pay due attention to emotional stress. As space missions become more complicated, as space vehicles travel farther from the Earth and stay away for longer periods, emotional stress will play a critical role in changing the cosmonaut's behavior and working capacity. It therefore becomes important to select cosmonauts with that in mind and to develop ways and means of reducing extreme psychophysiological response to emotional stress. In choosing cosmonauts, we must be able to predict their conduct in complicated situations. We should also take into consideration the possibility of training for emotional response and will power.

What kind of emotional training? The kind that develops fearlessness, self-control, good physical coordination and a sense of one's "body architecture," as well as the ability to orient oneself spatially. These requirements are met by some kinds of physical training—special apparatus work, skindiving, high diving, and by flying and parachute jumping.



The Decembrists Armed Rising at Senate Square in St. Petersburg (1825)
From an old water color by K. Kolman

RUSSIAN REVOLUTIONARIES

By Georgi Zisman
Doctor of Science (History)

Vladimir Lenin
1870-1970

THE BIRTH of revolutionary ideas in Russia goes back to the eighteenth century: a period of profound crisis for a still feudal society that prompted advanced thinkers in many countries to look critically at fundamental social principles. Such ideas as democracy, freedom and equality became current.

In the second half of the eighteenth century the center of advanced political thought was France. There the bold ideas of Voltaire, Diderot, Helvetius, Meslier and others spread widely. The French Revolution of 1789-1794 stimulated revolutionary democratic thought, whose most distinguished exponents were Marat and Robespierre. Out of it developed the utopian communism of Babeuf.

The ideology of the forward-looking men of the French "third estate" in the period before the revolution and particularly during the revolution profoundly influenced the growth of progressive political ideas in other countries. Lenin noted that the French Revolution "left its imprint on the entire nineteenth century. The great French revolutionaries served the interests of the bourgeoisie, although they did not realize it, for their vision was obscured by the words 'liberty, equality and fraternity'; in the nineteenth century, however, what they had begun was continued, carried out piecemeal and finished in all parts of the world."

The closing decades of the eighteenth century witnessed the American people's struggle for independence against British colonialism. This just struggle spread democratic concepts in the English colonies and then in the young United States of America. The ideas of Jefferson and Paine, and the exhortations of Patrick Henry and Samuel Adams, reflected the determination of the American people to rule themselves and inspired their successful war for independence.

Russia, although economically backward, could not escape the influence of the revolutionary ideas of the age. The struggle between Russia's two main classes, the peasant serfs and their masters, the big landowners, grew more intense. A stubborn, mass-scale peasant war from 1773 to 1775 shook the empire. This uprising, led by Yemelyan Pugachov, spread over vast areas of the country, from Bashkiria, in the foothills of the Urals, and the lower reaches of the Volga, to the central regions. It frightened the nobility and the government of Catherine II and was put down only with large armed forces.

In appeals to the people during the uprising its leaders, primarily Pugachov himself, expressed the age-old dream of the peasant for freedom and land. The uprising proclaimed an end to the domination of the landowners over the peasants. It abolished the serf's obligatory work for his landlord and the nobility-dominated administrative and court systems. In one of his manifestos Pugachov declared the confiscation of the big landowners' land and its transfer to the peasants.

Like all leaders of peasant wars, those at the head of this powerful movement did not clearly see the connection between oppression by the landowners and the country's political system. The resolute struggle against the serf-owning nobility was coupled with a belief in the possibility of a kind, just czar. This was an illusion, of course; the czars themselves were the biggest landowners in the country. Nevertheless, the peasant uprising and the revolutionary demands it put forward spurred the ideological and political struggle and helped shape the political program of the outstanding Russian revolutionary democrat Radishchev.

Alexander Radishchev

Like many thinking men of his time Alexander N. Radishchev (1749-1802) was influenced by West European radical ideas. The Russian enlighteners Desnitsky and Kozelsky,[1] who had criticized serfdom in the middle of the eighteenth century but placed all their hopes for social progress on an enlightened monarch, did much to shape his political views.

Radishchev was the first Russian thinker to regard the people as the force that could change the country's political and social system. Like Marat and Robespierre, with whose writings he was not familiar, Radishchev believed a people's revolution would save the country from the horrors of serfdom and autocracy.

In his writings, particularly in *A Journey from St. Petersburg to Moscow* (1789), he attacked serfdom and called for the emancipation of the serfs and the distribution of all the land to the peasantry. It was hopeless, he said openly, to expect freedom or land from the landowners or the czar without a struggle by the people.

Radishchev was sharply critical of autocratic monarchy. An autocracy, he said, violated the natural condition of man. Its existence gave the people the right to revolt. The goal of a people's revolution was a republic. "People's rule" was essential to free the people from oppression and exploitation.

Radishchev was far ahead of his contemporaries in the west. Bourgeois revolutions in England and France did not satisfy him. He slashed out at the bourgeois system, with its economic and political inequality that permitted one factory owner to enrich himself at the expense of thousands of workers. He was in complete sympathy with the American struggle for independence and lauded its heroes in his ode "Liberty."

Looking back at the eighteenth century, Radishchev wrote dispiritedly that it had crushed man's bravest hopes beneath an iron heel, but he was convinced that a people's revolution would come.

The Decembrists

The revolutionary democratic movement in Russian political thought initiated by Radishchev was developed in the nineteenth century by many others.

Radishchev's immediate ideological successors were the Decembrists. Lenin defined the Decembrist rising of 1825 as the beginning of the first period of the movement for emancipation. He calls it the "nobiliary period" because in the first half of the nineteenth century, up to 1861, the chief opponents of the serf-owning feudal system came from the nobility. The Decembrists were nobles.

To the more farsighted members of the nobility it was evident that the autocracy and serfdom condemned Russia to economic and cultural backwardness. They were more conscious of the need for change after the Russian army had waged several campaigns in Europe during the Napoleonic wars. In the course of these campaigns a significant number of Russian officers came into contact with the social and economic system of more advanced European countries. Another reason for the enthusiasm with which progressive Russian officers adopted republican ideas was the Patriotic War of 1812. The defeat of Napoleon's huge army aroused a sense of national purpose and laid the emotional basis for far-reaching revolutionary changes that would give Russia its proper place among the advanced nations of Europe.

The radical wing of the Decembrists, among them Pavel I. Pestel, Kondrati I. Ryleyev and Nikolai A. Bestuzhev, took over Radishchev's progressive ideas.

The movement numbered several hundred members united in secret societies. The leaders of the societies drafted a program of social reform and of tactics to fight czarism. The most noteworthy political documents produced by the Decembrists were *Russian Truth* and *Draft of a Constitution.*

Russian Truth, written by Pavel Pestel (1793-1826), a leader of the revolutionary wing, formulated the theoretical and political base of the projected revolution. Pestel proceeded from the doctrine of natural rights, the social contract, and the inalienable rights of man. The people, he believed, had the right to demand that the government work for their common and individual prosperity. The aim of government should be "the prosperity of one and all," and "social prosperity should be held more important than private prosperity."

Pestel was against monarchy, either absolute or constitutional. He wanted a demo-

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[1] Semyon E. Desnitsky (date of birth unknown; died in 1789), Russian sociologist and jurist, professor at Moscow University; member of the Russian Academy of Sciences.

Yakov P. Kozelsky (1728-1794), Russian philosopher.

cratic republic without privileges or political advantages for either the nobility or the bourgeoisie, where all affairs of state would be in the hands of the people. Pestel rejected the state system of the bourgeois countries of Europe: "I have found," he said, "that in France and England the constitutions are merely a cover, in no way preventing the ministers in England and the king in France from doing whatever they wish. . . . The two chambers exist only as a cover."

This criticism of democracy in the bourgeois countries as purely formal places Pestel with the most advanced thinkers of his time, such men as Saint Simon, Charles Fourier and Robert Owen.

Some of Pestel's views on international relations are still of interest. In international law, for example, he argued for the sovereignty and equality of all states, large or small. "All individual countries," he wrote, "have the same rights and equal merit, and the small countries deserve as much respect as the large ones."

The other program document, *Draft of a Constitution*, was drawn up by Nikita M. Muravyov (1795-1843). It reflects to a greater degree the class limitations of the nobility: It proposes a constitutional monarchy and property qualifications to restrict electoral rights. But Pestel and Muravyov were, like all the other Decembrists, drawn together by their opposition to serfdom and absolutism and their demand for political and civil rights for the people.

The Decembrist movement had no unified program or tactical aims. Alongside the radical wing was a moderate group which limited the goals of the movement to a constitutional monarchy and a relaxation of serfdom.

Lack of unity weakened the Decembrists and helped Czar Nicholas I crush the uprising of December 14, 1825. But the main reason for the failure of the Decembrists and their greatest political weakness was their underestimation (or even complete denial) of the importance of revolutionary struggle by the people for their own emancipation. In their opinion the people, ignorant and unenlightened, could not achieve freedom and decent living conditions by their own efforts. Moreover, they feared a people's revolution and staked their hopes on conspirators, on a "chosen minority." They believed the people could be counted on, at best, to sympathize with the revolution but not to participate actively. The Decembrists did not realize that the experience of movements for emancipation in many countries had demonstrated that only a struggle by the masses of the people could overthrow a tyrannical regime. A coup carried out by high-placed people usually condemns a movement to failure. Even if it succeeds, it will merely change the ruling group without changing the substance of the political and social system.

The Decembrists were, in Lenin's words, "terribly far from the people." They did not trust those whose lot they wanted to improve. They counted on a military coup to give power to a group of the enlightened nobility.

It was to be expected that their courageous struggle against czarism would fail. The movement was brutally put down. Five of the most prominent Decembrists were hanged and the other leaders exiled to many years of hard labor in Siberia. But their ideas and activities gave a powerful impetus to revolutionary thought and helped pave the way for a more broadly based movement.

The Enlighteners

In the decades following the defeat of the Decembrists, progressive political thought developed along two main lines: relatively moderate bourgeois enlightenment and revolutionary democracy. The latter reached a high level and was the immediate forerunner of Marxism in Russia.

The first of these two movements was represented by the enlighteners of the thirties and forties who expressed the ideology of the Russian bourgeoisie and the section of the nobility that was acquiring bourgeois features. They believed the country would inevitably develop along capitalist lines, favored constitutional ideals and wanted civil rights for all sections of the population. Their most progressive quality was strong opposition to serfdom and autocratic monarchy. Capitalist development, they were certain, would bring universal prosperity.

Chaadayev and Granovsky were the most prominent of these enlighteners of the thirties and forties.

The *Philosophical Letters* which Pyotr Y. Chaadayev (1794-1856) published in the thirties condemned serfdom and the autocracy. He called slavery the greatest evil that was stifling and crushing all that was alive, all that was progressive, all that was best in the people of Russia. "This is the cursed reality against which we are all being smashed. This is what is turning the noblest efforts and the most splendid impulses into nothing. This is what is paralyzing the will of all of us, this is what brands all of us," Chaadayev wrote of serfdom. The immediate and inescapable task, he concluded, was to destroy serfdom. Chaadayev believed passionately in the power of enlightenment and moral perfection, but he did not believe in the creative powers of the people and therefore feared revolution.

Timofei N. Granovsky (1813-1855), professor of history at Moscow University, was esteemed by progressive intellectuals. His lectures attacked the country's feudal absolutist system and serfdom. But, like Chaadayev, he rejected revolutionary struggle for moderate reforms.

The enlighteners of the thirties and forties played a progressive role, but their moderation could not enlist Russia's revolutionary forces. It was the revolutionary democrats who became the ideologists for the Russian revolutionary movement. For almost 50 years, from the middle of the nineteenth century right up to the spread of Marxism in Russia, the revolutionary democrats ruled the minds of all the country's progressive men and women.

Revolutionary democracy took shape in Russia in the forties of the nineteenth century and came to full flower in the sixties. The leading revolutionary democrats were Herzen and Belinsky.

Alexander Herzen

Alexander I. Herzen (1812-1870) left an



ALEXANDER RADISHCHEV
(1749-1802)

PAVEL PESTEL was an officer in the blue-blooded Imperial Guards. He fought in the War of 1812 against Napoleon, saw service abroad and was honored with a gold sword for bravery. Only a few people of like minds in Tulchino, the town in the Ukraine where he was stationed, knew that this gifted officer was a leader of the most radical wing of a secret society, the Decembrists, pledged to overthrow czarism, and the author of *Russian Truth*, a program for revolution. Pestel was arrested on December 13, 1825, the day before the coup. He and four other leaders of the conspiracy were hanged in the Peter and Paul Fortress.



KONDRATI RYLEYEV
(1795-1826)

ALEXANDER RADISHCHEV, a government official of high rank in St. Petersburg, wrote an ode on liberty in 1783, the first revolutionary poem Russia had seen. Influenced by the ideas of Voltaire, Diderot and the other eighteenth century thinkers, in 1789 he published, at his own expense, *A Journey from St. Petersburg to Moscow*, an attack on serfdom. It cost Radishchev dearly. The book was burned and the author sentenced to death at the demand of Catherine II. She later "graciously" commuted the sentence to ten years of exile in the Ilim stockade in Siberia. Radishchev did not return to St. Petersburg until 1801-where, defiant as ever, he submitted bills for the abolition of serfdom and all caste privileges to the Legislative Commission. The authorities took steps to exile him again. Hounded by the police, he poisoned himself. It was not until after the 1905 Revolution that his book once again circulated.



PAVEL PESTEL (1793-1826)

KONDRATI RYLEYEV spent his youth in the army, like most aristocrats of his time. He graduated from the cadet school in St. Petersburg and saw several years of military service. Subsequently he worked as an assessor, and from 1824 managed the Russo-American Chamber of Commerce. But neither army life nor the civil service interested him. His two passions were poetry and political freedom. To contemporaries his verse was a call for revolution. In 1821 he joined the Society of Lovers of Russian Literature where he met many of the progressive writers of St. Petersburg. And two years later he joined the conspiratorial Decembrist movement. "No poet I, but citizen," he said of himself. But he continued to write and to edit the *Pole Star Almanac*. After the Decembrist revolt he was executed.

indelible imprint on the Russian emancipation movement and the history of philosophical thought. "In feudal Russia of the forties of the nineteenth century," Lenin wrote of Herzen,[2] "he rose to a height which placed him on a level with the greatest thinkers of his time."

The ideas of the revolutionary wing of the Decembrists and the uprising itself did much to develop Herzen the revolutionary. While still an adolescent, he vowed to avenge the executed leaders of the Decembrist uprising and to devote his life to the struggle for freedom. He carried on this struggle courageously and boldly. Hounded by the czarist police, he was exiled to a northern town in Russia at the age of 22. For more than 20 years he was forced to live abroad to escape arrest at home.

The pivot of Herzen's world outlook and activity was the fight against serfdom, which he considered a form of slavery, and against the despotism and tyranny of the autocracy. A convinced republican, he declared that any monarchy oppressed the people. In these ideas Herzen was following the revolutionary thinkers who had come before him—Radishchev, the Decembrists and Chaadayev. But he went much farther, approaching an understanding of the meaning of class struggle in the history of society and seeing that history as the natural replacement of one social system by another. Herzen pointed out the negative features of the bourgeois society he saw in Western Europe, with the class antagonisms and bitter class struggle between the workers and the bourgeoisie. In contrast to the autocratic system in Russia and bourgeois democracy in Western Europe, Herzen's ideal was a democratic society in which the people would form central and local governmental bodies and where all elected bodies would carry out the will of the people and be accountable to them. The road to such a society lay through a social revolution, he said, in which the motive force would be the masses of people.

His political views and his philosophy, basically materialist, rank him with the great revolutionary thinkers of the pre-Marxist period. He did not, however, rise to the level of the scientific socialism which Karl Marx and Friedrich Engels were evolving at about the same time.

Vissarion Belinsky

The distinguished literary critic Vissarion G. Belinsky (1811-1848) was another leading revolutionary democrat of the forties. His short life was one unending struggle against the ideology of reaction and despotism. He saw only one road to a brighter future, to a socialist society, one built on "right and valor," free from private property and exploitation. That road was a people's revolution. He never doubted its necessity.

Since he saw no possibility of a victorious people's revolution in Russia in his time, Belinsky outlined a program of reforms he believed the government could be forced to adopt. In an open letter to the writer Nikolai V. Gogol in 1847 he declared: "The most vital and contemporary national issues in Russia today are the abolition of serfdom, the abolition of corporal punishment and the strict enforcement of existing laws, at a minimum."

But even in this minimum program Belinsky did not reject the idea of a people's revolution. If the government and the big landowners failed to carry through reforms, the peasants, he suggested, should themselves solve their urgent problems "in another way, a thousand times more unpleasant for the Russian nobility."

Herzen and Belinsky were true defenders of the interests of the people, champions of a republic and democracy, enemies of serfdom, and bold critics of the inadequacies of the bourgeois system and government. But at the time the mass movement in Russia was still very weak, and the working class, destined to become a powerful force in Russia's revolutionary rejuvenation, was just arising. As a result, the revolutionary democrats of the forties could not offer a completely scientific revolutionary theory and a concrete program for a democratic revolution.

Nikolai Chernyshevsky

The ideological struggle of the fifties and sixties in Russia was influenced by the sharp political clashes in Western Europe and the revolutionary situation in Russia itself between 1859 and 1861. This revolutionary situation grew out of the "emancipation" of the peasants from serfdom in February 1861. The czarist government abolished serfdom but gave the major part of the land to the big landowners. The small fraction that went to the peasants they had to purchase, a policy that condemned most of them to land hunger and forced them to rent land from the big landowners on shackling terms. Moreover, the peasants remained without political rights. The "reform" led to mass peasant revolts that were brutally suppressed.

Any illusions about the possibility of basic reforms under the autocracy were shattered. Chernyshevsky and Dobrolyubov, the most prominent ideologists of revolutionary democracy, drew up the program and tactics for a broad people's revolution. They came out strongly against bourgeois-landowner liberalism, which urged the people to have faith in the czar and look to reforms from above.

Nikolai G. Chernyshevsky (1828-1889) was the ideological leader of the revolutionary camp in the Russia of the sixties. A materialist philosopher and a searching economist, his political views came close to scientific socialism. The motive force in history, said Chernyshevsky, is the people. The source of society's progress is the labor of the masses.

Although Chernyshevsky could not give a completely scientific explanation of social progress and, like all thinkers in the pre-Marxist period, interpreted history from the idealist point of view, he believed that material conditions played "practically the first role in life" and were the "basic reason for all facts and conditions in the other, higher spheres of life."

Besides his critical attacks on feudalism and serfdom, Chernyshevsky showed up the exploiter nature of capitalism and its characteristic contradiction between wealth and poverty, between the workingman and the

[2] Lenin's article on Herzen appears on page 34 of this issue.

owner. "Chernyshevsky," said Lenin, "was a remarkably profound critic of capitalism despite his utopian socialism."

The transition from one social order to another, said Chernyshevsky, takes place through social revolutions that are not fortuitous but a law of historical development. He understood that defense of the people's interests required a firm revolutionary government, a dictatorship of the people that could guard what the revolution had won and crush attempts by enemies of the people to turn the clock back.

Chernyshevsky was the greatest revolutionary theorist of the pre-Marxist period. It was a pity that he could not have foreseen the real motive force of society's development, a force that was just arising, the working class. The victory of a peasant revolution and the abolition of serfdom, which he thought would lead to socialism, could only accelerate the growth of capitalism, a natural development for small private farms. Lenin said of the weak points in Chernyshevsky's theory: "Chernyshevsky was a utopian socialist who dreamed of a transition to socialism through the old, semi-feudal peasant village commune. He did not see, nor could he see in the sixties of the past century, that only the development of capitalism and of the proletariat could create the material conditions and the social force for the achievement of socialism."

Nikolai Dobrolyubov

Chernyshevsky's closest associate, Nikolai Dobrolyubov (1836-1861), was a publicist and literary critic. In his short but eventful life he did much to popularize revolutionary ideas.

His political views coincided with Chernyshevsky's. For some years before Dobrolyubov died the two worked together on the magazine *Sovremennik* (*The Contemporary*), the ideological meeting place of Russian revolutionary democrats of the period.

From his youth Dobrolyubov was dedicated to the people and their fight for freedom. He wrote: "They say that my road of bold truth will be the death of me some day. That may very well be. But I shall know how to die so that it will not be in vain. If worst comes to worst, I shall have the comfort of knowing that I did not live and work in vain."

Dobrolyubov was an uncompromising enemy of serfdom. In the period preceding the emancipation of the serfs in 1861, he spoke out courageously and consistently on behalf of the peasants, demanding that all the land be turned over to them without charge.

Dobrolyubov called the autocracy the "kingdom of darkness." The bourgeois countries of the West, he noted, were progressive by comparison with autocratic Russia, but the wealthy ruled those countries; "the forces and power of society" were concentrated in their hands. He painted a caustic picture of the bourgeois parliament as a "talking shop."

A convinced socialist, Dobrolyubov believed feudalism and the bourgeois order should be replaced by a society with public ownership of the means of production and no possibility for the exploitation of man by man. Such a society could come only through a people's revolution, he said, and urged that "the whole rotten structure of the present administration be smashed." A government elected by the people would "listen to every voice from the people, and listen not in order to muffle it but to take it into consideration."

Dobrolyubov's socialism was utopian. Like his mentor Chernyshevsky, he assumed that a victorious peasant revolution in Russia would create the conditions for a transition to socialism. Like Chernyshevsky, he placed his hopes on the peasant commune. But in spite of these illusions, Dobrolyubov's ideas were most important for the development of Russian revolutionary thought. The bold appeals of Chernyshevsky and Dobrolyubov were clarion calls to Russia's progressives to fight autocracy. The czarist government took steps to silence them. Chernyshevsky was arrested in 1862 and spent more than 20 years in prison and exile. A serious ailment carried off Dobrolyubov at the age of 25, thus sparing him vengeance of the czarist authorities.

The revolutionary theory of Chernyshevsky and Dobrolyubov went as far as political thought could go before the spread of Marxism. It reflected the period of social evolution before the proletariat had emerged as a separate entity and developed an awareness of its role in history. That is why the great revolutionary democrats could not move beyond utopian socialism. But their ideas and writings, even under savage political censorship, roused the people of Russia to fight the autocracy and serfdom, exposed the exploitive nature of the bourgeois system, and called for revolutionary struggle to establish socialism. Lenin, in his famous book *What Is To Be Done?* (1902), called them the "forerunners of Russian social democracy."

The Narodniks

Influenced largely by the ideas of Chernyshevsky and Dobrolyubov, there developed in Russia of the seventies a Narodnik movement, another of the forerunners of the Russian Marxists.

The Narodniks of the seventies saw the peasantry as the motive force of the revolution. They carried on an active revolutionary struggle against czarism and set up a number of conspiratorial organizations, but their theoretical views did not reach the level of Chernyshevsky's and Dobrolyubov's.

There were three trends in the revolutionary Narodism of the seventies. One is associated with Mikhail A. Bakunin (1814-1876), the theoretician and leader of anarchism. He represented the "revolt" trend in the Narodnik movement, which counted on a destructive peasant revolution to wipe out all government and establish socialism.

The second Narodnik trend, with Pyotr L. Lavrov (1823-1900), the ideological leader, was based on the belief that emancipation of the people lay through the enlightenment of the peasantry. Lavrov called on the intellectuals to go among the people, educate them and stir them to action.

The ideological leader of the third trend was Pyotr N. Tkachov (1844-1886). He believed in conspiratorial action. Conspirators would overthrow the czar, set up a new government and, from above, reorganize so-



ALEXANDER HERZEN (1812-1870)

NIKOLAI CHERNYSHEVSKY, the son of a priest from the central Russian town, became, as he himself said, a partisan of "socialists, communists and extreme republicans" while a student at St. Petersburg University. In 1853 he became one of the editors of *Sovremennik (The Contemporary)*, the most progressive Russian periodical of the time. Chernyshevsky wrote voluminously on philosophy, economics and esthetics. In the reaction that followed the 1861 reform *Sovremennik* was shut down and Chernyshevsky was arrested. Imprisoned in the Peter and Paul Fortress, he wrote *What Is To Be Done?*—a novel on which several generations of Russian revolutionaries grew up. On May 19, 1864, in St. Petersburg's Mytninskaya Square he was pilloried, a sword broken over his head, and later sentenced to seven years of hard labor. In 1883 he was permitted to leave Siberia for the provincial town of Astrakhan in the Volga delta. Six years later he returned home to Saratov, his health broken, and died shortly thereafter.



GEORGI PLEKHANOV (1856-1918)

ALEXANDER HERZEN wrote: "The hanging of Pestel and his comrades pulled me out of my apathy." When he was 16 Herzen founded a political club at Moscow University and in 1834, after he had graduated, was arrested and exiled to the provinces "as a freethinker and danger to society." Back from exile, he was shadowed by the police. In 1847 he emigrated with his family. He saw the June 1848 uprising in Paris and its lamentable end. Several years later his mother and son were drowned in a shipwreck and his wife died. Almost shattered by his personal tragedies and the failure of the revolution he moved to London in 1852. There he organized a free Russian press and, from 1857 to 1867, edited his famous *Kolokol* (*The Bell*), a revolutionary magazine. Two years after *Kolokol* closed, he moved to Paris. He died shortly thereafter of a cold he caught at a rally protesting the rule of Napoleon III. He completed his absorbing autobiography, *My Past and My Thoughts*, before his death.



NIKOLAI CHERNYSHEVSKY
(1828-1889)

GEORGI PLEKHANOV leaped into public notice with a bold and fiery speech at a demonstration against czarist autocracy on December 6, 1876. He was 20 years old and had just quit his studies at a mining college for the hazardous life of a revolutionary. He became prominent in the Narodnik movement, but after emigrating in 1880, disavowed Narodism for Marxism. He translated the *Communist Manifesto* into Russian and in 1883 founded in Geneva the Emancipation of Labor, the first group of Russian Marxists. From 1900 he worked with Lenin, but at the Second Congress of the Russian Social-Democratic Party in 1903 split to join the Mensheviks. He went back to Russia after the bourgeois February Revolution. Although he disapproved of the October Socialist Revolution he stayed neutral. He died in Finland but was buried in Volkov Cemetery in Leningrad, then Petrograd.

ciety on socialist lines. Tkachov's views were a variety of Blanquism, which Marxism completely rejects.

All ideologists of Narodism suffered from the same grave mistake: They believed that history is made by outstanding men. The Narodniks did not understand that social evolution is an objective, natural process, a result of changes in the mode of production. Failure to understand that led them to draw erroneous conclusions about the possibility of a special, purely Russian road to socialism through a peasant revolution. Underestimation of the role of a mass working-class movement led them to terrorism, to tactics harmful to the revolutionary cause.

Despite the heroism and dedication of many of its followers, Narodism proved to be a barren movement, doomed to fail. Its best adherents subsequently turned to Marxism. Notwithstanding the immaturity of their theories, however, the revolutionary Narodniks played an important role as forerunners of scientific communism in Russia. Until the spread of the social-democratic movement in the seventies and eighties, Narodism was the only organized revolutionary movement against czarism. The Narodnik organizations Zemlya i Volya (Land and Liberty) and Narodnaya Volya (People's Will) had hundreds of members ready and willing to give their lives for the cause they served. Many Narodniks died on the gallows or in czarist torture chambers. Lenin's family paid a heavy price for the enthusiasm with which young people turned to the Narodnik tactic of terrorism. Lenin's eldest brother Alexander was executed in 1887 for his part in the preparations for an attempt on the life of Alexander III. When the news of the execution reached Simbirsk (now Ulyanovsk), where the family lived, Lenin, who was still in his teens, said of his brother's membership in a terrorist Narodnik organization: "No, we shall not take this road. This is not the road to follow."

The First Marxists

The activities of revolutionary Narodism coincided with the beginnings of the spread of Marxism in Russia. In the sixties Russian revolutionaries began to study the writings of Marx and Engels. The first, far from perfect, translations appeared. Marxism really began to spread in Russia in the eighties, when capitalist relations were developing vigorously. A proletariat emerged, and the Russian working-class movement took its first steps.

Lenin wrote later that "Russia achieved Marxism—the only correct revolutionary theory—through the agony she experienced in the course of half a century of unparalleled torment and sacrifice, of unparalleled revolutionary heroism, incredible energy, devoted searching, study, practical trial, disappointment, verification and comparison with European experience."

The first Russian Marxist group, Emancipation of Labor, was organized by revolutionary émigrés in Geneva in 1883 under the ideological leadership of Georgi V. Plekhanov (1856-1918). Former Narodniks made up the core of the group.

Its goals were to spread the scientific socialism of Marx and Engels in Russia and to polemicize against the Narodnik view held by so many Russian revolutionaries.

Plekhanov played a decisive part in the activities of this first Russian Marxist group. He is credited with the spread of Marxism among progressive intellectuals and the more politically conscious sections of the Russian working class, the awakening of the working class, and the theoretical prerequisites for the rise in Russia of a Social-Democratic party. He was the first Russian revolutionary to see that Marxism could be applied to Russian conditions. He was the first to aim at uniting the Russian emancipation movement with scientific socialism. The members of the Emancipation of Labor group translated and published in Geneva the most important works of Marx and Engels for distribution in Russia.

Plekhanov and his fellow thinkers wrote a large number of theoretical, journalistic and critical tracts on revolutionary Marxism and its application to conditions in Russia. The writings of Plekhanov himself were brilliant expositions, in popular form, of the philosophical and political problems facing Russian revolutionaries. His criticism of the ideological positions and tactics of the Narodniks weakened their influence and prepared the ground for a shift in the ideology of the Russian revolutionary movement to Marxism.

The Emancipation of Labor group theoretically substantiated Russian social-democracy and took the first step to join up revolutionary theory to the working-class movement. But this group could not guide the movement or become the leading center of the Russian revolution. Strictly speaking, it did not attempt to. Its members were well aware of their limited forces and possibilities. A Marxist party, a party of Social-Democrats, as the Communists were then called in Russia, was the only party that could become the guiding force.

Although Plekhanov's political views were basically Marxist, some of them were badly in error. He underestimated the revolutionary potential of the peasantry, rejected the idea of an alliance between the working class and the peasantry, and put his faith in the revolutionary spirit of the Russian bourgeoisie. These errors led him later, after the formation in 1903 of a Russian Marxist party, to deviate from revolutionary Marxism to what was essentially opportunism (Menshivism).

Leninism, which arose in the nineties of the nineteenth century, was a new stage in the development of revolutionary thought in Russia.

The new era posed immense tasks for Marxist science and for progressives in all countries. What had to be done was to generalize the experience of the world working-class movement in the new historical conditions, determine the roads that would lead to the victory of socialist and national-liberation revolutions, draft a program for building socialism and communism, and all along the line fight off reactionary ideology and various shades of opportunism in the revolutionary movement.

Lenin devoted himself to these epochal tasks. His teaching, Leninism, is the highest achievement of social thought in the twentieth century. It incorporates all of the truly scientific elements of world and Russian social thought and philosophy.

MAY DAY, 1919

This was the second time May Day, the international working-class holiday, was being observed in the newly founded Soviet Republic. It was a cheerless time—a civil war was being fought, the



economy had ground to a standstill, and hunger was rife. Nevertheless Moscow was bedecked for the holiday. The demonstrators carried red flags and wore scarlet ribbons in their lapels. The instruments of brass bands gleamed in the sunshine.

On Red Square the parade was greeted by Vladimir Lenin. That day he made three speeches, and they were all recorded. Preserved also are two short film sequences and several photographs, two of which we reproduce here, of Lenin on this festive day.

The first was made by an amateur, Nikolai Agapov, who







MAY DAY, 1919

worked at a printshop. He remembered later that the crowd was so thick he had trouble getting close enough. He waited for a long time to catch Lenin in a characteristic pose. On this photograph Lenin is shown against the background of a thronged Red Square. He is speaking from the Lobnoye Mesto, a raised surface which in times long past served as a scaffold. One of the men executed here was Stepan Razin, leader of a seventeenth century peasant revolt. It was on May Day, 1919, that a temporary monument to Razin was unveiled on this spot. In his brief tribute to this rebel, Lenin spoke of the many sacrifices the Russian people had made in their struggle for freedom. Many difficulties still lay ahead, but he knew that the revolutionary masses would overcome them all and build socialism.

In the foreground beside Lenin is Vladimir Zagorsky, Secretary of the Moscow Party Committee, a most able and devoted revolutionary who was killed shortly afterward by a terrorist bomb hurled at the committee building in September of the same year.

Zagorsky is also in the second photograph, with his back to us a little to the right of Lenin. This was taken near the Kremlin wall during the parade. Lenin is talking to his wife Nadezhda Krupskaya and to Anna Rozovskaya (seen in profile behind Krupskaya), a professional revolutionary who was then a functionary of the Moscow Party Committee. The stoutish man with the hat in the lower left corner is Maxim Litvinov, then member of the Collegium of the People's Commissariat of Foreign Affairs. During the Second World War he served as Soviet Ambassador to the United States; you have read about this gifted diplomat in our January to March issues of this year.

This last photograph is of special interest today. We would call it a candid camera shot. Lenin seems so engrossed in a half-jocular conversation that we can almost hear the infectious laugh mentioned so often by his contemporaries.

IN MEMORY OF HERZEN

By Vladimir I. Lenin

ONE HUNDRED YEARS have elapsed since Herzen's birth. The whole of liberal Russia is paying homage to him, studiously evading, however, the serious questions of socialism, and taking pains to conceal that which distinguished Herzen the *revolutionary* from a liberal. The conservative press, too, is commemorating the Herzen centennial, falsely asserting that in his last years Herzen renounced revolution. And in the orations on Herzen that are made by the liberals and Narodniks abroad, phrasemongering reigns supreme.

The working-class party should commemorate the Herzen anniversary not for the sake of philistine glorification, but to make its own tasks clear and ascertain the place actually held in history by this writer who played a great part in paving the way for the Russian revolution.

Herzen belonged to the generation of revolutionaries among the nobility and landlords of the first half of the past century. The nobility gave Russia the Birons and Arakcheyevs,[1] innumerable "drunken officers, bullies, gamblers, heroes of fairs, masters of hounds, roisterers, floggers, pimps," as well as amiable Manilovs.[2] "But," wrote Herzen, "among them developed the men of December 14,[3] a phalanx of heroes reared, like Romulus and Remus, on the milk of a wild beast. . . . They were veritable titans, hammered out of pure steel from head to foot, comrades in arms who deliberately went to certain death in order to awaken the younger generation to a new life and to purify the children born in an environment of tyranny and servility."

Herzen was one of those children. The uprising of the Decembrists awakened and "purified" him. In the feudal Russia of the forties of the nineteenth century, he rose to a height which placed him on a level with the greatest thinkers of his time. He assimilated Hegel's dialectics. He realized that it was "the algebra of revolution." He went further than Hegel, following Feuerbach to materialism. The first of his *Letters on the Study of Nature,* "Empiricism and Idealism," written in 1844, reveals to us a thinker who even now stands head and shoulders above the multitude of modern empiricist natural scientists and the host of present-day idealist and semi-idealist philosophers. Herzen stood on the threshold of dialectical materialism, and halted—before historical materialism.

It was this "halt" that caused Herzen's spiritual shipwreck after the defeat of the Revolution of 1848. Herzen had already left Russia and observed this revolution at close range. He was at that time a democrat, a revolutionary, a Socialist. But his "socialism" was one of the countless forms and varieties of bourgeois and petty-bourgeois socialism characteristic of the period of 1848, which were dealt their deathblow in the June days[4] of that year. In point of fact, it was not socialism at all, but so many sentimental phrases, benevolent visions, which were the expression *at that time* of the revolutionary character of the bourgeois democrats, as well as of the proletariat, which had not yet freed itself from the influence of those democrats.

Herzen's spiritual shipwreck, his profound skepticism and pessimism after 1848, was the shipwreck of the *bourgeois illusions* of socialism. Herzen's spiritual drama was a product and reflection of that epoch in world history when the revolutionary character of the bourgeois democrats was *already* passing away (in Europe), while the revolutionary character of the socialist proletariat had *not yet* matured. This is something the Russian knights of verbal incontinence, who are now covering up their own counterrevolutionary nature by florid phrases about Herzen's skepticism, did not and can not understand. With these knights, who betrayed the Russian Revolution of 1905 and have even forgotten to think of the great calling of a *revolutionary,* skepticism is a form of transition from democracy to liberalism—to that toadying, vile, foul and brutal liberalism which shot down the workers in 1848, restored shattered thrones and applauded Napoleon III, and which Herzen *cursed,* unable to understand its class nature.

With Herzen skepticism was a form of transition from the illusions of a bourgeois democracy that is "above classes" to the grim, inexorable and invincible class struggle of the proletariat. The proof: the *Letters to an Old Comrade,* to Bakunin, written by Herzen in 1869, a year before his death. In them Herzen breaks with the anarchist Bakunin. True, Herzen still sees this break as a mere disagreement on tactics and not as a gulf between the world outlook of the proletarian who is confident of the victory of his class and that of the petty bourgeois who has despaired of his salvation. True enough, in these letters Herzen again repeats the old bourgeois-democratic phrases to the effect that socialism must preach "a sermon addressed equally to workman and master, to farmer and burgher." Nevertheless, in breaking with Bakunin, Herzen turned his gaze, not to liberalism, but to the *International* —to the International led by Marx, to the International which had begun to *"rally the legions"* of the proletariat, to unite *"the world of labor,"* "which is abandoning the world of those who enjoy without working."

* * *

Failing as he did to understand the bourgeois-democratic character of the entire movement of 1848 and of all the forms of pre-Marxian socialism, Herzen was still less able to understand the bourgeois nature of the Russian revolution. Herzen is the founder of "Russian" socialism, of "Narodism." He saw "socialism" in the emancipation of the peasants *with land,* in community land tenure and in the peasant idea of "the right to the land." He set forth his pet ideas on this subject an untold number of times.

Actually, there is *not a grain* of socialism in this doctrine of Herzen's, as, indeed, in the whole of Russian Narodism, right down to the faded Narodism of the present-day Socialist-Revolutionaries. Like the various forms of "the socialism of 1848" in the West, this is the same sort of sentimental phrases, of benevolent visions, in which is expressed the *revolutionism* of the bourgeois peasant democracy in Russia. The more land the peasants would have received in 1861[5] and the less they would have had to pay for it, the more would the power of the feudal landlords have been undermined and the more rapidly, fully and widely would capitalism have developed in Russia. The idea of the "right to the land" and of "equal distribution of the land" is nothing but a formulation of the revolutionary aspirations to achieve equality cherished by the peasants fighting for the complete overthrow of the power of the landlords, for the complete abolition of landlordism.

This was fully proved by the Revolution of 1905. On the one hand, the proletariat came out quite independently at the head of

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[1] Ernst J. Biron (1690-1772)—favorite of Empress Anna Ivanovna during her reign (1730-1740). Alexei A. Arakcheyev (1769-1834)—favorite of Emperors Paul I and Alexander I. The names of Biron and Arakcheyev symbolize the most brutal despotism.

[2] Manilov—a character in *Dead Souls,* the famous novel by Nikolai V. Gogol. Manilov personifies the pipe dreamer, the empty talker.

[3] Men of December 14 were Russian revolutionary noblemen who fought against serfdom and the autocracy. They revolted on December 14, 1825.

[4] The reference is to the events of June 23-26, 1848, in Paris when the workers rose demanding a "democratic and social republic." The revolution was crushed by government troops.

[5] Serfdom was abolished in Russia in 1861.

(Continued on page 60)

THE EXAMINATION CARD IN HISTORY

BY MARIETTA SHAGINYAN

MARIETTA S. SHAGINYAN (BORN 1888) IS A WELL-KNOWN SOVIET WRITER. SHE HOLDS A DOCTOR'S DEGREE IN PHILOLOGY AND IS A CORRESPONDING MEMBER OF THE ACADEMY OF SCIENCES OF THE ARMENIAN REPUBLIC. AN EXCEPTIONALLY VERSATILE WRITER, SHE BEGAN AS A JOURNALIST AND THEN, IN 1909 AND LATER, PUBLISHED SEVERAL VOLUMES OF VERSE. SHE HAS WRITTEN SHORT STORIES, NOVELLAS, NOVELS AND CRITICAL ESSAYS. FROM HER PEN HAVE COME A MONOGRAPH ON GOETHE, A STUDY OF EIGHTEENTH CENTURY CZECH COMPOSER IOZEF MYSLIEVECZEK, AND REMINISCENCES OF RUSSIAN COMPOSER SERGEI RACHMANINOFF

LENIN OCCUPIES A SPECIAL PLACE IN MARIETTA SHAGINYAN'S WRITINGS. YEARS AGO NADEZHDA KRUPSKAYA, LENIN'S WIDOW, READ IN MANUSCRIPT FORM THE CHAPTER REPRINTED HERE FROM SHAGINYAN'S BOOK "THE ULYANOV FAMILY." SHE WROTE THE AUTHOR:

"TO TELL THE TRUTH, I AM VERY MUCH AGAINST NOVELS, STORIES AND SCENARIOS BASED ON THE LIFE OF ILYICH.[1] NO MATTER HOW PAINSTAKING THE AUTHOR IS, WHAT HE USUALLY PRODUCES IS NOT A PICTURE OF ILYICH, THE LIVING ILYICH, BUT A PICTURE OF SOMEBODY ELSE, AND USUALLY A DISTORTED PICTURE OF THE PERIOD AS WELL. THIS DISTRESSES ME VERY MUCH. IT WAS WITH SOME APPREHENSION THAT I BEGAN TO READ YOUR MANUSCRIPT. . . . AUTHORS OF REMINISCENCES USUALLY WRITE THEM SOMEWHAT ONE-SIDEDLY. READING YOUR MANUSCRIPT, I FELT HOW CORRECT YOUR APPROACH TO THE SUBJECT WAS. I SUPPOSE ONLY A PRACTICED AUTHOR COULD, ON THE BASIS OF A STUDY OF THE MATERIALS, PRESENT A PICTURE OF THAT PERIOD. THIS IS ALSO VERY IMPORTANT FROM THE HISTORICAL POINT OF VIEW. I LIKED BOTH YOUR CONCEPTION AND THE MANUSCRIPT ITSELF. . . ."

THE CHAPTER, "THE EXAMINATION CARD IN HISTORY," IS PUBLISHED HERE BY PERMISSION OF THE AUTHOR.

WHO BROKE THE PITCHER?

LENIN appeared on the stage of history when he was still a very young man. From the beginning, however, this young man showed that he was a mature individual, the "Ilyich" who so impressed his contemporaries. His earliest literary effort, in 1893 at the age of 23, was an analysis of a book about peasant farming in the south of Russia by the Russian economist and statistician Vladimir Postnikov. There we already see the mature Lenin. The review is a masterly analysis, written with unerring conclusions and passionate conviction. It cannot in any way be called "youthful," because ordinarily an author, writing in his youth, is usually still in process of formation, is seeking himself, has not yet taken complete shape, and his work is a mixture of the right and the wrong. Here, however, a grown man stands before us in all the rounded clarity of his political views.

Nobody is born mature, however. The biographer-novelist's hardest and most interesting job is to discover how Lenin's character took shape and how his convictions were formed. The key factor in this process was the period itself, a period when Russian progressives were still under the sway of the traditions of the sixties and in the grip of the revolutionary mood of the seventies.[2] A tremendous influence was also exerted by his family, by his elder brother Alexander, by the atmosphere of true democracy and the ethical and cultural values that surrounded him from childhood.

But how did Lenin's individuality take shape? Through what inner storms and emotional experiences did the fourth[3] child of the large family of a director of elementary schools develop into a genius of revolutionary thought and action? What shaped his so completely integral and exemplary character as a Marxist-Communist? For this period of Vladimir's life we have the fewest sources. His elder sister Anna, main biographer of his childhood period, left a very detailed account of his early years, but she says hardly anything about his high school years in her reminiscences. During that crucial period in Vladimir's development she was teaching school and then attending college, living away from home most of the time. Her attention in those years was focused on the elder rather than the middle brother. As for the youngest members of the family, they began to remember and understand the middle brother when he was past his youth. Their accounts relate chiefly to the period when Vladimir was a college student in Kazan, and to the time of his first exile and law practice in Samara.[4]

Sister Olga, who was nearest his age and could have told us more about him than the others, died young. There remain his high school friends, but here again the biographer draws a blank. Mikhail Kuznetsov, his closest companion, was in the same class as Vladimir from the first year to the last, but he knew him well only when they were both small. Beginning with the fifth grade, Kuznetsov was no longer an intimate. His explanation of the rift was that Vladimir had far outstripped him in development and really had no close friends in the upper grades. Although Vladimir's relations with his classmates were warm and informal, his attitude toward everyone was much the same.

Kuznetsov's recollection tallies with the meager information we have from members of the Ulyanov family. Evidently Vladimir's formative period passed without attracting particular attention either among his friends or at school. There was nobody to whom he bared his heart.

What the biographer must search for are not only reminiscences of individuals but those key episodes in the life of the family when hidden processes of character formation suddenly came to the surface in some memorable action or words, and from this action or word he must draw conclusions about the boy's inner experiences.

What makes this line of approach all the more valid is that we have an impressive instance from Vladimir's early childhood which shows how deeply, slowly and invisibly his fundamental moral reflexes and attitudes were formed when he was very young. While on a visit one day to an aunt, he and his cousins, boys and girls of different ages, were alone for a while without adults. In the course of their play little Vladimir, who was always lively and vociferous with children his own age, broke a pitcher. When his aunt came in, she asked who had done the damage. One after another the children answered, "Not I." Vladimir also said, "Not I." There was no further mention of the incident although the other children, of course, and the aunt, too, knew who had broken the pitcher.

One evening some considerable time later, as Vladimir's mother was tucking him and the other children into bed and kissing them good-night, he suddenly burst into tears.



The young Lenin demonstrating at University of Kazan against the restriction of student rights.

When she asked him what the trouble was, he replied "Mother, I lied to Auntie. I told her I didn't break the pitcher, but I really did."

This strikingly simple and forceful outburst of what were already mature feelings and thoughts was typical of Vladimir's entire development. It showed that he was in the complex process of forming a deep-going moral judgment of his actions. His character took shape somewhere beneath the surface, unseen and unnoticed by those around him, until the traits that had already matured surfaced as an explosion. The little boy had come home from his aunt's ashamed of having lied. The lie had gone unpunished; no one else in his own family was apparently aware of it. Every evening the children's mother kissed them good-night, and the children happily and calmly fell asleep. Little Vladimir, however, felt more guilty about it from one evening to the next. His sense of guilt kept building up until it finally burst through in a storm of tears. The remarkable thing, though, was that there was nothing either spontaneous or unconscious or plaintive in his confession. He gave a clear and accurate moral appraisal of his action.

The episode is indicative of Vladimir the youth as well as of Vladimir the child. Many of the things in Lenin's youth that seem momentary, involuntary or accidental are actually an expression of a very deep, and sometimes very prolonged, emotional experience that went unnoticed by others.

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[1] Lenin was often called simply by his patronymic Ilyich, the customary Russian form of address for a person who is greatly respected and loved.

[2] The sixties and seventies of the last century witnessed a great upsurge in the democratic and revolutionary movement in Russia.

[3] Between Anna and Alexander, the elder children, and Vladimir came a third child, Olga, who died in infancy. The daughter born after Vladimir was also named Olga.

[4] The period from the autumn of 1887 to the autumn of 1893, when Lenin was between the ages of 17 and 23. Samara is the former name of the Volga town of Kuibyshev.



Lenin and mother receive news of brother's execution for an attempt on the czar's life. "This is not the road to follow," he said.

THE ADOLESCENT MATURES

There is a painting of a student meeting at Kazan University.[5] When Lenin's father graduated from the same university 35 years earlier, the spirit there, as well as the instruction and student life, was much more democratic and free. At the end of 1887, when Vladimir's first semester as a law student was drawing to a close, new university regulations that were an insult to the students were introduced. The new regulations required "overseers" to keep an eye on the students, who were expected to wear high-collared uniforms neatly "buttoned up all the way," as though the free university corridors were in a military academy. The next thing the students knew they would be ordered to line up and salute the "overseers"!

The unrest at Kazan University was a forceful protest against these innovations. In the painting referred to above, a group of students, angry that the door to a lecture room had been locked, rush down a corridor. At their head is young Vladimir Ulyanov, his face flushed, his eyes blazing.

From what source material did the artist derive this portrayal that is so unlike the calm, even-tempered, somewhat sarcastic Vladimir described by everyone else? The chief chronicler of this famous scene was none other than the czarist police. The colorless police pen which filled the report with lifeless clichés suddenly broke out in color images when it described the student Ulyanov who, it said, stormed and raged, dashed about waving his arms, and was red in the face. The sudden fury of the usually calm and restrained youth was so striking that the police pen could not help recording it in language it did not ordinarily use. Young Lenin's revolutionary outburst was neither accidental nor sudden; it did not have its origin in the general student unrest. Its roots ran deeper, and it had been building up a long time. The Kazan events did not make Lenin a revolutionary; they only provided an outlet for the spiritual protest he had stored away. How and under what circumstances had this protest accumulated? What had the boy Vladimir experienced and thought about, left to himself in the most important formative years, when his voice lost its childish treble and grew deep, when his stocky childish body became the strong, sturdy body of a youth?

When Ilya Ulyanov, Vladimir's father, made the rounds of rural schools in December 1885, he was not his usual talkative self. The teachers noticed that he seemed troubled. Besides, he was obviously unwell; he shivered in his leather coat, he had a scarf wrapped around his throat, and his voice was hoarse. Anna, traveling home from St. Petersburg for the Christmas vacation, met her father on the way, and at first she hardly recognized him, so greatly had he changed. Anna herself had been "out of sorts," as she put it, all that year. She felt that her brother Alexander, whom she loved dearly, was paying less attention to her in St. Petersburg than he used to; the younger children, whom she missed so much, thought about her less than they had before; and her mother was overburdened with household cares. It was in this gloomy mood that daughter and father sat side by side under a single lap robe in a mail sleigh as they traveled along the snow-covered road in the murky December twilight, the snow crunching beneath the runners.

Anna was surprised at her father's bitter, even hopeless, tone as he talked about his affairs. To the jingling of the sleigh bells he cursed the government's stupid policy of closing down elementary schools. He did not ask about his eldest son, and it did not occur to her that he knew more about Alexander than she did.[6]

Sitting there side by side under the fur robe, both Anna and her father seemed wrapped in their own moods, in thoughts of family affairs and the destiny of the Ulyanovs. But together with them, in the howling winter wind and the crack of the driver's whip, in the ramshackle roadside cottages, in the driver's bent back, there traveled the destiny of the whole of Russia of those troubled times, the bleak, oppressive, seemingly endless reactionary period of the eighties. There was the feeling that their generation had already lived through its best years and there was nothing more to look forward to.

Nor did Anna feel the usual coziness on returning home. There were fewer acquaintances in Simbirsk. The Christmas and New Year's holidays passed quietly. Her father was not well. In the morning he had complained to his wife of a chill. He did not join them at dinner but stood in the doorway looking at his big and beloved family in the big and beloved dining room, with the mother's sewing machine in the corner, with the maps on the wall, and the old clock high on the wall, ticking away on its familiar note, as though it, too, were a member of the family. With the exception of Alexander, the eldest son, the whole family was there, and his wife Maria, his faithful companion throughout the years of his working life, was still as straight and slender as a girl. The head of the family cast his eyes over them "as though he had come to say good-by" and carried away with him this last vision. When his wife came into the study with a blanket to cover him, he lay unconscious.

The death of Ilya Ulyanov in January 1886 came as a blow to his family and to the town. It was rumored that there was something "strange" about it, so sudden and unexpected that perhaps he had taken his own life. A year later, when everything became known about Alexander,[7] people speculated that the director of elementary schools had been aware of what his son was planning and that this had sent him to his grave.

At the time of this bereavement Vladimir was not yet 16. He was a brilliant student in high school, always at the head of his class. The teachers called on him only when no one else was able to answer or when they wanted him to explain something in their place. Vladimir's superiority became particularly evident in the seventh, the next to last, year. In preparation for exams on all the subjects previously covered, the students spent hours memorizing details they had long forgotten. But Vladimir remembered it all as though he had heard it the day before. He trained not his visual memory but his oral memory. He listened closely to the teacher's explanation. Once he had heard it, there was no need for further study at home.

Vladimir never complained about school as Alexander and Anna had. It would not be an exaggeration to say that he loved school. His favorite subjects were Latin and Greek. In those days Greek was taught from readers compiled without rhyme or reason: a jumble of excerpts from mythology, ancient anecdotes without beginning or end, and humorous stories. To students who every now and then fished a mythological "indecency" out of this jumble, the Greek lessons were an endless source of mischief and jokes. Vladimir, however, who used to come to class half an hour early to help others with their homework, had a way of making sense out of any Greek riddle.

Judging by some of the remarks he made explaining the assignments to his classmates, Vladimir had already grasped the distinguishing quality of ancient Greek. It is a quality that strikes one today, too, on a close perusal of a Greek reader. For all his "mythologicalness," what a sturdy member of society this ancient Greek was, what a son of his times and his environment, what a politician! And to what a degree his faults and virtues were not merely personal but the faults and virtues of the society in which he lived! He was found worthy of the highest praise only when he had done something for the common good.

This quality was even more strongly developed among the Romans. Once, while reciting to his friends a fiery speech of Cicero's against Catiline, Vladimir exclaimed, "Wonderful!" What picture did he see in his mind when he made that exclamation? A meeting of the Senate, with Catiline, notorious for his shady and criminal undertakings against the general welfare, standing and listening to an oration in which Cicero denounces him with all the figures of rhetoric. The piercing, bulletlike power of the exact word, the art of verbal skirmish which barred all roads of retreat to one's opponent, the polemical art of the born politicians of ancient Rome—all this so entranced Vladimir that he never felt bored in his Greek and Latin classes. His sister Anna recalled the interesting and adult way he taught her Latin when he was only a boy. His diploma noted that the subjects in which he most excelled were Latin and Greek.

The death of his father was Vladimir's first deep sorrow. His father had been proud of the boy. Ever since childhood Vladimir had looked into his father's study when he came back from school to report happily: "I got Excellent in Latin today, and the same in algebra." Now his father was gone.

Vladimir's whole life lay before him, however. He was carried away by the fullness

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[5] Student unrest broke out in the autumn of 1887 in Moscow and spread to other towns, including Kazan. The student meeting mentioned here took place in the Assembly Hall of Kazan University on December 4, 1887. The students demanded repeal of reactionary university regulations, freedom to form student societies and the reinstatement of expelled students. In his report on the events the inspector of the university noted that Vladimir Ulyanov was "one of the most active participants in the meeting." When the demands were rejected, Vladimir left the university in protest. In a statement addressed to the rector on December 5 he wrote: "Since I do not consider it possible to continue my education at the university under the present conditions of university life, I have the honor to most humbly beg Your Excellency to issue instructions to cross me off the list of students of the Imperial University."

That same day he was expelled from the university and arrested. On December 7 he was deported to the village of Kokushkino in Kazan Guberniya and placed under secret police surveillance. This was Lenin's first period of exile; it lasted about a year.

[6] Alexander had now joined the revolutionary movement. He attended illegal meetings, took part in demonstrations and protests, studied the writings of Marx, and led workers' study groups.

[7] For complicity in a plot against the life of Alexander III, Alexander Ulyanov was executed in the Schlusselburg Fortress by hanging on May 8, 1887.

of being. His chin grew a reddish fuzz. He had trouble controlling his voice and spoke louder than he had before. When he walked, his shoes made more of a clatter. He laughed in sudden bursts, the way his father had, and sometimes he laughed so hard his stomach ached. He had already outgrown playing with the younger children, but they still clung to him and tried to drag him along with them. At times Vladimir was rude and snappy, and more and more often his mother was heard to say, "Don't be rude, Vladimir, and not so loud." Does this mean that Vladimir suffered less than the others that year? Alexander came home the summer of 1886, and when Anna asked, "How do you like our Vladimir?" he gave an evasive and disapproving reply. Alexander scolded Vladimir for being inconsiderate to their mother. But Alexander was then wholly engrossed in his own inner world, and he probably did not see or understand what his younger brother was going through. The adolescent was maturing, was becoming aware of his strength.

A DIFFICULT SPRING

The last year in high school (the 1886-1887 school year) brought Vladimir another blow. In spring, just before examinations, the news came that Alexander had been arrested. After the death of the father, the Ulyanov family's status in the town underwent a change. In the first place, life became harder. A pension was not a salary, and the children of a widow were not the children of a prominent local official. In the second place, Vladimir now felt a heightened sense of responsibility. The older children were well on the way to independence, but he, Vladimir, was still in his last year in high school. Behind him came Olga and the two younger children. Now Vladimir had to think seriously about them, not only about himself and his own future. February, blizzard month, came to the Volga country, and with it came the first feverish period of searching for books and textbooks needed for the exams. Vladimir had done a great deal of reading that winter. He was ready to take the exams at a moment's notice. His sister Olga also stood at the head of her class.

The news of Alexander's arrest came as a shock to Vladimir and Olga. Their mother left immediately for St. Petersburg to do what she could for her son. Their plump old nurse, Varvara, who was strongly attached to the family and particularly to Vladimir, the first of the children she had brought up —she fondly called him "my little diamond" well into his teens—was not at home either, having gone to visit relatives in the neighboring province, where she was born.

Left to themselves, the children felt more grown-up and more subdued. They had to keep a grip on themselves at all costs to prevent the younger ones from noticing that another misfortune had befallen the family, that, as the saying had it, "Troubles never come singly." The Ulyanov household that people had envied so much and for so many things—for Maria's skill as a housekeeper and in bringing up her children, for the children's progress in school, for the fact that there was no pretense or discord in the family and nothing to gossip about—this home was a place acquaintances now began to avoid. Olga, a proud girl with an open, attractive face and with deep-set black eyes like her elder brother's, went to take the examinations in her best school dress and behaved as though nothing had happened.

Spring was on its way, and with spring frightful news came from St. Petersburg. Alexander's situation was very grave. He was accused of an attempt on the life of the czar, and even the children in the family knew what that could mean.

Yet Alexander seemed so near, so young, so full of life. In his room in the attic, next to Vladimir's room, stood his neat test tubes, still warm from the touch of his fingers. A clean towel hung on a hook, awaiting its owner. In the dining room, bread was served on a handsome wooden platter with the word *Brot* in the middle, a gift Alexander had made for his mother. It was monstrous to think of him arrested and interrogated. Vladimir knew what could happen to his brother. His younger sister Maria—Manyasha, as everyone in the family called her —used to cry in her sleep and then wake up and call for her mother. But Vladimir had to keep his nerves under control. He had to walk along the street proudly, answer questions calmly, and ignore insinuations and veiled remarks. As though they had come to an agreement about it and as though the family honor depended on it, Olga and Vladimir maintained a calm and restraint that amazed their classmates.

The exams were continuing. It was May, the fragrance of lime trees was in the air, the maple beside their father's grave was in flower, and the buds on the lilac bushes in the public garden were swelling. Just as in previous years, Vladimir, with a slight frown on his earnest forehead, with his soft, childish lips, his reddish hair and his large head, walked to school along Moskovskaya Street, past the watchtower. But now he looked with new eyes at the barred window of the police station, through which he could see the pale faces of those arrested. He walked on, past the German church, past the home of one friend, then another, then a third. The famous town clock, presented to Simbirsk by old Count Orlov-Davydov, struck eight, and the sounds rang out loud and clear in the gentle May air so full of vernal fragrance. He passed the house of Count Tolstoy. His classmate Pyotr Tolstoy usually joined him if he walked to school, but that day he did not appear. And at the sight of Vladimir another classmate quickly turned the corner, his ears a bright red under his school cap.

THE EXAMINATION CARD IN HISTORY

The history examination being held in the assembly hall that day was very difficult. The teacher, a pedant, had made up a set of tricky examination cards. Many of the questions, the one about Charles IV, for instance, were not covered in the textbook, and to answer them one had to remember what the teacher had said or pore over encyclopedias and manuals. Many of the students were anxious to get some pointers from Vladimir, who always knew the answers, but this time they did not ask him anything. Once again he felt sidelong, persistent, disapproving glances, glances that were as tangible as an insect crawling up his back. He came into the room, loosened the belt around his books and wound it around his finger, as always. He sat down the way he did usually. This morning, however, he was very pale. The town had learned that his brother Alexander had been hanged. Vladimir had heard the news too. Some had even heard what he said after reading the news: " This is not the road to follow." Where to? And just which road was the one to follow?

In small towns everyone knows everything about everyone else. At the same time that Vladimir was enduring the glances of his classmates, Olga, deathly pale, was giving firm, clipped answers to the questions in an oral French examination in the girls high school. Girls are just as curious as boys, but they are kinder, and the friends of this girl whom everybody liked, who until a short time ago had been so gay and witty and who was now so aloof and pale, as though she had grown a head taller and become a stranger in their midst—the friends of this girl now softly pressed her hand.

Pyotr Tolstoy went up to the examiners' desk just before Vladimir. His fingers trembled slightly as he drew a card. His answer was halting, just barely satisfactory. Next Vladimir came up to the desk and drew a wonderful examination card. By some strange quirk the history teacher had made up a card of questions that dealt with the focal points of revolution and class struggle throughout world history. The first question was about the struggle by the plebeians of Rome for their rights against the proud patricians. There was also a question about Charles IV, the dread of all students.

Vladimir knew that this was not simply an examination in history. Before this council of concentrated, frowning men, before the curious and frightened eyes of his classmates, before the whole of the old and slumbering noblemen's town of Simbirsk he was taking an examination for the right to his future, the right to an education, to enter the university. He was like a plebeian of ancient Rome, standing alone on the hilltop. Yesterday he had been like everyone else in the class; today he was the brother of an executed revolutionary, an outcast, and he was aware, for the first time, how high the barriers were. Alexander had wanted to break down the barriers, to make all men equal. But was he the only one who had wanted to do that? Vladimir read the questions on his examination card: the struggle of the plebeians against the patricians, the Reformation, Bogdan Khmelnitsky, national hero of the Ukraine. . . . Not only his brother had wanted freedom; the whole history of the world was a history of struggle for freedom. Nothing, however, could come of a struggle waged by solitary individuals. No, that was not the road to follow.

Speaking with a burr, his voice, still half-childish, rang out calmly and clearly as he answered the questions. The history teacher, who was drawing curlicues on the sheet of paper in front of him, kept nodding his approval. The examiners exchanged glances. This student was answering so brilliantly that there was nothing to quibble about. The aging, portly principal, Fyodor Kerensky, whose son Alexander[8] was at that moment being tutored at home in preparation for entry into the first grade of this same school, mentally nodded in approval, too. It was risky, but there was no way out. They had to award the Gold Medal to Vladimir Ulyanov, who stood head and shoulders above the rest of the class.[9]

What were young Lenin's thoughts at the moment? Two lives important to him had already passed away before his eyes, two lives symbolic of Russian society. His dearly beloved father had taken the road of peaceful cultural work, had devoted himself body and soul to the education of the people and had never given a thought to revolution. He had lived to see his ideals trampled upon, to see the closing down of schools it had taken years of hard work to set up, to see a shroud of darkness descend over the faint light that had been illuminated in the villages. The road his father had taken led up a blind alley.

The road of terrorist acts, the road of isolated struggle against czarism his dearly beloved brother had taken also led to fruitless destruction.

No, these were not the roads that led to a better life for the people!

No one—neither in the family nor among his friends—ever saw Vladimir weep for his brother, whom he had so deeply loved since childhood. . . . But the tremendous self-control with which he took the graduation exams involuntarily comes to mind when one reads the dry police report of this youth who lost control of himself during the Kazan student meeting, how he dashed in a frenzy along the university corridors, his face red, waving his arms and shouting. The intoxicating genius of revolution gripped student Vladimir Ulyanov the moment he came into contact with a fiery, roused mass of human beings.

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[8] Alexander F. Kerensky (born 1881), prime minister of several cabinets of the Provincial Government of Russia in 1917. He has lived abroad as an émigré since 1918.

[9] In his graduation testimonial about Vladimir Ulyanov, Principal Fyodor Kerensky wrote: "Highly gifted and always diligent and neat, Ulyanov was at the head of his class throughout his years of study and upon completion of the course of studies was awarded the Gold Medal for the most meritorious achievement, development and deportment."

QUERIES FROM READERS

QUESTION: Do your teenagers use LSD or marijuana? Is the use of alcohol increasing or decreasing? (Cheryl Brockob, Wadena, Minnesota, and Thomas West, Huntington, West Virginia)

ANSWER: Our society is aware of the danger of drug addiction and fights every sign of it. The sale of narcotics is considered a serious crime, and a stop has been put to drug smuggling. No instances of the use of LSD or marijuana have been discovered in our country.

A few years ago the Soviet press reported a case of the use of narcotics in Siberia and explained the harm narcotics do to the individual and society.

Alcoholism is also regarded as a grave social evil. Nine crimes out of ten are committed under the influence of liquor, say statistics. The law provides for compulsory medical treatment of pathological drunkards and their re-education through work. The question of sending an alcoholic to a sanatorium for compulsory treatment is decided by a court on the basis of findings by medical experts at the request of public organizations, the person's fellow workers or state organizations.

Research institutes for mental diseases have special wards where alcoholics are treated. Effective new methods of therapy are being developed there.

For a number of years the per capita consumption of alcohol remained unchanged. When two free days a week became the rule, there was a rise in consumption, but it has now dropped, thanks to the educational work conducted by public organizations and the press.

Our retail stores promote the sale of beer, light wines and other beverages with low alcoholic content, and this has led to a decline in the consumption of strong liquor. The press and public opinion agree that further efforts must be made to fight alcoholism.

QUESTION: I would greatly appreciate something on economic planning. (Horace S. Meldahl of Charleston, West Virginia)

ANSWER: The State Planning Committee of the USSR is the country's main planning agency. It is directly under the USSR Council of Ministers. The State Planning Committee ensures a unified, centralized planning policy in all sectors of the economy. There are state planning committees in the constituent republics and the autonomous republics. Regions and territories have planning committees, and so does each city and each district in a city. Every enterprise has its planning department, and the workers and engineers take part in drafting plans.

The USSR State Planning Committee integrates the main development problems for separate branches of the economy and for the country's economic regions. It draws up plans and supervises their fulfillment. Special attention is given to the timely launching of new production capacities and to building up new industries. The State Planning Committee is responsible for preventing disproportions in the economy.

The current economic reform has resulted in many changes. Enterprises have more freedom of action. The only indicators handed down from above are the volume of output to be sold; the main assortment of goods; the amount of the wage fund, net profit or profitability of the enterprise, payments into the state budget and budget appropriations for the enterprise. All other plan indicators are established by the enterprises themselves.

Special attention is now being paid to long-range planning, which requires accurate technical substantiation on a strictly scientific basis. Electronic computers are more and more being employed in this connection.

QUESTION: A leading publisher of maps and atlases in the USA refers to the Byelorussian SSR as the White Russian SSR. Which is correct? (Clifford C. Curran, Windsor, Ontario, Canada)

ANSWER: The name in your atlas is a word-for-word translation. We, for instance, don't translate New York as Novy York—*novy* is new in Russian. Nor do the French say Nouveau York. So Byelorussian SSR would be correct, even though the first part of the word *byelo* comes from *bely*, the Russian for white. Incidentally, long ago this place was called Belaya Rus, or White Rus. There are various conjectures why. It could have been because of the clothes and the blond hair of the local folk, or, perhaps, inhabiting the backwoods and the marshes were free people who were ignorant of either feudal oppression or the Tatar yoke. There was a time when *bely* could have meant that too.

QUESTION: Do you think other planets could be a source of food and other materials? What about the sea? Do you have a program to study it? (Mrs. Joseph Cole, San Diego, California)

ANSWER: While it is unquestionable that space contains many mysteries, so far we cannot scientifically consider the planets of our solar system a tangible source of organic raw material—even earthlike Mars and Venus. True, some scientists do believe there is some cycle of organic life on Mars, but not to the extent written up in science fiction. They mean only microorganisms whose adaptability to life in any circumstances is truly unique.

The sea, of course, is quite another matter. Indeed, it is an unlimited treasure-trove for future economy. We mean, first, power resources that could be harnessed by tidal stations; second, chemical resources, as vast amounts of elements are dissolved in sea water; and third, biological resources, the countless species of fish and other denizens of the sea and also weeds, of which man is so far using only one per cent.

We have an oceanographic commission of the USSR Academy of Sciences and also a scientific council for the study and use of sea resources under the State Committee for Science and Technology. Both are conducting extensive oceanological research. For research expeditions scientists have such specially equipped ships as the *Academician Kurchatov*, *Zubov* and *Voyeikov* and the nonmagnetic schooner *Zarya*. It stands to reason that the research program envisages the food resources of the sea, too. Besides this, ichthyologists go out with fishing fleets.

QUESTION: Do Soviet citizens, who are mostly apartment dwellers, manage to set up woodworking shops? Do they have "collective set-ups"? What are your most popular hobbies? (Andrew J. Foglia, Brooklyn, New York)

ANSWER: First, a large proportion of the population in villages, suburban communities and smaller towns live in privately owned houses and have special sheds for carpentry, metalworking and the like. Many city dwellers have *dachas* or garden plots. Most apartment dwellers with the kind of hobbies you mention make use of space specially provided by the house management or one of the rooms in their apartment—which they can partition off as they see fit.

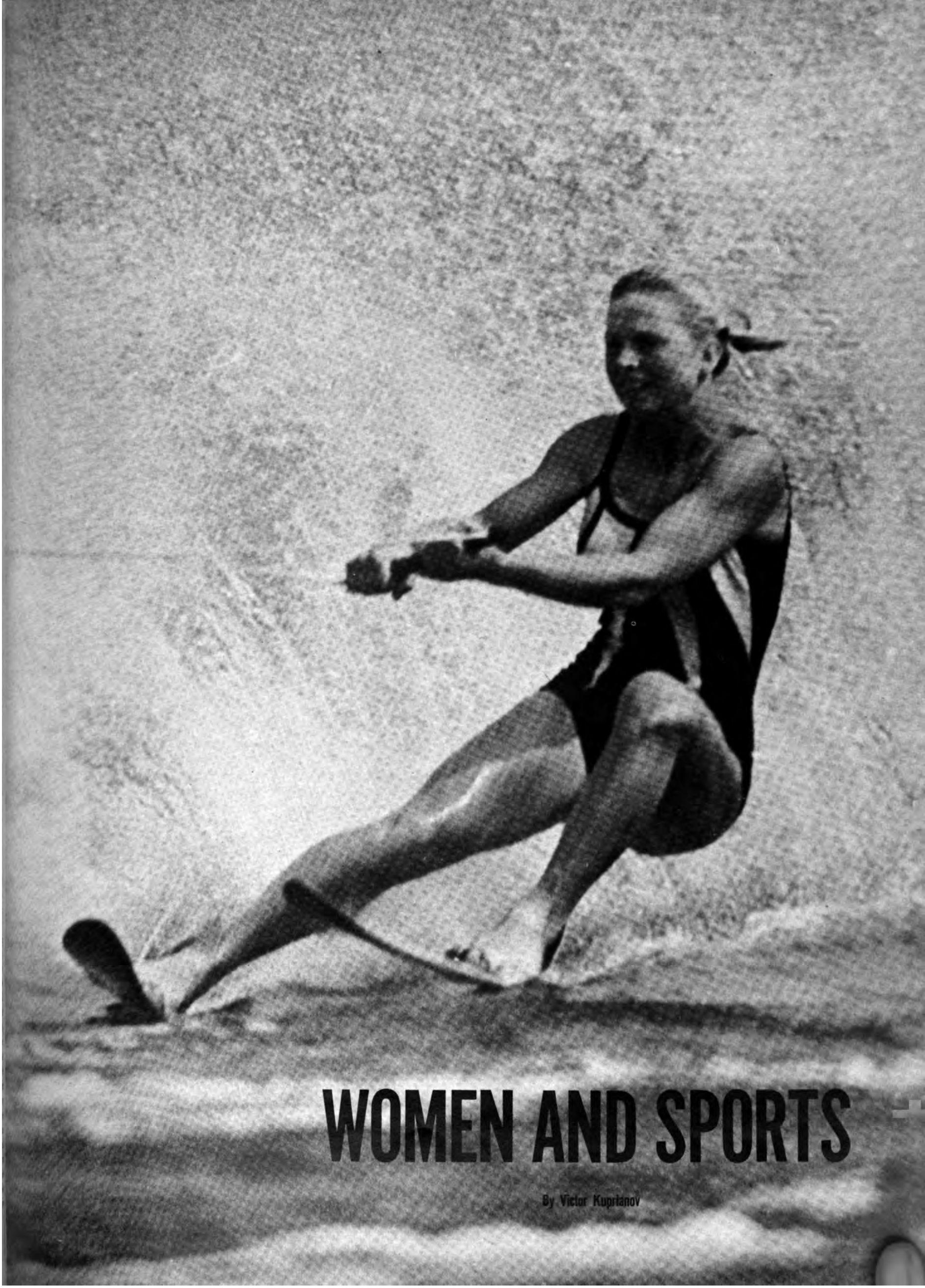
It is easier for the small fry, who have hobby groups at the district Young Pioneers house or where they live. The house management provides the workshops and tools. Incidentally, nowadays grownups, too, are setting up hobby circles.

Though woodworking is a rather common hobby, we would say photography is even more popular. The periodical *Sovetskoye Foto*, which is put out primarily for the professional, has column space for amateurs, too, furnishing advice, answering questions and evaluating snapshots taken, reprinting the best by way of encouragement. Among other hobbies there is music, hunting, angling, book and stamp collecting—in short, a range truly impossible to list.

QUESTION: Please tell me how the Berezina River looks today at the place where Napoleon made his horrible crossing in 1812. I would also like to know how the historical battlefield of Borodino looks today. (Elwood Freedle, Winston-Salem, North Carolina)

ANSWER: After the Berezina crossing of November 1812 at the village of Studenka near the town of Borisov, the French Grand Army lost 30,000 men and ceased to exist. Today at this spot, on the Berezina's right bank, there is a memorial in honor of Russian soldiers buried in the common graves that rise in terraces to the granite monument.

The Battle of Borodino, which took place on October 26 (Old Style), 1812, bled the French Army white on the approaches to Moscow and marked the turn of the tide. The remnants of earthwork fortifications can still be seen on the field where this bloody 15-hour battle was fought. Also displayed are specimens of the artillery used at the time. There are likewise memorials in honor of the gallant Russian soldiers. A good view of the field is available from the top of the mound where General Nikolai Rayevsky's famous battery stood, what Napoleon's officers termed a "fateful" and "fearful" redoubt. The slab of granite here pays homage to the gunners and marks the grave of Borodino hero General Pyotr Bagration, who was mortally wounded during a counterattack. But a complete picture of the battle can be gotten from the Borodino panorama exhibit in Moscow.



WOMEN AND SPORTS

By Victor Kuprianov

ON THE EVE of the New Year the Soviet Union's leading sportscasters got into a huddle to decide on the 10 best athletes of the year. They came to the painfully unanimous decision that only one woman deserved a best athlete award —Ludmila Belousova. With her husband, Oleg Protopopov, she holds the European, Olympic and world titles in figure skating. Otherwise there wasn't a woman athlete who passed their scrutiny.

The ladies were indignant—until they learned that women sports scribes had voted along with the rest.

There was a time when Soviet women athletes brought home honors and medals with a regularity that made it uninteresting. There was always a clamor when the USSR team asked that the score in dual USA-USSR athletic meets be based on a combined team count. American columnists called it a plot to ensure a Kremlin victory. The more caustic suggested that the girls pulled the men out of many a hole.

But then things began happening. Performance abroad visibly improved. The Soviet Union lost its hold on speed skating, skiing, athletics and so on down the list. Yet everyone still remembered that in Innsbruck Lydia Skoblikova won four gold medals in speed skating.

In track and field Soviet women athletes gradually slipped out of the headlines.

What happened?

Various explanations have been offered.

One group maintains that nothing happened, that an unprecedented boom in distaff sports all over the world has just made it harder to win. Especially with the old results and techniques.

Another group claims that modern life leaves no room for sports. Grieved one leading national coach, "The modern girl will spend hours on her hairdo or her dress but she won't spend hours training."

Still others claim that with the tremendous progress in techniques it takes more than natural ability to win medals. The coaches, they complain, lag behind the day and age.

Coaches find that they do not always see eye to eye with parents. Parents encourage their young to go in for gymnastics and figure skating to build the body beautiful. But they frown on other sports which, they fear, build up unshapely muscle.

Soviet girls, some coaches complain, are not as dedicated to sports as they once were. Families get priority now. It was different a couple of decades ago.

Anna Dmitrieva, one of our top-ranking tennis stars, is a case in point. She zoomed up while yet a girl with commendable showings at Wimbledon, and later played at Forest Hills in a bid to expand American-Soviet tennis contacts. Just when she had reached the top and was well on the way to international honors she got married and took time out for a baby.

"I'll be back," she told her fans. The coaches wondered where a replacement would come from. Luckily a miss from Kiev turned up. Galina Baksheyeva won the Wimbledon girls' tournament twice. Today she is top-seeded. Every time she goes out to a dance or on a date the officials get palpitations. What if she too decides on a family?

Another young lady, Tiiu Kivi from Estonia, won the hearts of the fans and the coaches with her fine style and brilliant victories. She even won the national title. While coaches were wondering whether she was going to be our next top bid, Tiiu won the heart of one of her teammates and instead of competing in the Zigmund Memorial, a major winter fixture in tennis, she got busy with marriage arrangements. With a charming smile that melted her fans and froze the coaches, she said: "Family comes first. There'll always be time for tennis."

Then the swing back to Anna Dmitrieva, who staged a remarkable comeback. She even started winning international fixtures. But then she announced to a startled sports world that she had decided to have another baby. And she did.

This is a problem the coaches face in all sports. Nowadays whenever women' teams play—basketball, volleyball, or whatever else—there are two front benches. One for the players and subs, the other for the players' children. Mummy wouldn't think of playing without the family around to watch!

Figure skating was particularly hard hit last year. Some of our leading pairs withdrew from competition, which led to much speculation. While Belousova and Protopopov may be good for another world title, they get no younger as the years roll by. Were there any replacements in sight? There were. Tatyana Zhuk and Alexander Gorelik were the world's second best. Everybody figured this steadily improving duet for the next champions. But then Miss Zhuk married and this year was not available when she was needed most. Now the coaches are wondering: Who and what next?

The moguls are doing their best to encourage distaff sports. Not only are facilities and incentives provided, the rules for many team sports stipulate that women's teams be fielded on a par with the boys.

In basketball and volleyball, clubs are required to field women's teams as well. In tennis the rules are even stricter. Not only must every club competing in a championship meet enter women's team alongside the men's, it must also enter junior and teenage contestants of both sexes.

In track and field, national tournaments for girls are planned. The idea is to attract as many girls as possible. The present official count shows that over two million girls take part in track and field competitions regularly. Insufficient, say the coaches; consequently a countrywide campaign has been started to get more girls interested. When can we expect results? By the 1972 Olympics, predict the coaches.

While families may interfere with sports, most athletes combine both. In Mexico City pretty Alexandra Zabelina won a gold medal for fencing. She also won a gold medal at the 1960 Olympics. Alexandra at the age of 31 majors in history and will graduate in a few months. She has a son of five and does a fine job of combining family, study and sports.

Zabelina's athletic career is typical. She first went in for fencing at the age of 14. The Dynamo Club in Moscow offers the same facilities to all. No charge for equipment and coaching, the club is glad to have you. At 18 she was included in the national team and has been winning medals ever since. In Mexico City she was the oldest member of the team but you wouldn't have thought so. She blended perfectly with the rest of the girls who were ten years her junior. Alexandra Zabelina is admirable proof that youthfulness and sports go hand in hand.

The gold medal for the kayak singles in Mexico City was won by kindergarten teacher Ludmila Pinayeva, a youngish 32. She first went in for the sport when she was 21, found it a fine way to keep fit and a nice way to win Olympic medals (gold in 1964 as well).

When Ludmila Pinayeva joined the trade union sports club at 21 no one told her she was too old to become an Olympic champion. Nobody is ever told that. The motto here is: You're never too old to start. For that matter you're never too young to keep fit.

A girl who failed to win a best athlete award, but who made all the headlines was Ludmila Zharkova, a 16-year-old schoolgirl from Sverdlovsk. Many fans felt that she deserved at least an honorable mention. To begin with, she is very easy to look at. Secondly, she is an excellent sprinter and helped the relay team win the bronze medal in a race in which the three medal winners (USA, Cuba, USSR) all broke the listed world record. She is a dazzling blonde with ribbons in her braids.

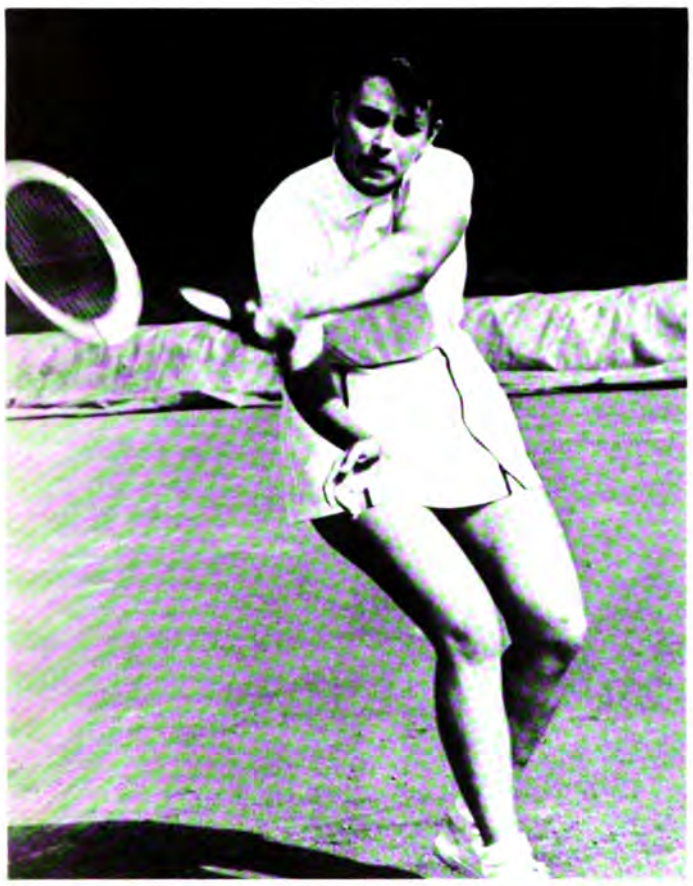
Her ambition was ballet dancing. Then she suddenly took a liking to English and began studying the language seriously. At the Junior Games in Kiev she even acted as an interpreter for a group of visiting Australian youngsters.



Student on her winter vacation joins a skiing class. Novice courses attract many to the Caucasian slopes.



Presenting the winners: This basketball team—USSR's national champions—is also the holder of the European Cup.



Anna Dmitrieva, a top-ranking tennis player, has tried to combine children with a sports career.



Medalist's form: Returning to gymnastics, Zinaida Voronina earned silver medal in Olympic over-all competition.

In Mexico City she practiced her English and got folks to thinking she would become a translator. But then she decided to be a doctor like her mother. She will continue running. The coaches count on Miss Zharkova and other, as yet unknown, youngsters to return the Soviet Union to winners' row in track and field.

The Soviet girl is as much a part of the jet age as her male counterpart. Girls here are enthusiastic about skydiving and flying. And after Valentina Tereshkova showed the fair sex that there was room for them up in space as well, there is no keeping the girls down on earth.

Mountaineering is another sport that is rapidly growing popular. More and more girls are climbing. They even arrange all-girl ascents of Mount Elbrus in the Caucasus. This is the highest peak in Europe and the place to visit for a look at girl mountain-climbing instructors.

Motorcycle and automobile racing also attract the young ladies. That is the "in" thing for the speed set. A little more surprising is the fact that girls go in for horse racing. Maria Burdova is one of the best known women jockeys. She has competed successfully in Europe and won prize money in a number of countries. She created quite a stir in Paris when the Soviet Union sent her to ride in an all-male fixture. The stewards hemmed and hawed and decided there could be no going back on the rules which barred women from the track and stables. The stewards will obviously have to reconsider, for Maria Burdova is starting a movement that bids fair to sweep the globe like a tidal wave.

One thing that has customs officials wondering whenever a Soviet women's team arrives on tour is the load of textbooks the ladies bring with them. Most Soviet athletes are students, and competition or no, exams are waiting to be taken. Tennis star Galina Baksheyeva had to forego a major tournament appearance because of college exams.

When that happens the coaches do not complain. In fact, they all hold the view that the "intellectual" athlete is the ideal athlete and they even encourage their charges to study while in training or on tour.

Coaches are going all out this year to get girls into sports. We expect that when the sportscasters convene at the year's end for their best athletes list, we'll be doing considerably more looking at the distaff side.



Mrs. Levi Ankeny and others from the People-to-People group were interested in freedom of worship in the Soviet Union. At Krasnodar Cathedral.

How did you like the trip? Max Patternot's eloquent comment when he was asked the question.

"We shall long remember your cordiality and hospitality"

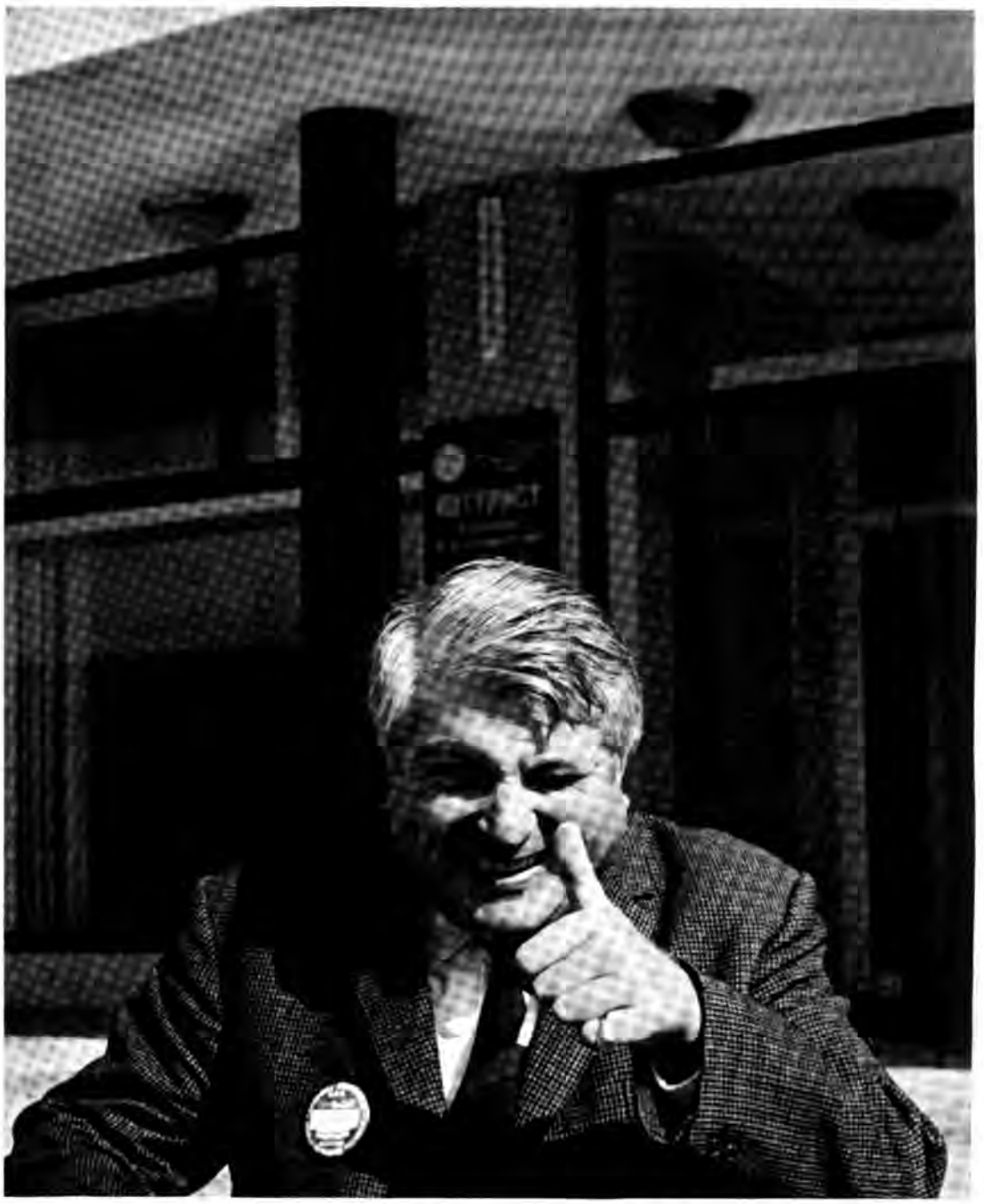
THAT WAS CECIL HAGEN'S parting comment. He led a group of Washington and Oregon farmers on a tour of the Soviet Union under the People-to-People Program. The program aims to have American tourists meet and talk with Soviet people who work at the same trade or profession.

There were thirty people in Mr. Hagen's group. Though of different ages, different incomes and different views, they were all grain growers or worked at closely related occupations. They toured the Kuban, an old Russian grain-growing area, visited Krasnodar, the regional capital, and then went to the Kavkaz Collective Farm to look it over. A moderately sized and diversified farm, it has 25,000 acres of wheat, sugar beets, corn and other crops. Its livestock sections include 5,000 cows and 7,000 hogs.

The choice of Krasnodar was probably influenced by Fred Fax. Mr. Fax is from Oregon, and he had already been to Krasnodar, but he wanted to see it again. He strolled down the city's green streets looking for familiar places. Mr. Fax said that after his first visit to Krasnodar, he found himself singing his favorite song "I Left My Heart in San Francisco," substituting Krasnodar for San Francisco. That's when he decided on a second visit. He commented on how greatly the city had changed. It had spread out. The houses looked fine, and the girls were even more beautiful than he had remembered.

Markham Baker, a former 4-H club leader who has had occasion to play host to farm delegations from other countries, recalled Mark Twain's words to the effect that travel is disastrous for all sorts of prejudices, intolerance and narrowness of view.

Mr. Hagen gave that statement relevance to the trip. Speaking of his impressions, he said that when he looked out of the bus window at the scenery en route to the collective farm, he sometimes forgot there were 6,500 miles between him and his native American Northwest—the Kuban landscape looked so much like home. And he emphasized not only the landscape. "You grow the same crops, you have the same cows grazing, you have the same machines operating and the same weeds as we do in the state of Washington." He was glad to note that the differences between American and Soviet farmers were not as great as he had thought. "What explains it is that we do the same job—we both grow grain, without which there is no life. At any rate, as I leave this Kuban collective farm, I feel that I am your friend, and I believe that I am leaving here many of my good friends."

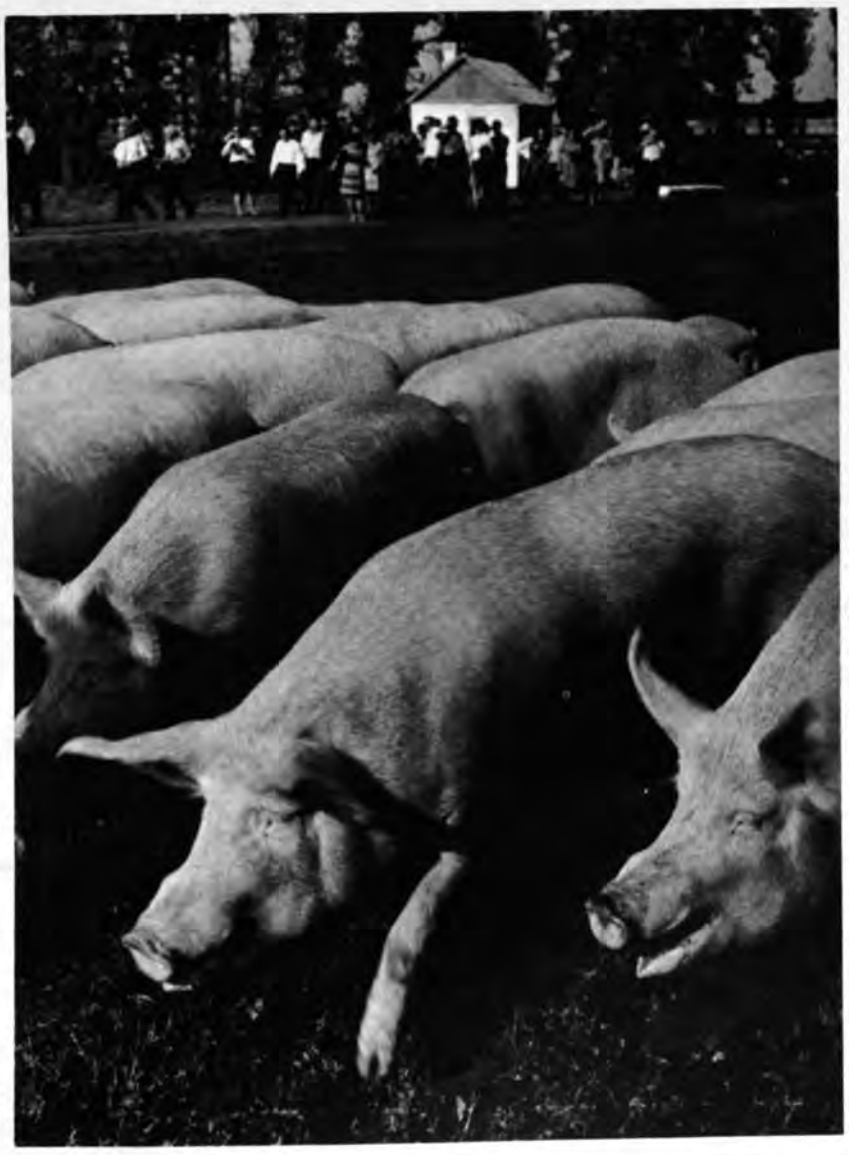


U.S. FARMERS IN THE SOVIET WHEAT BELT

Photographs by Leonid Bergoltsev
Soviet Union Magazine Correspondent



Cecil Hagen's camera was hard at work all through the trip. He led the touring group of thirty Oregon and Washington farmers.



Soviet or American, they represent hours of farmers' work.

This middle-sized farm the group visited raises wheat, sugar beets and other crops. The machine is a beet harvesting combine.







Breaking the language barrier, Markham Baker found, is not hard when people do the same work and each wants to know how the other does his.

farm also raises fodder corn for its
00 cows and 7,000 hogs. This familiar
ht made Mrs. Dewey Beeks, Cecil Hagen
nter) and Charles Quinn a bit homesick.



Lunch and more shop talk: about crop sizes, milk yields, weed fighting and fertilizers. Cecil Hagen is showing his hosts several of the farm magazines which he used to edit.



Cecil Hagen, speaking for the group, said they were leaving behind many good friends at the Kuban farm. This very cordial farewell bears that out.

This plow of a new design had a number of the men trailing after as it was put through its paces for their benefit. They checked and made a camera record of almost every aspect of its performance: whether it handled easily, timing, the depth of the furrow it cut and how straight it was.



AROUND the COUNTRY



LIGHTNING INCREASES CROP YIELD

Artificial lightning can increase crop yields noticeably. Experimenters in Alma-Ata, Kazakhstan, placed grains of wheat for some seconds before sowing into the area of so-called "crown discharge." The treatment by artificial lightning resulted in an additional yield of 267 pounds of wheat per acre.

It was also found that the grain produced after treatment with artificial lightning has a higher absolute weight and protein content.



MAN-MADE GEMS

The Research Institute for the Synthesis of Minerals in Alexandrov, a town near Moscow, has a display of rubies, diamonds and rock crystal. These strikingly beautiful precious and semiprecious stones were not created by nature but by the institute's scientists.

FAMILY HOBBY

Vladimir Osadchenko, instructor at a Moscow specialized secondary school, was an avid stamp collector in his childhood. In youth his interest waned somewhat, but he caught the bug again later, probably from his son Nikolai, who started serious collecting at the age of 10. This 14-year-old is considered an experienced philatelist now. The family collection contains some unique specimens, for instance, the first Russian stamps issued in 1857-58. Father and son also collect envelopes and postcards.

Nikolai Osadchenko's collection, "How Stamp Collecting Helps the Study of the History of the Motherland," won a gold youth medal at the All-USSR Philatelic Show dedicated to the fiftieth anniversary of the Young Communist League. This is only one of several trophies won by the family team.

236-CARAT DIAMOND

Until the fall of 1968 "Stalingradsky," weighing 166 carats, was considered the largest diamond ever found in our country. The record was broken by diamond prospectors in Yakutia. They found one weighing 236 carats—more than 47 grams. The giant diamond is classified as a so-called technical stone.

MONKEY TOWN

The second monkey nursery in the country (the first is in the city of Sukhumi, Georgia) will be opened in Adler on the Black Sea coast of the Caucasus. The site, occupying a territory of 250 acres, consists of terraces alternating with steep rocks. The borders of the "monkey world" will be covered with a high metal net inclined inward to the nursery. Not far from the nursery will be houses for the staff on a 50-acre area.

RUSSIAN FOR FOREIGNERS

Students from many countries are enrolled at the various college-level institutions in the capital. Most of them begin their studies in the preparatory division of Moscow University, where they learn to speak Russian. In the fall of 1968 some 300 of these young men and women, the majority from countries in Asia, Africa and Latin America, used the university's lingaphone rooms.

SEA-BOTTOM RESTAURANT

Gifts of the Sea will be the name of an underwater restaurant to be built in Sochi, a resort city in the Northern Caucasus. It will be the first restaurant of its kind in the country. On the beach nearby will be a shop for the sale of goods produced by the sea, as well as a large pier for excursion launches. The restaurant will seat 300, and its large windows will give diners a close view of underwater life.





ATOMIC POWER PLANTS FOR EXPORT

The German Democratic Republic, Hungary, Bulgaria and Czechoslovakia have placed orders with the Soviet Union for atomic electric power plants. Soviet specialists will design and help build them. A large atomic power block is presently being built with Soviet engineers assisting near Bratislava in Czechoslovakia. An atomic electric power plant built with Soviet help began generating current in the GDR in May 1966. Another and more powerful project to supply electricity to the northern parts of the GDR is now in the design stage.

SIBERIAN MUSKETEERS

A children's recreation club named Victoria was recently opened in Science Town near Novosibirsk. At this Siberian club 300 girls and boys aged seven to fifteen learn to fence, swim, play basketball and volleyball. Besides coaching, the club offers lectures on the history of arms and French and music lessons.



CRAFT SCHOOL

This school can really be proud of its graduates, for no artistic enterprise in Moscow could have managed without them. The Moscow School of Artistic Crafts recently marked its twenty-fifth anniversary. In the quarter-century it has produced about 1,500 jewelers, painters of fabrics and embroiderers.

BEST JEWELERS' WORK

The best the country's jewelers have created recently is on display at the Central Board of the Jewelry Industry in Moscow. The most valuable exhibit is a casket gilded inside made by Moscow craftsmen working in the old Russian style. It took 44 pounds of silver and 3,000 semiprecious stones—topaz and rock crystal—to make the casket.



MARRIED CRAYFISH

A crayfish caught in Komsomolskoye Lake near Leningrad had a shell with a puzzling glitter. Examined closely, the crayfish was found to be wearing a gold ring—a real wedding ring—around what passes for its waist. When the crayfish was young, it must have crawled into a ring that someone had dropped into the lake.



EXOTIC-FISH COLLECTORS

Neptune, a club of exotic-fish enthusiasts, is very popular at the Serp i Molot (Hammer and Sickle) metallurgy plant in Moscow. The club's hundred aquariums, with more than a hundred varieties of exotic fish, occupy two large laboratories. Neptune club members exhibit at many of the shows held in Moscow and other cities.

A large permanent exhibition of aquarium fishes will soon be opened at the plant's palace of culture.

ELECTRONIC IRRIGATION

An automatic device installed at the distributing center of the Petrovsk-Anastasyevsk rice irrigation system in the Northern Caucasus replaces 200 workers. An electronic apparatus in the control office calculates the amount of water required for a certain section and controls the opening and closing of the sluices.

SOPHISTICATED INSTRUMENTS

Many sophisticated methods and instruments are presently used in archeological digs. Geophysical methods make it possible to search for historical monuments without breaking the surface of the soil, thus cutting the amount of earth work to a fraction. An important advantage of geophysical prospecting is that the archeologist himself can decide how deep he wants to investigate. This is especially important when the layer-by-layer method of searching for ancient relics is used, the archeologist can examine considerable areas with as much accuracy as he thinks necessary.

Geophysical methods and instruments were used in archeology for the first time on the neolithic camp site Vyun near Leningrad. Many thousand years ago our ancestors from the Valdai, center of the European part of the country, hunted here. They left fragments of pottery, stones and the coals of ancient fires, a cultural layer that was covered by soil in the course of time. Archeologists had to determine the borders of the cultural layer. They used a magnetometer, an instrument that is very sensitive to loadstone contained in ceramics. Observing the deviations of the magnetic indicator, they were able to determine the outlines of the layer and establish the borders of the camp site.

Not far from the city of Odessa are the ruins of the ancient Greek town of Olvia. The part of the ruins near the Black Sea coast is under water. Archeologists asked seismic prospectors to help them. Echo sounders were installed on board a ship. The acoustic signals reflected from the bottom of the sea were received by recording devices which drew diagrams of the smallest irregularities of the sea bottom. The projections on the diagrams marked the presence of houses and streets under the water. By comparing the diagrams, the scientists were able to re-create a picture of the flooded part of the city and thus find out where to send aqualangists for a detailed examination.

TRAWLER IN SEARCH OF STORMS

An unusual ship set out in the autumn of 1968 from the Baltic port of Kaliningrad for the stormy latitudes of the North Sea and the Norwegian Sea. The name of this fishing trawler of the catamaran type is *Experiment*, and so far it is the only one of its kind in the world. It has a number of important advantages over other fishing ships that ply the world's oceans. Its deck area is three times greater than a single-hull ship's, it has two patent slips for lowering and lifting fishing equipment, and the special design of the deckhouse permits all-round observation. The catamaran is designed to catch fish with trawls, with purse nets and by electric light. It has good maneuverability and other seafaring properties and can be used in practically any part of the ocean.

The *Experiment* has undergone a whole complex of operational tests, and its fishing equipment has also been tested. The ship passed all its Baltic tests with honors. But before starting mass production of such trawlers, it was decided to see how the *Experiment* stood up to the storms of the severe latitudes of the North Atlantic.



SIBERIAN SPA

Some years ago agriculturist Nikolai Taskin quite by chance discovered mineral water springs near the village of Kozhanovo in Krasnoyarsk Region, the southern part of Siberia. A field expedition verified the fact that there were large deposits of mineral water very similar in composition to the Narzan water from Kislovodsk in the Caucasus, which is widely used to treat gastric diseases. Thousands of people from all parts of the Soviet Union and abroad visit the Narzan health resort annually.

A health resort like it is being built in Siberia. It will have room to treat 2,000 people.



SMALLEST NATIONALITY

The Nganasany number only 700. They live in the center of the Taimyr Peninsu'a, the extreme northern projection of the Asian continent.

According to some scientists, the ancestors of the Nganasany were among the tribes inhabiting the southern part of Siberia. Other scientists believe that their ancestors also came from Eastern tribes. Which theory is nearest the truth has not yet been established. But one thing is clear: The language spoken by the Nganasany is not understood by any of the many nationalities that live in the Taimyr—the Nenets, the Evenks, the Dolgans, and others.

Lost in the great stretches of tundra frozen 263 days a year, the Nganasany were for a long time isolated from the world. The October Revolution changed the face of this remote region as well as the life of the Nganasany. Tractors, steamers and airplanes appeared in the tundra. Expert hunters, reindeer breeders and fishermen, the Nganasany joined producers cooperatives.

BEAR DEBUT

The famous Pyatnitsky chorus was presented with two bear cubs on a summer tour of Siberia. The singers gave one to the zoo and decided to make an actor of the other.

Moscow has a small menagerie very popular with children. Vladimir Durov, a famous animal trainer and member of a well-known circus family, founded the menagerie, and it is named for him. Anna Durova, his daughter, runs it now. The menagerie has its own animal theater, and the bear cub was placed there.

A while ago members of the choir visited the theater to see the debut of their former pet. He made a big hit.



ELECTRONIC GEOLOGIST

Formerly geologists could determine the quality of ore extracted from a prospecting borehole only after laboratory analysis. Now it is done almost immediately with a borehole ferrometer designed at the Institute of Geophysics of the Ural Branch of the USSR Academy of Sciences. The small apparatus is lowered into the borehole during boring and it precisely determines the iron content of the ore. Cables lead from the apparatus to a recording device, and the deviations of the indicator show whether the ore is rich or poor. The principle applied here is the relationship between the magnetite content of the ore and its permeance.



RIVER CLEANED UP

The Severodonetsk Chemical Plant in the Donbas has a complex of devices for the biochemical purification of polluted water coming from the city and its many factories. The devices can treat 112,500 cubic yards of water a day and remove 98 per cent of the polluting toxic substances.

Different algae, fish and other creatures live and breed in the plant's experimental ponds filled with purified water. Pollution specialists from time to time net the carp in these ponds to see how they grow. In two years tiny fry just over one inch long turn into big fish a foot and a half long weighing six to eight pounds. The fish feed exclusively on the natural food found in the ponds. This testifies to the fact that our chemists have cleaned up the Northern Donets, the largest fresh-water basin of the Donbas. The water will become even purer and clearer when ozonation, a new and more effective method of sterilizing water, is used instead of chlorination.



TAJIK DIONYSUS

A bronze decoration from a warrior's shield dating from the first or second centuries A.D. was found by schoolchildren on the bank of the Dushanbinka River in Dushanbe, the capital of Tajikistan. The figure of the Greek god Dionysus on the decoration testifies to the close ties between the ancient civilizations of Central Asia and Greece.

PICKING MUSHROOMS WITH A LADDER

People usually look for mushrooms at the foot of trees. But the people of Sochi, a health resort on the Black Sea, gather them from the tall silver poplars that grow along the streets. With time a considerable amount of soil has accumulated between the branches of the trees. Mixed with decaying bark, it makes a bed for mushrooms whose spores are blown in by the wind. The high humidity under the thick foliage helps them grow.

Mushroom pickers in the streets of the resort are a common sight. Besides a basket, they carry a ladder.



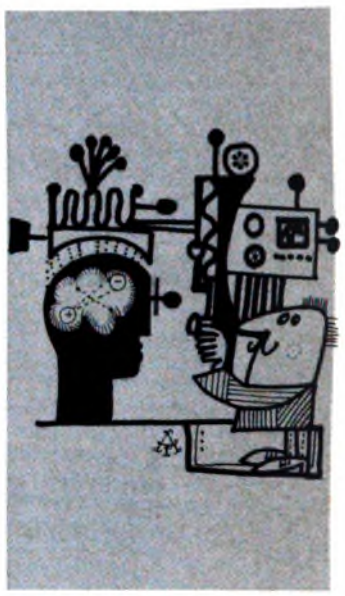
AN OLYMPIC VETERAN

At the Olympic Games in Rome experts called Absinth "the handsomest horse in the Olympiad." Four years later Absinth successfully competed in Tokyo, and recently he returned from Mexico where he won a silver medal for the Soviet team.

The horse, an Akhaltekian, is 17 years old, a venerable age. International rules say that a horse can participate in only three Olympic contests, so Absinth will soon retire for a well-earned rest.

"SEVENTH HEAVEN" IN MOSCOW

Observation platforms and a restaurant were opened last autumn at the Ostankino television tower in Moscow, presently the highest in Europe. A year before the restaurant opened, *Vechernyaya Moskva (Evening Moscow)* announced a competition to name the restaurant to be built 1,106 feet above the ground. The newspaper received more than 5,000 entries. The jury chose Seventh Heaven, a name suggested in 150 letters. The final winners were chosen by lot. They were among the first diners at Seventh Heaven.



TUMOR DIAGNOSIS BY COMPUTER

Diseases of the brain are the most difficult to diagnose and treat. In making a diagnosis, doctors usually analyze the results of prolonged clinical investigation and trust to experience. But even a great deal of pooled experience does not guarantee against mistakes.

The Clinic of Nervous Diseases and Neurosurgery of the Rostov Medical Institute (Northern Caucasus) has worked out a mathematical method of diagnosing brain tumors. An electronic computer, which is fed information from a case history, indicates how typical the collected complex of symptoms is of a certain disease. In other words, the cybernetic doctor copies the logical reasoning of a physician in making a diagnosis. The neurosurgeon's electronic assistant has been used 107 times for diagnosing brain tumors. In 104 cases it made a perfect diagnosis, confirmed by the operation which followed. In only three cases, owing to lack of information, was the computer not able to answer the surgeon's questions.

AROUND the COUNTRY

IN VINO VERITAS!

BY KIM GOSHEV

WINE EXPERT

GRAPES AND WINE are as old as the human race. A cluster of grapes has always been a symbol of plenty—the reason, perhaps, that the grapevine is stamped on old coins. In Russia grape wine has been known for more than a thousand years. Prince Oleg conquered Byzantium and brought back to Kiev, besides precious stones, gold and rich fabrics, the gifts of Bacchus. Later, the princes and boyars drank wine made in the Genoese colonies in the Crimea. Legend says that Prince Vladimir of Kiev, who is credited with converting Russia to Christianity in the year 988, had rejected Islam because it forbade drinking wine. Czar Alexei, father of Peter the Great, was also fond of grape wines. On his orders, wine was imported from Italy tax free. The czar had his generals cultivate large vineyards along the lower reaches of the Volga. Nor did Peter the Great forget about wine among his other concerns. He tried to instill a respect for sobriety in both the gentry and commoners. His medal, "For Hard Drinking," weighing eighteen pounds, was hung round the necks of those who went to jail for imbibing more than was good for them.

Parade of Wines

But to move on to our day, let us review Soviet wines by grade and rank. In parade uniforms, naturally, the bottles all wearing their medals and their gold and silver cockades. Of the 600 Soviet wines, 200 are prize winners of competitions at such wine capitals as Lublin, Budapest, Sofia, Bratislava, Paris and Brussels.

There are a great many grape wines. And, as with men, they follow a strict hierarchy. There are wine-patricians and wine-plebians.

The patricians are the best brands and are hard to make. First of all, they require particular varieties of grapes. Secondly, they must be cellar aged for no less than two years. Each of these wines has its own home, and it never migrates. For instance, our Riesling Zolotaya Balka is produced by only one collective farm near Balaklava, the Crimea.

It is not difficult to distinguish between the best and the ordinary brands. If the label lists the wine's year of birth, it is a best brand. Those older than six years are promoted to the ranks of collection wines.

Wine, like the human being, has a youth, a coming of age and an old age. It goes through a complex process in maturing—the taste and bouquet ever improving until it matures. Beyond that point—oh, inexorable laws governing life—old age sets in and death. Most dry wines have a short life, no more than five years. But ports and Madeiras retain their glowing health for a hundred years and more.

The main groups of wine are table, fortified, dessert, sparkling and aromatic. Cognacs occupy a place apart.

What Did Louis XIV Die of?

The properties of wine have been studied for a long time. They are rich in vitamins, beginning with that most popular vitamin—C—and ending with that rarer one—P-P. Wines help preserve strength. They normalize body functions. There is even a form of medical treatment based on wine.

The red and Kakhetian white wines, fermented with the grape skins, contain a great deal of tannin. One can tell the tannin is there by the astringent taste. It keeps the blood vessels elastic.

Red wines of the Cabernet and Saperavi grape species are also rich in tannin and are often prescribed for gastrointestinal ailments. Wines are generally rich in natural antibiotics. You can judge their strength from the fact that bacteria die in dry white wine within thirty minutes. Wine will sometimes be used when medicines do not help. Nothing but champagne, for instance, will stop a persistent retching attack. Sparkling wines restore the appetites of fever-plagued consumption patients. Hot red wine with sugar is an excellent aid in fighting the flu and pneumonia.

Legend has it that Louis XIV bought champagne at a very high price from the maker Dom Pérignon, a Benedictine monk of the Hautevillier Abbey. But as soon as the king took his doctor's advice and stopped drinking champagne, he began to decline and passed away.

We could go on forever about the miraculous properties of wine. But then our readers will begin to cure themselves with wine alone, and that might bring the estimable Order of Physicians down on our heads.

Rivals of Bordeaux

The so-called health wines are in the table group. On parade, they belong in the front ranks. They are dry when the grape juice is fermented to the "point of dryness" and no sugar remains. If the sugar is not entirely converted and three to five per cent of it is left, the wine is semidry. Table wines never exceed ten to twelve per cent strength.

The dry or natural wines, as they are sometimes called, were described by Professor M. A. Amerine, the American wine maker, as "symphonic," because of their rich taste, aroma, bouquet and color. People have been drinking these wines from time immemorial. Along our Taurida coast (Crimean Peninsula) and Tanaï's (River Don), they were made by Greek colonists and later by the Genoese. The Scythians, who inhabited the steppes lying off the Black Sea, were great consumers of these beverages. Even Herodotus, who had seen a thing or two in his day, found their orgies too much for him.

The dry wines of Georgia (Caucasus) are incomparable. In the region of Kakhetia, they have been made by an original method for more than a thousand years. The wine is drawn and fermented with the grape skins and stems in huge clay jugs buried in the ground. It is kept with the skins and stems for a long time, and, as a result, the tannin, dyes and other things dissolve. Wine makers say it has body, *i.e.*, so many things are dissolved in it that it thickens, becomes an extract.

Some of the Soviet wines are named after European varieties of grape. But what

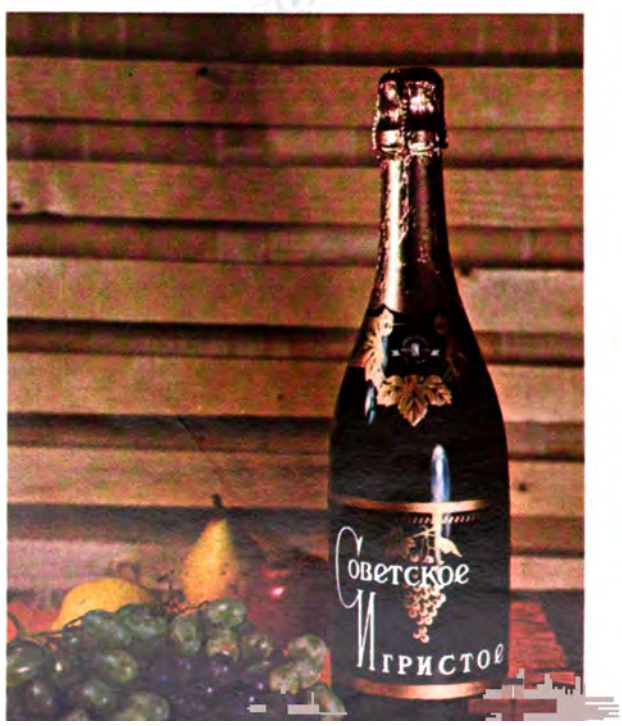

Sowjetischer
Champagner


МУСКАТ


Հայաստան
BRANDY
ARMENIA
OVER 10 YEARS OLD
PRODUCE OF THE USSR


BRANDY
JUBILEE
OVER 10 YEARS OLD
PRODUCE OF THE


РІСЛІНГ


Советское
Игристое

they have in common is only the names. Actually, nature and climate have altered their character completely. In Bordeaux, red table wine is made of the French Cabernet grape, while in Armenia only fortified wines are made of this grape. The white Muscat grape in the Crimea is used for dessert wines; on the Don table wines are made of it. In Italy it makes the unique Piedmont. The caprices of wine are sometimes impossible to predict.

The iron rule of the wine maker is never to pressure nature. Attempts were made to force the same species of grapes in one and the same districts to produce different



wines—from light table to sweet liqueur brands. But wine obeys no commands and punishes the overweening wine maker.

In the first half of the nineteenth century, Prince Chavchavadze set up wine cellars in the Georgian village of Tsinandali. In 1893, Chicago saluted the wines of Tsinandali at its World Fair.

Made of the rare Saperavi grape whose juice is red (other red varieties are colored by their skins, but their juice is colorless), the Georgian red Saperavi is called the blood of the earth. The same grape is used to make another red wine, Mukuzani, which has a higher but pleasant acidity. The semi-sweet Khvanchkara of the Rion Gorge (also in Georgia) revives the fame of the honey-sweet beverages of Colchis, the country of Homer's Golden Fleece.

In neighboring Azerbaijan the Matrasa reigns supreme among dry wines. Shah Abbas (sixteenth to seventeenth centuries), the famous Persian conqueror of the Caucasus, violated the interdiction of the Koran more than once for the sake of this wine with the color of precious garnet. It was extolled in the nineteenth century by the famous Azerbaijan poet Mirza-Shafi Vazekh, who wrote:

Wine is poison—and honeyed tea,
Wine enthralls—and sets one free,
But none can know what wine can be
If drunk like water immeasurably.

Among the curative wines are still other of our red brands. The Cabernet Abrau of the renowned wine district of Abrau-Dyurso (northern part of the Caucasian coast of the Black Sea) contains the rare element rubidium, which has a soothing effect on the nervous system. Cabernet Abrau, they say in our country, helps to clear up family arguments.

Abrau Dyurso is famous for another natural table wine, Riesling Abrau, which has many devotees, including the Queen of England, who buys it regularly. If we are to credit the reminiscences of participants in important international conferences, this wine has led to the peaceful settlement of more than one question.

Famous, too, for its natural wines is Moldavia (southwestern part of the Soviet Union). Their legendary history has its beginning in the Turkish siege of the fortress of Gorodeshty in days long past. That city on the high bank of the Dniester River was surrounded. Its defenders almost gave up from hunger and cold. The guttural cries of the Janizaries, prophesying death of the worst kind, sounded very near. Just then a great fluttering arose: Hundreds of white-winged storks flapped up to the besieged city, each carrying a huge bunch of grapes.

This food-landing operation saved the besieged townspeople, and the stork now has a place of honor on the labels of Moldavian wines.

At one time women were forbidden to drink wine. For them it was considered a worse crime than adultery and was punished by death. Happily, this custom has long been sent to oblivion. In Moldavia a special wine, Fetascu (the Moldavian for maiden) is produced for women. It is a very fine white wine, endowed with appropriate maidenly charm.

The fate of Purkar red wine is wrapped in mystery. Fifty years ago the secret of its preparation was lost. Old people recalled the wonderful properties of that rare wine, but nobody knew how to make it. Scientists and wine makers rolled up their sleeves and got down to work. Long years passed before the joyful echoes of "Eureka!" resounded in the hollow passages of the wine cellars. Earlier efforts had been made to produce the wine from a single species of grape; apparently it required a mixture of three species—Cabernet, Rara-Niagré and Saperavi—in strict proportions. There was one more requirement: The grapes had to be grown in Purkar on the lower reaches of the Dnieper. The wine is dark ruby in color, has a velvety consistency and a bouquet of black currants. This Negru de Purkar has brought the makers many gold and silver medals at international wine contests.

This history of the Don wines is rooted in the turbulent times of the Cossacks, who brought grapevines back from their distant marches. The difficult foreign names were soon forgotten, and the species of grapes took on the names of their owners. And so appeared the Pukhlyakovsky, Sibirkovy and Plechistik wines. Matvei Platov, chief of the Don troops and a hero in the war against Napoleon, supervised a prospering wine-making business in times of peace. The Don table wines are named for the grapes from which they are produced or the places where the wine was made. Pukhlyakovsky has a captivating bouquet and a flower flavor.

Sibirkovy is a full, harmonious wine with the spicy aroma of the Don steppes and a piquant bitter flavor. Razdorskoye Beloye (from the stanitsa of Razdorskaya, known for wine making since Peter the Great's time) is made of the Kokur grape. It has a fresh, pleasant taste and a wonderfully delicate bouquet. Fine too are the dry wines of the Don, such as Donskoye Beloye, Aligote, Riesling, Silvaner and Krasnostop Zolotovsky. Their qualities are attested to by gold and silver medals from international wine competitions.

What Did Shakespeare Drink?

The fortified wines are port, Maderia and sherry. They are made of semifermented grape juice supplemented with alcohol. Their strength is anywhere from eighteen to twenty per cent and their sugar content is between three and ten per cent. Produced originally in Portugal and Spain, they are strong-charactered wines with an austere individuality. The Russian wine makers divined the nature of the strong wines and learned to make them as well as the masters of the Iberian Peninsula.

If you want to know what the sun tastes like, drink Crimean Madeira. This wine is born twice, thanks to the sun. Its first birth is the grape and its second the wine, which is aged in casks for a long time in the sun. This sun treatment takes as long as the usual bottling period and gives the wine a special bouquet. The Crimean Madeira has thus retained the honorary title of Twice-Born by the Sun. It is dark amber in color, has a rather pungent, burning taste with a touch of sweetness.

Port wines also found a new home in our country. They incarnate the national colors and characters of their several birth places —Armenia, the Crimea, Azerbaijan, Georgia, Uzbekistan and Turkmenia. To ignore port is dangerous! According to Shakespeare's Falstaff, those who do not drink strong wines sire only girls. No wonder the Uzbeks called one of their first port wines Taifi (tribe).

Sherry is a special type of wine, indebted for its character to the film of yeast that grows in partly filled barrels and coats the surface of the beverage. This wine made the Spanish town of Jerez de la Frontera, its home, famous throughout the world. Our makers also unraveled the production secrets of this several-century-old Spanish wine.

Shakespeare, his contemporaries and his heroes drank dry sherry (sack) of a dark color, with a bitter flavor and a warm bouquet. In Shakespeare's time dry meant sweet. Later, in the nineteenth century, natural dry sherry, or dry sack, came into fashion. It was golden in color, without warm tones. Now sherry of the best quality is called fino.

In our country the strong sherries (twenty per cent alcohol, three per cent sugar) are favored. The best are the Crimean and Moldavian, distinguished by fine texture and vivid sherry tones.

Soviet sherry is mild, harmonious, with a nutty and fruity bouquet.

Wines to Treat with Respect

The southern republics of Georgia, Armenia, Azerbaijan and Moldavia, the republics of Central Asia, and southern Russia and the Crimea produce first-grade wines, some of them veritable masterpieces. They come in two types—sweet, with a strength of sixteen per cent and sixteen per cent sugar content, and liqueur, with a strength of thirteen to sixteen per cent and twenty to thirty per cent sugar content.

In Russia Cahors wines have been used traditionally in religious rites. One of them was called Lachryma Christi (tears of Christ). Erasmus of Rotterdam was very fond of church wine and drank it even during fasts. He met clerical objections with the quip: "My heart is Catholic, but my stomach is evangelical." Now both believers and atheists drink these wines with pleasure. They say that the French, on tasting the Azerbaijan Shemakha Kagor, were



"shattered" by its body, aroma and strength.

When dressing your table with wines, you can have a choice of pearls, rubies or ambers: the Pearl of Russia, for example, a gentle white dessert wine with the flavor of fresh-baked bread, the powerful red Ruby of the Don or the charming Amber of Stavropol, with fine honey taste.

There are as many characters as there are wines. One wine is gentle and caressing, another is flamboyant, pungent and ex-

citing. There are sparkling wines and flippant wines, wines for solemn toasting and for intimate tête-à-têtes. Take Black Eyes from Gelendzhik, a picturesque town on the Black Sea. It is made of the Cabernet-Sovignon grape. The intriguing name is no advertising trick. Black Eyes will never deceive, as the soulful gypsy song says. The wine reminds some of a fresh sea breeze, captivates others with its noble chocolate tones and still others are taken with its lovely black currant flavor. Such wines, according to Béranger, should be "mixed with love so that life be full."

Georgia also has a fine sweet wine, Salkhino (joyful), with five gold medals to its credit. It is made of the Isabella grape, which came to Europe from America. Isabella was a Cinderella among the wine elite until Georgian wine maker Valerian Kandelaki discovered its precious properties. Now, 40 years later, Salkhino is as popular as the rest.



Mention should also be made of the Uzbek Aleatiko (sweet tears), a thick red wine. To sweeten the wine, of liqueur consistency, the stems of grape clusters are broken and the berries are left to dry on the vine. The wine is made of the juice of this sun-dried grape.

Tokay has been drunk in Russia ever since 1605, when the False Dimitri wedded Maryna Mniszek, daughter of a Polish nobleman. An imposter, he passed himself off as Czarevich Dimitri, the youngest son of Ivan the Terrible, who came to a mysterious end in 1591. The imposter's bride brought to Moscow as part of her dowry 40 barrels of Tokay, then made only in Hungary. The Ai-Danil Tokay now produced in the Crimea is as fine as the Hungarian variety. It has a complex bouquet, with an aromatic rye-bread-crust flavor.

The Soviet muscat wines are known far and wide.

At an international gathering of experts in Budapest, the business atmosphere of tasting wine was disturbed only by the light clink of glasses. Suddenly somebody said in English, "Gentlemen, it is disrespectful to drink this wine seated." That memorable statement came from a Britisher on his first taste of our white muscat Krasny Kamen (red stone). The name derives from the village of Krasnokamenka in the Crimea. It was there, at a state vineyard, that the white Muscat for this wine was grown. Its taste and all the shades of its bouquet are almost impossible to convey. The light amber, slightly oily wine is saturated with the aroma of nutmeg and citrus. Krasny Kamen is the invention of Russian wine maker Alexander Yegorov. When he tasted Crimean muscats, Maxim Gorky said that they lent solar energy to the souls of men.

Fine too are the muscats of Stavropol Region (North Caucasus). Druzhba (friendship) from the banks of the Terek River is a musical wine. It rings. They say that when the great Brahms was treated to this wine with the toast: "Just as Brahms is the finest of composers, so is this wine the best of wines," he replied, "If this is Brahms from your cellar, what must Beethoven taste like!" About Druzhba one can say that it is Brahms and Beethoven combined. Nobody can be indifferent to this golden wine, full and harmonious, slightly oily and moderately sweet. The Praskoveisky muscat is another excellent Russian-made wine, of amber color and with a bouquet of nutmeg and citrus tones. Its glory has spread beyond the boundaries of Stavropol Region. Many gold medals embelish its label.

Jinni in a Bottle

Russian champagne corks have been shooting for a hundred years and never missed once. At the turn of this century, in 1899 to be exact, Prince Golitsyn's Russian champagne from Novy Svet (New Light) in the Crimea received the Grand Prix in Paris, vying with the most venerable and renowned firms of Moët Chandon, Pommery, Mercier and Perier Jouet. The aristocratic Russian wine maker charmed everyone with his refinement and erudition. He was dubbed the King of Experts.

Count Chandon, chairman of the committee of experts, gave a banquet in the restaurant of the Eiffel Tower. Prince Golitsyn had his own champagne poured into the glasses. The bold ruse was a great success. Chandon exclaimed in delight: "I drink to my wine makers who made this beautiful, unique champagne!" The Russian prince stood up to say: "I am very grateful to you, Count, for the advertisement given my champagne in France."

One of the best brands of Russian champagne has its home on the coast of the Black Sea, near Lake Abrau-Dyurso.

The last decades have made champagne a beverage for everyone. What made that possible was a real revolution in the production of Russian sparkling wines. In addition to the bottle method of production, a reservoir method was evolved and more recently a continual one. In the traditional bottle method, invented in the seventeenth century by Dom Pérignon, dry wine with yeast and sugar added is poured into bottles and well corked. Secondary fermentation takes place (the first being the production of dry wine for champagne). As a result, the wine is saturated with carbonic acid by natural fermentation and acquires the sparkle so prized in champagne. The entire cycle takes some three years and requires a great deal of labor and special skills to get rid of the deposits, to add liqueur, etc.

The bottle method could not possibly meet the enormous demand for sparkling wines; the major part of Soviet champagne is therefore made by the reservoir method. The size of the bottle was enlarged to create a reservoir of several thousand gallons, where the second fermentation takes place. But this method did not altogether satisfy wine makers. It solved the problem of quantity but at the cost of quality. Besides, the method did not permit the automation of the entire process.

Our scientists suggested a new method—continual processing. It excludes oxygen, which has a detrimental effect, and maintains maximum contact with yeast, which has a beneficial effect and accelerates the production cycle. This method makes champagne in twenty days, fifty times faster than the bottle method. Champagne made by the continual method competes successfully with wine produced by the bottle method. So say its gold medals.

Huge champagne wineries, equipped with the latest machines, are located at considerable distances from the vineyards in the centers of consumption: Moscow, Leningrad, Novosibirsk and even in Khabarovsk, in the Far East.

The continual method revolutionized the production of sparkling wines, amazing even the French, who jealously guard their long priority. They proclaimed Russia the second home of champagne. Licenses for the new method were bought by firms in France, Greece, the Federal Republic of Germany, Spain, Italy and the United States.

Soviet champagne comes absolutely dry (without sugar); very dry (up to one per cent sugar); dry (three per cent sugar); semidry (five per cent sugar); semisweet (seven per cent sugar) and sweet (ten per cent sugar).

Nikolai Okhremenko, the outstanding wine maker of Magarach in the Crimea, suggested the production of a sparkling muscat of the famous Asti-Spumante type.

Tsymlyanskoye Igristoye is akin to champagne. It appeared during the reign of Peter the Great, at a time when even the monks in the Hautevillier Abbey in Champagne knew nothing about sparkling wines. In autumn the semifermented wine must remain in the cellar. With the advent of summer, the wine is saturated with carbonic acid and begins to sparkle. This red sparkling wine is unique. The poet Alexander Pushkin called Tsymlyanskoye Igristoye wine for dashing horsemen. Horsemen of today also drive cars, and when driving they are forbidden to drink by the law. They have to use taxis if they want to test the charms of Tsymlyanskoye Igristoye.

When Age Is an Asset

Soviet cognacs are crowding France on the Cognac Olympus. It is only because of tradition that they are called by the French word cognac. They are absolutely original beverages. Only the Moldavian cognacs are reminiscent of the European brands. Three centuries ago, the Cossacks defending Russia from invasions from the South settled in the valley of the Terek River in the Caucasus. Homemade grape vodka kept the morale of the Cossack troops high. Everybody liked its quality, but it occurred to no one to keep it in oak barrels. It was the import of French cognacs that started the barrels rolling. The owners of wineries began to break into France's cognac monopoly. Since then cognac has been produced in Azerbaijan, Moldavia, Armenia and Georgia. There is no counting the medals won by the Soviet Dvin, Yereran, Armenia, Yeniseli, Azerbaijan, Moldova and Ukraina cognacs. Three stars on the label indicate three-year-old cognac; four stars, four-year-old, and five stars, five-year-old.



KV (matured) is six or seven years old; KVVK (matured, of the highest quality), eight or nine; KS (old cognac), ten; and OS (very old), over ten. The variety of grape, choice of soil, skill of cognac maker and ten to fifteen years of maturing in oak casks produce an exquisite taste and unique bouquet.

The best brands are obtained by mixing old cognac spirits, skillfully selected so that they may manifest all their perfections in the finished product. Especially prized in these cognacs are the vanilla tones—proof of old age and high quality. Their strength ranges from forty to fifty-seven per cent.

It is a rare feast that doesn't have cognac of Soviet make. This beverage is drunk on land and at sea, in Moscow and Petropavlovsk-Kamchatski, at the North and the South Poles. It stands to reason that Soviet cognac will be quaffed in outer space as well.



The famous pop singer pays a visit to these firemen shortly after they extinguished a blaze in a gas well near Dushanbe.



Edyta Piecha works with a crew from the German Democratic Republic. They are shooting their first color TV picture.



A warm [illegible] from Northern Fleet seamen. She has won an enormous audience on her many tours of the country.

SING along WITH Edyta

BY KONSTANTIN TELYATNIKOV
Photographs by Valeri Gende-Rote

EDYTA PIECHA, the Druzhba Variety Ensemble's soloist, is probably our best singer of popular songs. People love her, they argue about her, but no one is indifferent. She has swarms of imitators, not only of her singing style but even of the slight foreign accent that she has been trying to lose for nearly 13 years now. Her fans and admirers are legion. They besiege the concert halls where she performs, the car that takes her home, and the apartment where she lives with her daughter Ilona and her husband Alexander Bronevitsky, director of the Druzhba Ensemble.

Her audiences, too large to be contained in a concert hall, have been known to spill over onto the spacious grounds of castles—real medieval castles. Three years ago the ensemble toured Estonia. Estonians are not prone to emotional display, but they thawed marvelously for Edyta. Her success was complete, and on the island of Saaremaa it even stirred up a fuss between the people who came to hear her and the city fathers. The concert hall was too small, and those who were left outside expressed their loud objections, so loud that the start of the concert was delayed. The local officials got into a huddle with Bronevitsky, with the result that he announced an outdoor performance the following day.

It was held near the walls of ancient Kuressar Castle, built in the middle of the fourteenth century by the Münchausen family. One of them was the Baron

of the incredible adventures, the hero of Rudolph Erich Raspe's book. The cheerless walls of the castle had witnessed conspiracies, peasant uprisings and brutal executions, but never an event so festive. Thousands crowded around the makeshift stage set up on four trucks. At the height of the performance the flag of the Russian Federation was slowly raised on the flagpole of the ancient Estonian castle in tribute to Leningrad singer Edyta Piecha.

Cinderella

Edyta did not see Leningrad until she was 17. She was born in the department of Pas-de-Calais in Northern France in the small mining town of Neyalle-sous-Lens. Her parents were Polish and had come to France in search of work. Stanislaw Piecha, her father, was a miner and earned barely enough to make ends meet. Edyta is a Cinderella heroine who went from a childhood of poverty to a dazzling singing career.

Cinderella is apropos. For the town was all black with soot and coal dust that shortened people's lives. Edyta's father died of silicosis. Her brother was 14 then. To save the family from eviction, he had to take a job in the mine. He worked standing in ice-cold water up to his waist. The backbreaking toil and hunger sapped his strength, and three years later he died and was buried with his father.

Edyta has only two happy childhood memories. One was when a neighbor gave her an old papier-mâché doll. One eye and both feet were missing, but to her the doll looked beautiful. The other was when a man whose laundry her mother washed gave her a Teddy bear. Now Edyta's daughter Ilona has more toys than she has time to play with. When Edyta was asked why she gets her daughter so many, she replied:

"I guess I really buy them for myself to satisfy a long-felt childhood need."

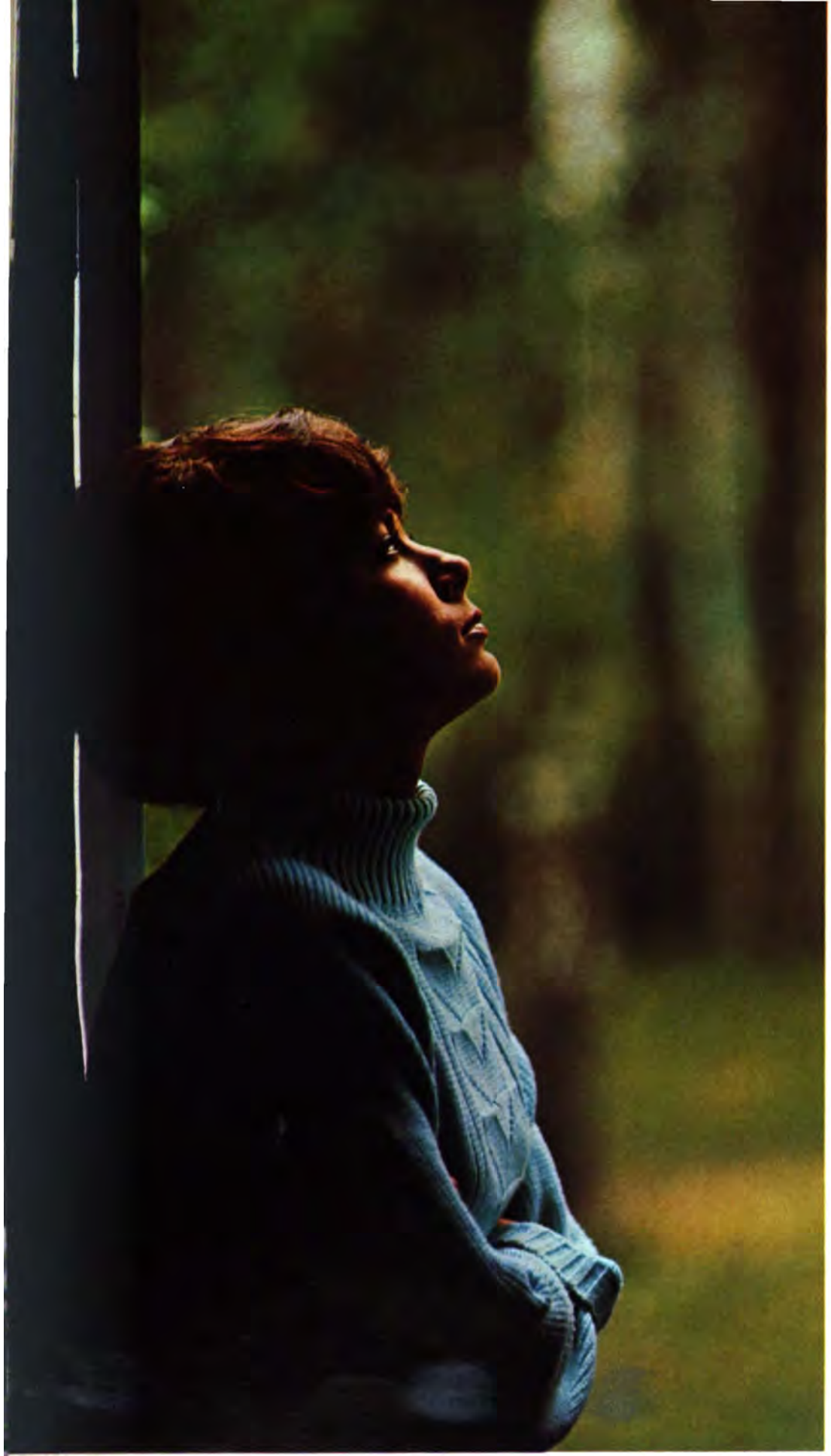
In France Edyta finished three grades of primary school. She was a good student and was often at the head of her class. The war interrupted her schooling. The town was occupied, and air raids were frequent.

During the air raids the children hid in a shelter and sang *La Marseillaise* softly so the Germans would not hear. Edyta still knows it by heart from beginning to end. Then came the day when the teacher told them they could sing *La Marseillaise* out loud. The Germans had been driven out. So the children sang the song of freedom in the street at the tops of their voices.

By then her mother had remarried. Her second husband, who was also a Pole, took the family back to Poland in 1946, to the little town of Boguszow. So after foggy Pas-de-Calais Edyta found herself in the Sudetes Mountains. For the first time she saw a forest. The sun here was not a yellowish ball dimly shining through haze, but a blinding circle of flame fringed by blue sky. Everything was radiant and fascinating.

Troubles came later, when Edyta went to school and immediately got a lot of poor marks. First, she did not know Polish well. She also could not understand how the other girls could study at home. She was inordinately happy when she





found there were such things as textbooks. In France there were no textbooks to take home, and the children had to do all their studying in school.

The day after this great discovery Edyta got her first good mark. And after that she was always close to the top of her class.

In the sixth grade she made another important discovery: She could sing. Suddenly she was the possessor of a deep alto. Teachers and students called her "the girl who sings." For the first time in her life she was really happy. She began to believe in her lucky star, and she sang and sang, giving voice to that novel feeling of happiness. Edyta says that she worked her vocal cords

She often sings to herself silently, so that nothing, even the sound of her own voice, will break the quiet. It is in moments of communion like these that the pattern and mood of her song is born. Her preference is for narrative and ballad songs of the free form type.

Edyta is not fond of giving autographs, but she is geniunely g to people for liking her art and she takes her popularity se

Prior to each concert, just before going on stage, Director Alex Bronevitsky briefs the ensemble. It started out as an amateur and rocketed to professional status and fame. It offers a dram song program, something like a musical play without a unifying



This is the creative laboratory of Edyta and her husband, Alexande Bronevitsky (center). He directs the Druzhba Ensemble for which sh is featured soloist. Here poets bring their lyrics for Alexander t set to music and composers bring their songs for Edyta to try out





so hard then that now they can take any load.

At the time she thought she would become a teacher. Completing the seventh grade with honors, she enrolled in a teachers college. Four years later she received her teaching certificate and a gold medal. But then something happened that changed the whole course of her life.

Cinderella Goes to Leningrad

When Piecha graduated from the teachers college, in addition to the gold medal she won a scholarship to Leningrad University to study psychology. All the graduates of Polish schools who were to study in the Soviet Union gathered in Gdansk for Russian language courses. Edyta knew less Russian than any of the others.

Her Russian was so poor there were doubts about her going to Leningrad.

She was saved by her singing in the Gdansk Students Choir, for if her Russian was the worst, her singing was the best. At one concert an elderly woman told her, "You sing beautifully, but your Russian is very bad." The woman turned out to be a professor of Russian and offered her help. She tutored Edyta two and a half hours a day for two months. That disposed of the language problem, at least on the academic level, and Edyta left for Leningrad.

Prince Charming

In class, however, she had a terrible time with her Russian. She understood very little and could not even communicate with her fellow students. Her propitious period was over, she thought; the lucky star that had brought her to Leningrad had set for good.

Once again singing delivered her. A Polish student at the Leningrad Conservatory, Jerzi Semkow, had organized a chorus of his countrymen living in Leningrad. It was through him that Piecha became a singer though she never actually met him. Now a famous Polish conductor, he left the Polish Students Choir about then, and another conservatory student, a native of Leningrad Alexander Bronevitsky, took his place. Bronevitsky proved to be the Prince Charming in Edyta's life.

True, he did not look the storybook prince, being a short and stocky young man, brisk and impatient, with piratical black eyes and bristling hair. He conducted with inventiveness and made rehearsals interesting. But he was irritated when someone did not understand him at a glance. Edyta thought he was picking on her. Despite her good ear and musical sense, she could not remember a new melody immediately. Bronevitsky thought that she was simply inattentive, did not apply herself enough. To spite the conductor and to prove to herself and others that she had a voice, during a recess Edyta sang Polish songs, of which she knew a great many, as loud as she could.

Instead of being annoyed, Bronevitsky was interested and asked Edyta to stay after rehearsal and sing one of her songs. She sang one about a red bus. Since then Edyta has given about 5,000 concerts in Warsaw and Prague, Paris and Moscow. It all began with that song about a red bus.

Bronevitsky heard her out to the end and then asked her whether she would like to rehearse with an ensemble that he and 11 other students of the Conducting and Choral Department of Leningrad Conservatory had organized. Edyta jumped at the chance.

"That was a great event," she recalls. Edyta's parents were Roman Catholic, and she walked into the conservatory with the same feeling of awe that she used to experience as a child when she went to church.

When she began singing, or rather "resonating," her deep voice drowned out all the men.

"You have a golden throat," was the consensus. "You'll turn into a fine singer if you get down to work. In two or three years you can become a real singer."

From that day on her life was tied up with the ensemble, and now it is as hard to imagine the Druzhba Ensemble without Piecha as Piecha without the ensemble.

Druzhba

The group was organized in 1955. Although it was an amateur ensemble to begin with, its members had a very professional approach. They sang ordinary popular songs, but they made elaborate and modern arrangements and introduced elements of classical choral singing and jazz harmonies.

The songs were arranged by the organizer and conductor Alexander Bronevitsky, who had completed the course of study at two departments of the conservatory—the Conducting and Choral Department and the Composing Department. The Druzhba Ensemble started out with 12 singers, a bass, a guitar and a piano. The number of singers was subsequently cut to eight, an electric guitar replaced the ordinary one, and percussion instruments and an electric organ were added.

Originally there were Germans, Poles, Russians, a Ukrainian, an Estonian, a Latvian and a Georgian in the group. Each member brought his own national songs. When they were asked before their first public performance in the Grand Hall of the Leningrad Conservatory how they wanted to be announced, one of them said: "Druzhba (Friendship). Just announce us as the Druzhba Ensemble." The name stuck.

A New Star

Edyta, with her repertoire of Polish and French songs, became an integral part of Bronevitsky's ensemble. Her low resonant voice blended in well with the others. Her first performance was a success, although at the time she had little more than youthful ardor to recommend her. She came on stage in a wool sweater and a brown skirt with a large inkstain—all she had in the way of theatrical costume, and began her throaty singing, distorting the Russian words mercilessly.

She could not read music, did not know how to move about on the stage and had no idea of the cultural background out of which her songs grew. But she was lucky, surrounded by knowing and sensitive musicians, who soon made an artist of her. Most of the credit for this is owed to Bronevitsky. At first, he explains, he was motivated solely by the needs of the ensemble. But after a year or so, when the Leningrad Documentary Studio was filming the group and they had to return home very late, the relationship was somehow altered by the white nights of Leningrad, the bridges across the Neva, and the enormous gray palaces. Soon they were married. Later a Polish radio commentator had this to say: "Bronevitsky has excellent taste. He has proved it once again by marrying a Polish girl."

In the meantime Edyta was learning to sing. The ensemble had become her conservatory. She gave fine renditions of such songs as "The Red Bus," "The Guitar of Love" and "The Song about Captains"—simple and unpretentious songs about joy and love, but she tended to overdo those which required passionate, lyrical or sorrowful interpretations. She did not yet know how to sing of love with understatement or of sorrow without exaggeration. This Edyta



Edyta spent her early childhood in a French mining town to which her father had come from Poland in search of a job. He died of silicosis. So did her seventeen-year-old brother who took his place as the breadwinner. During the war the town was occupied by the Germans, and the sound of air-raid sirens is one she will never forget. She has known hunger, death, war at first hand. Her repertoire includes what she calls songs of protest and struggle. One is Pete Seeger's "Where Have All the Flowers Gone?"





Sofia, 1968. The songs Edyta chose to sing for her international polyglot audiences at the Ninth World Youth and Students Festival spoke of the need to fight for a child's right to smile, for peace on earth.



Her songs speak the language of the heart. She is thinking of a new program she describes as "heartfelt" songs, the love songs not yet sung.

A brief moment with her daughter in the dressing room. Bronevitsky's parents look after Ilona when the ensemble is on one of its many tours.





learned later, when she realized that she could only sing about what she herself had experienced or had been able to convince herself that she had experienced. She believed that the great French singer Edith Piaf sang so tragically about love because such tragedy had become a part of her.

By then Druzhba was being written and talked about. The critics wrote that old and timeworn songs rendered by the ensemble underwent a transmutation and that the alchemist was a foreign girl with a voice like molten gold. The musical effects that Bronevitsky achieved won over even hard-line skeptics.

Everything seemed to be going well. Edyta passed her university exams. Reviews called her a rising star. She kept receiving more invitations to sing over the radio. And she made a record.

And then the ensemble had an unexpected setback. It was to perform at the Fourth World Youth and Students Festival in Moscow in July 1957. A whole series of contests and auditions began, with the judges giving constructive criticism. Since most of the criticism given her was valid, Edyta came to the conclusion that she knew nothing about singing and immediately lost her emo-



tional hold on the songs. Her charm had been ingenuousness and freshness; now she had to think about breathing, intonation and enunciation. Her singing became cold and formal, with the result that the whole ensemble lost quality, and this was reflected in adverse criticism. Nevertheless Druzhba won a gold medal at the festival and soon turned into a professional group.

Recognition

That was 12 years ago. The Druzhba Ensemble has changed out of all recognition. The original members graduated from the conservatory in 1958 and scattered all over the country. Only Bronevitsky and Piecha remained. Edyta also graduated from the university but chose to be a singer rather than a psychologist.

Bronevitsky set up Druzhba Ensemble No. 2 and little by little began introducing theatrical elements. Now it is actually Druzhba No. 3 with a fully dramatized song program, something like a musical play but without a unifying plot.

But it was not only the ensemble that changed. Edyta Piecha is no longer simply a spontaneously effervescent young girl with a deep voice, but a real artist.

And what does she sing about? Love, friendship, sorrow, war and many other things. Her preference is for narrative songs and ballads of a free form type, always with good lyrics. Bronevitsky has done the music for several such songs: "This Means Love," lyrics by Lev Oshanin; "Clouds," lyrics by Robert Rozhdestvensky; "I Love," lyrics by Solomon Fogelson, and others.

Edyta's interpretation always adds connotations. In Andrei Petrov's "On the Hill" she sings about World War II, about one of the millions of Russian soldiers whose graves are scattered from the Volga to Berlin and Prague. Then, as the footlights slowly fade, she places a bouquet of roses at the foot of the microphone, and everyone in the audience sees not a microphone but one of the innumerable soldiers' wooden obelisks topped by a red star.

Her repertoire includes what she calls songs of protest and struggle: the French song "Those from Warsaw" about the right of everyone to happiness, the "Partisan Song" by the Greek composer Mikis Theodorakis, and "Where Have All the Flowers Gone?" by Pete Seeger.

Recognition and fame have brought Edyta an enormous audience. She sings in concert halls and parks, over the radio and TV, in palaces of culture and at construction sites. She has toured up and down the whole country.

She wants to do more than just entertain. That is why not everyone likes her repertoire, even her style, which some critics affected. She always has something to tell her audience. She is always tuned to her audience but tries to be just a little jump ahead.

Her songs speak the language of the heart, and the songs she loves most are those that allow her to touch the hearts of people. It is a strong, laconic language. As Edyta puts it, her song is a small beautiful flower with a powerful scent.

With the years her repertoire has become more interesting and her voice more luminous. Many composers dedicate their new songs to her. Still she feels there is a scarcity of good songs. She is thinking of a totally new program made up of heartfelt songs, of songs of love as yet unsung, dramatic songs but without the hard and pitiless dramatization of Edith Piaf. For Edyta Piecha sings only what she herself has experienced.

IN MEMORY OF HERZEN

(Continued from page 34)

the revolutionary struggle, having founded the Social-Democratic Labor Party; on the other hand, the revolutionary peasants (the Trudoviks and the Peasant Union [6]), who fought for every form of the abolition of landlordism even to "the abolition of private ownership of the land," fought precisely as proprietors, as small entrepreneurs.

Today, the controversy over the "socialist nature" of the right to land, and so on, serves only to *obscure* and gloss over the really important and vital historical question concerning the difference of *interests* of the liberal bourgeoisie and the revolutionary peasantry in the Russian *bourgeois* revolution; in other words, the question of the liberal and the democratic, the "compromising" (monarchist) and the republican trends in this revolution. This is exactly the question which Herzen's *Kolokol* posed, if we look beyond the words and turn our attention to the essence of the matter, if we investigate the class struggle as the basis of "theories" and doctrines and not vice versa.

Herzen founded a free Russian press abroad—that is the great service he rendered. *Polyarnaya Zvezda* took up the tradition of the Decembrists. *Kolokol* (1857-67) stalwartly championed the emancipation of the peasants with might and main. The slavish silence was broken.[7]

But Herzen had a landlord, aristocratic background. He had left Russia in 1847; he had not seen the revolutionary people and could have no faith in it. Hence his liberal appeal to the "upper ranks." Hence his innumerable sugary letters in *Kolokol* addressed to Alexander II the Hangman, which today one cannot read without revulsion. Chernyshevsky, Dobrolyubov and Serno-Solovyevich, who represented the new generation of revolutionary *raznochintsi,*[8] were a thousand times right when they reproached Herzen for these lapses from democracy to liberalism. However, it must be said in fairness to Herzen that, much as he vacillated between democracy and liberalism, the democrat in him nonetheless gained the upper hand.

When Kavelin,[9] one of the most repulsive exponents of liberal servility—who at one time was enthusiastic about *Kolokol* precisely because of its *liberal* tendencies—came out against a constitution, attacked revolutionary agitation, condemned "violence" and appeals to it, and began to preach tolerance, Herzen *broke* with that liberal sage. Herzen turned upon Kavelin's "meager, absurd, harmful pamphlet" written "for the private guidance of a government pretending to be liberal," denounced his sentimental political maxims" which represented "the Russian people as cattle and the government as an embodiment of wisdom." *Kolokol* printed an article entitled "Epitaph," which lashed out against "professors weaving the rotten cobweb of their supercilious and paltry ideas, ex-professors, once openhearted and subsequently embittered because they saw that the healthy youth could not sympathize with their scrofulous thinking." Kavelin at once recognized himself in this portrait.

When Chernyshevsky was arrested, that vile liberal Kavelin wrote: "I see nothing shocking in the arrests . . . the revolutionary party considers all means fair to overthrow the government, and the government is defending itself by its own means." As if in retort to this Cadet,[10] Herzen wrote in his article dealing with Chernyshevsky's trial: "And here are wretches, people comparable to grass under our feet, slimy creatures, who say that we must not denounce the gang of robbers and scoundrels that is governing us."

When the liberal Turgenev[11] wrote a private letter to Alexander II assuring him that he was a loyal and obedient subject and donated two gold pieces for the soldiers wounded during the suppression of the Polish insurrection, *Kolokol* wrote of "the gray-haired Magdalen (of the masculine gender) who wrote to the czar to tell him that she knew no sleep because she was tormented by the thought that the czar was not aware of the repentance that had overcome her." And Turgenev at once recognized himself.

When the whole band of Russian liberals scurried away from Herzen for his defense of Poland, when the whole of "educated society" turned its back on *Kolokol,* Herzen was not dismayed. He went on championing the freedom of Poland and castigating the suppressors, the butchers, the hangmen in the service of Alexander II. Herzen saved the honor of Russian democracy. "We have saved the honor of the Russian name," he wrote to Turgenev, "and for doing so we have suffered at the hands of the slavish majority."

When it was reported that a serf peasant had killed a landlord for an attempt to rape the serf's betrothed, Herzen commented in *Kolokol:* "Well done!" When it was reported that army officers would be appointed to supervise the "peaceable" progress of "emancipation,"[12] Herzen wrote: "The first wise colonel who, with his unit, joins the peasants instead of crushing them, is sure to ascend the throne of the Romanovs." When Colonel Reitern shot himself in Warsaw (1860) because he did not want to be an accomplice of the hangmen, Herzen wrote: "If there is to be any shooting, the ones to be shot should be the generals who give orders to fire upon unarmed people." When 50 peasants were massacred in Bezdna and their leader Anton Petrov was executed (April 12, 1861), Herzen wrote in *Kolokol:*

> Oh, if only my words could reach you, toiler and sufferer of the land of Russia! . . . I would teach you to despise your spiritual shepherds, placed over you by the St. Petersburg Synod and a German czar. . . . You hate the landlord, you hate the official, you fear them—and rightly so; but you still believe in the czar and the bishop . . . do not believe them. The czar is with them, and they are with the czar. It is him you now see—you, the father of the youth murdered in Bezdna, and you, the son of a father murdered in Penza. . . . Your shepherds are as ignorant as you, and as poor. . . . Such was another Anthony (not Bishop Anthony, but Anton of Bezdna) who suffered for you in Kazan. . . . The dead bodies of your martyrs will not perform 48 miracles, and praying to them will not cure a toothache; but their living memory may produce one miracle—your emancipation.

This shows how infamously and vilely Herzen is being slandered by our liberals entrenched in the slavish "legal" press, who magnify his weak points and say nothing about his strong points. It was not Herzen's fault but his misfortune that he could not see the revolutionary people in Russia itself in the 1840s. When *in the sixties* he did come to see the revolutionary people, he sided fearlessly with the revolutionary democracy against liberalism. He fought for a victory of the people over czarism, not for a deal between the liberal bourgeoisie and the landlords' czar. He raised aloft the banner of revolution.

* * *

In commemorating Herzen, we clearly see the three generations, the three classes, that were active in the Russian revolution. At first it was nobles and landlords, the Decembrists and Herzen. These revolutionaries formed only a narrow group. They were very far removed from the people. But their effort was not in vain. The Decembrists awakened Herzen. Herzen began the work of revolutionary agitation.

This work was taken up, extended, strengthened, and tempered by the revolutionary *raznochintsi* —from Chernyshevsky to the heroes of Narodnaya Volya.[13] The circle of fighters widened; their contact with the people became closer. "The young helmsmen of the gathering storm," Herzen called them. But it was not yet the storm itself.

The storm is the movement of the masses themselves. The proletariat, the only class that is revolutionary to the end, rose at the head of the masses and for the first time aroused millions of peasants to open revolutionary struggle. The first onslaught in this storm took place in 1905. The next is beginning to develop under our very eyes.

In commemorating Herzen, the proletariat is learning from his example to appreciate the great importance of revolutionary theory. It is learning that selfless devotion to the revolution and revolutionary propaganda among the people are not wasted even if long decades divide the sowing from the harvest. It is learning to define the role of the various classes in the Russian and in the international revolution. Enriched by these lessons, the proletariat will fight its way through to a free alliance with the socialist workers of all lands, having crushed that loathsome monster, the czarist monarchy, against which Herzen was the first to raise the great banner of struggle by addressing his *free Russian words* to the masses.

First appeared on May 8, 1912, in *Sotsial-Demokrat,* organ of the Central Committee of the Russian Social-Democratic Labor Party, then published in Paris.

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[6] The Trudoviks were a petty-bourgeois democratic group in the Duma, consisting mainly of peasants and intellectuals of the Narodnik stripe. The group was organized in April 1906 by peasant deputies of the First Duma who wavered between the Constitutional Democrats and the Social-Democrats. The Peasant Union was a revolutionary-democratic organization which existed in 1905 and disintegrated in 1907. The Trudoviks demanded the abolition of private ownership of land and the convening of a constituent assembly. Its agrarian program called for the abolition of private ownership of land and the transfer of monastery, church, crown and state lands to the pesants without compensation. Its policy was halfhearted and vacillating.

[7] *Polyarnaya Zvezda (The Pole Star)* was a literary and political publication issued from 1855 to 1868. Altogether eight issues appeared. *Kolokol (The Bell)* was a political newspaper issued monthly and for a short time semimonthly. In the last year of publication (1868) it was issued in French but also had a supplement in Russian. Both were edited by Herzen, at first in London and then in Geneva, with the assistance of his friend, the well-known Russian poet Nikolai P. Ogaryov (1813-1877). Both *Polyarnaya Zvezda* and *Kolokol* were clandestinely disseminated in Russia and played a large part in spreading revolutionary ideas.

[8] The *raznochintsi* (literally, men of various social strata) were Russian intellectuals drawn from the small townsfolk, the clergy, the merchants and the peasantry, as distinct from those drawn from the nobility.

[9] Konstantin D. Kavelin (1815-1885), well-known historian and jurist, professor at the universities of Moscow and St. Petersburg. Notorious for his reactionary political views.

[10] Member of the reactionary Constitutional Democratic Party, founded in Russia in 1905. Lenin uses the term to describe the political essence of Kavelin.

[11] Ivan S. Turgenev (1818-1883)—novelist who did much to develop Russian as a literary language. His writings reflected the typical contradictions of Russian society. While protesting against serfdom, he proposed moderate liberal changes.

[12] The "emancipation" of 1861 which benefited the landlords and saddled the peasants with onerous redemption payments resulted in a wave of peasant riots throughout the country which threatened to turn into a revolution.

[13] *Narodnaya Volya (People's Will)*—an illegal organization of the revolutionary-minded intelligentsia, the Narodniks, founded in 1879 to combat the czarist regime.It was active until the second half of the 1880s.

A LITTLE HEDGEHOG

BY GENNADI TSIFEROV

ONE DARK NIGHT a gray hedgehog went out for a walk in the woods. He saw a red berry and stuck it on one of his needles. Then he saw some yellow leaves and did the same with them.

After a while he spotted a blue star in a blue pool of water. He wanted to stick it on his needles, but couldn't, no matter how hard he tried. He scratched the spot where hedgehogs have necks and then covered up the star with a big leaf to let it lie there till morning.

The next morning he turned the leaf over, and instead of a blue star he found a big red sun. Did he laugh!



Drawing by Leonid Sergeyev

GOING TO MOSCOW? TAKE A BUS!

СОВТРАНСАВТО
SOVTRANSAVTO

SOVIET UNION STARTS VAN AND BUS SERVICE IN EUROPE

USSR foreign trade is growing year in and year out and there is an increasing flow of freight across its borders. Along with traditional shipping by rail and water, highway transport is ever more widely used in foreign trade.

Novosti Press Agency correspondent Yevgeni Bolotin dropped in to talk with Nikolai Semikin, head of the Chief International Motor Hauling Board (Sovtransavto) of the RSFSR Ministry of Motor Transport and Highways.

Question: How do you account for the growing popularity of highway transport over more traditional means of international shipping?

Answer: Of all the modern means of transport, the truck seems to be best suited for quick intermediate hauls of loads literally from the door of the manufacturer to the door of the user. The "doorstep to doorstep" delivery is convenient, swift and economical. Our Italian colleagues from the Andrea Merzario firm have calculated that to carry a 4-cubic-yard cargo weighing one ton traditionally—by sea—costs 130 U.S. dollars, while by truck the cost is only 80 dollars. Practice may introduce a correction coefficient in these calculations one way or another, but the economic advantage of highway transport over sea transport, say, on the route from Milan to Moscow is beyond any doubt.

Question: Why is the bulk of foreign cargo still delivered by rail [redacted]?

An[redacted]ight mention the force of habit, if there hadn't been more weighty reasons. To begin with, much of our foreign trade consists of loads which, of their nature, must be transported in ship holds, tankers, railway trucks or through pipelines. There can be no question of transporting ores, inert materials, crude oil and natural gas by motor vehicles. Secondly, in our country the network of railways, including high-speed electric railways, predominates over the relatively less developed motor highways. In recent years a powerful merchant marine has been created. The railway and water transports have for decades been specializing in carrying various types of loads: This is not the case with motor transport. The Soviet Union organized its first hauls by motor vehicles on international routes in 1964. The time is too short for the advantages of motor transportation to have shown fully. Even the fact that specialized hauling agencies have been set up in the Soviet Union to serve international routes is still insufficiently known by the interested firms abroad. Hence our task at this stage is to strengthen links with our partners, to sign agreements and contracts regulating motor hauls between the USSR and other countries.

I would like to add that with our foreign trade expanding rapidly, there will be enough work for all: the railwaymen, the seamen and the motor transport people. The important thing is to choose the suitable type of transport for particular kinds of loads on a strictly commercial basis. Among the major tasks we now face are providing our motor transport agencies with specialized vehicles for operation on international lines and building high-quality motor routes. These problems are reflected in the 1969 State Plan for the National Economy.

Question: How many countries maintain business links with our motor transport agencies and what loads do they haul?

Answer: With a growing number of countries expressing their wish for Soviet motor transport services and an increasing volume of goods hauled, the RSFSR Ministry of Motor Transport and Highways deemed it necessary to set up the Chief International Motor Hauling Board (Sovtransavto). The Board controls the work of several motor transport agencies which haul imported and exported goods. Growing vigorously is the volume of goods transported between the USSR and Bulgaria, Hungary, the German Democratic Republic, Mongolia, Poland, Rumania, Czechoslovakia, Yugoslavia and Finland. These are largely foreign trade loads, exhibition and embassy loads. Some of the prominent items they include are furs, fabrics, carpets, sewing machines, fiction and technical literature, china, spare parts, foodstuffs, drugs, perfumes, footwear, exhibition gear and theater properties. A somewhat more modest place is occupied by technological equipment, machine tools, chemicals, linoleum, clothes, toys, sports gear, wines, vodka, etc.

Currently Sovtransavto is negotiating the opening of regular lines with Swedish Goods, Ltd. and Yunsson in Sweden, Gondrand and Andrea Merzario in Italy, and firms in the Federal Republic of Germany and other countries. In the near future we are planning to increase considerably both the volume of goods hauled and their assortment.

Question: What about international transportation of passengers?

Answer: To date there has been no regular coach service between the USSR and other countries. Occasionally Soviet buses take tourists on the Leningrad—Helsinki route, or on the USSR—Poland—Czechoslovakia route. On the other hand, a large number of foreign tourist buses come to the USSR—up to 20,000 a year, according to Intourist, the Soviet foreign travel agency. We are able to handle a considerable number of the tourists by organizing coach tours from Europe to Moscow, Leningrad, Kiev and back.

Beginning with the 1969 season Sovtransavto and Intourist are organizing regular coach services on the following routes: Milan—Moscow—Milan, Paris—Moscow—Paris, Ostend—Moscow—Ostend, Helsinki—Moscow—Helsinki. Other routes are also possible through agreement with the foreign agencies concerned. The bus used on international routes will be the international-class Icarus-25 Lux, which has 44 reclining seats, a cloakroom, bar, refrigerator and other conveniences.

I take this opportunity to give you our address: Sovtransavto, 34 Maurice Thorez Embankment, Moscow, USSR.

AN ENCOUNTER WITH BENT LARSEN

By Boris Spassky

International Grandmaster

E MOST NOTEWORTHY GAME I played the World Chess Olympiad in Lugano against Denmark's Grandmaster Bent en. Several months before the Olympiad n a match from Larsen in the semi- of the challengers' meet, and that d spice to our encounter. When I sat opposite my worthy opponent I was peaceful mood; the Danish grandmas- it turned out, had a surprise up his e.

QUEEN'S GAMBIT
Eighteenth Olympiad
Lugano, 1968

arsen	B. Spassky
KB3	Kt-KB3
4	. . . .

was not fortuitous, I think, that Bent en started the game with the move -KB3. Evidently he feared that in reply . . . P-QB4 I would play I. . . . P-K4. ur match I had chosen this continua- constantly in reply to 1. P-QB4, intui- sensing that it would go against the sh grandmaster's grain.

. .	P-K3	4. P-Q4	B-K2
B3	P-Q4	5. B-B4	. . . .

understood here that Larsen would ly connect this move with an exchange ne Q5-square, so I decided to employ ld system of development.

. .	O-O	8. P-KR3	P-QR3
3	QKt-Q2	9. P-R3	. . . .
1	P-B3		

rsen belongs to that category of play- who do not care what color they play. s not like Yefim Geller, who is always ng for an advantage when playing e. Now, too, the Danish grandmaster aying the opening without any special ensions, not even trying to obstruct k from developing his pieces.

. . .	PxP	11. B-QR2	B-Kt2
xP	P-QKt4		

I that Black has to do to obtain equal- s to make the traditional move P-B4. White capable of preventing it by ng, say, 12. P-QKt4, he would unques- ably have a noticeable positional ad- age. In the given situation, however, P-QKt4 does not achieve that end in of 12. . . . P-QR4. White's attempt to ch the center by 12. P-K4 P-B4 13. P-Q5 hardly gives him any advantage. ing 13. . . . PxP and R-K1, Black es his pieces harmoniously and can ly face the future.

-O	P-B4	13. P-Q5	. . . .

hen White was making this move, lead- to exchanges in the center, I recalled conversation with Denmark's Master oldsen in Malmo before my match with en. Larsen, he said, considers himself ger than Soviet grandmasters in the game. This game is hardly confirmation.

13. . . .	KtxP	15. BxB	PxB
14. KtxKt	BxKt	16. QxP	Kt-B3

In view of the Pawn superiority on the Q-side, Black's position is somewhat more pleasant.

17. Q-Kt7	R-K1	19. QxQ	QRxQ
18. KR-Q1	Q-B1	20. B-Q6	K-B1

At this moment I offered Larsen a draw. He said, "Thanks, no!" I replied, "All right." The Dane's refusal did not disappoint me since I saw that Black's position was a bit better: Deciding to play for a win, Larsen was taking the risk of getting into a difficult position.

21. K-B1	Kt-K5	23. R-Q5	QR-Q1
22. BxBch	KxB	24. R-R5	. . . .

This "side" looks like play with fire: Now Black has a real winning chance. I had already noticed in my match with Larsen that out of the three or four possible continuations he picks not the most dangerous for me, but his "own," the one he likes. From the psychological viewpoint this may sometimes lead to success, but in our match, and in this game as well, Larsen's tactics were not justified.

24.	P-R3	26. P-QR4	. . . .
25. P-QKt4	P-B5		

Larsen places all his hopes on this operation but, alas!, disillusion awaits him.

26.	K-B3!	27. PxP	P-Kt3

A simple move but very unpleasant for White. Larsen can still put up a fight for a draw by playing 28. R-R4, but he prefers to accept the challenge.

28. RxRP	PxP

Black's main threat is shifting his Rook on Q1 to the Q-side along the Q1-Q6-Kt6 route.

29. Kt-Q4	Kt-Q7ch	30. K-Kt1	. . . .

If 30. K-K, then 30. . . . RxKt.

30.	Kt-Kt6	32. R-Kt1	R-K5
31. KtxKt	PxKt		

Now, on account of the threat 33. . . . K-Kt2, White loses the QKt-Pawn and, with it, the game.

33. P-Kt3	RxKtP	35. PxR	RxQ6
34. R-R4	RxR	36. K-Kt2	K-K4

Having made this move, I got up and went to the neighboring tables to see how matters stood in the other encounters of this round. The head of the Soviet team stopped at that moment for a look at our game. Since Larsen was not looking at the board, but apparently searching for someone in the hall, he asked:

"Are you looking for Spassky? Do you want to resign?"

"Yes," said Larsen and stopped the clock.

NEXT ISSUE

Parachute jumping is a competitive and very popular sport in the Soviet Union. The skydiver who lands nearest a preset target takes the prize. Normally the bull's-eye is on flat and open terrain. But suppose the landing area is only a few hundred yards square, on top of one of the highest peaks of the Pamirs, between a sheer mile-deep precipice and a slope covered with ice and snow. Not long ago 36 daredevil Muscovites made just that kind of jump. Their bull's-eye was a 20,000-foot-high peak. The story is in the June issue.



An escorted tour of the Soviet circus in which you will meet the inimitable clowns Oleg Popov, Yuri Nikulin and Karandash for a look at the men under the makeup; the celebrated animal trainer Walter Zapashny who was brutally mauled by a tiger gone berserk and who walked back into the cage after two months in the hospital and put the beast through her paces; tumblers; high wire artists and other performers who have made the Soviet circus world famous.





The fifth edition of the complete works of Lenin in 55 volumes (some 9,000 books, pamphlets and articles) has just been published. The editors tracked down 579 previously unknown texts, and they are still searching for the second and major part of an important work: *What the "Friends of the People" Are and How They Fight the Social-Democrats.* The forthcoming issue will contain an excerpt from the first part, written in 1894, and the story of the search now taking place for the second part.

The widely read Soviet poet Kornei Chukovsky analyzes the work of the great American poet Walt Whitman. Excerpts from his book *My Whitman.*

Not many three-masters ply the sea. The training bark *Tovarishch* is one of the five that still do. A cruise with Soviet seafaring cadets.

Harpist Vera Dulova and her star students prepare for the first harp competition sponsored by the music school of an American university.

COMING SOON

On Tupolev and his newest aircraft designs.

OUT FOR POLAR BEAR CUBS BUT JUST FOR THE ZOO



They howl and yelp and try to defend themselves whatever way they can. For some reason the sno-cat frightens them even more than the humans do.



For four days running a sno-cat crept along the steep slopes of icy Wrangel Island. Trappers were after bear cubs needed by the country's zoos. They found no bears, not even traces of them in the snow. Trapper Ivan Shakin couldn't believe it. "In December there were more than a hundred here," he kept repeating. "Maybe they hid in the ice rocks." What must have happened, he figured, was this: When the bears smelt spring in the offing, they took their young ones, left the dens and moved to the white expanses of the Arctic Ocean, where the warmth of the short Arctic summer would not reach them. The trappers found dens with the bears in them on the northernmost corner of the island. Now they had to entice the she-bears out of the snow caves so as to catch the cubs alive—a very dangerous operation indeed. Even the relatively good-natured brown bear will not part with her cubs. The white bear is considered one of the most evil-tempered of wild animals. With a mixture of cunning and threat, the trappers managed to drive the she-bears away from the den for the few minutes necessary to get eight fluffy, squirming cubs into the waiting sno-cat.

Photographs by Boris Korobeinikov



Collected in one huddle, they feel safer and quiet down for a while.



This one is trying to play possum.

But when the sno-cat starts, so do they, howling out their farewells in unison, "Good-by, Mommy!"





SPRING DESIGN

Photograph by Stanislav Golubev.

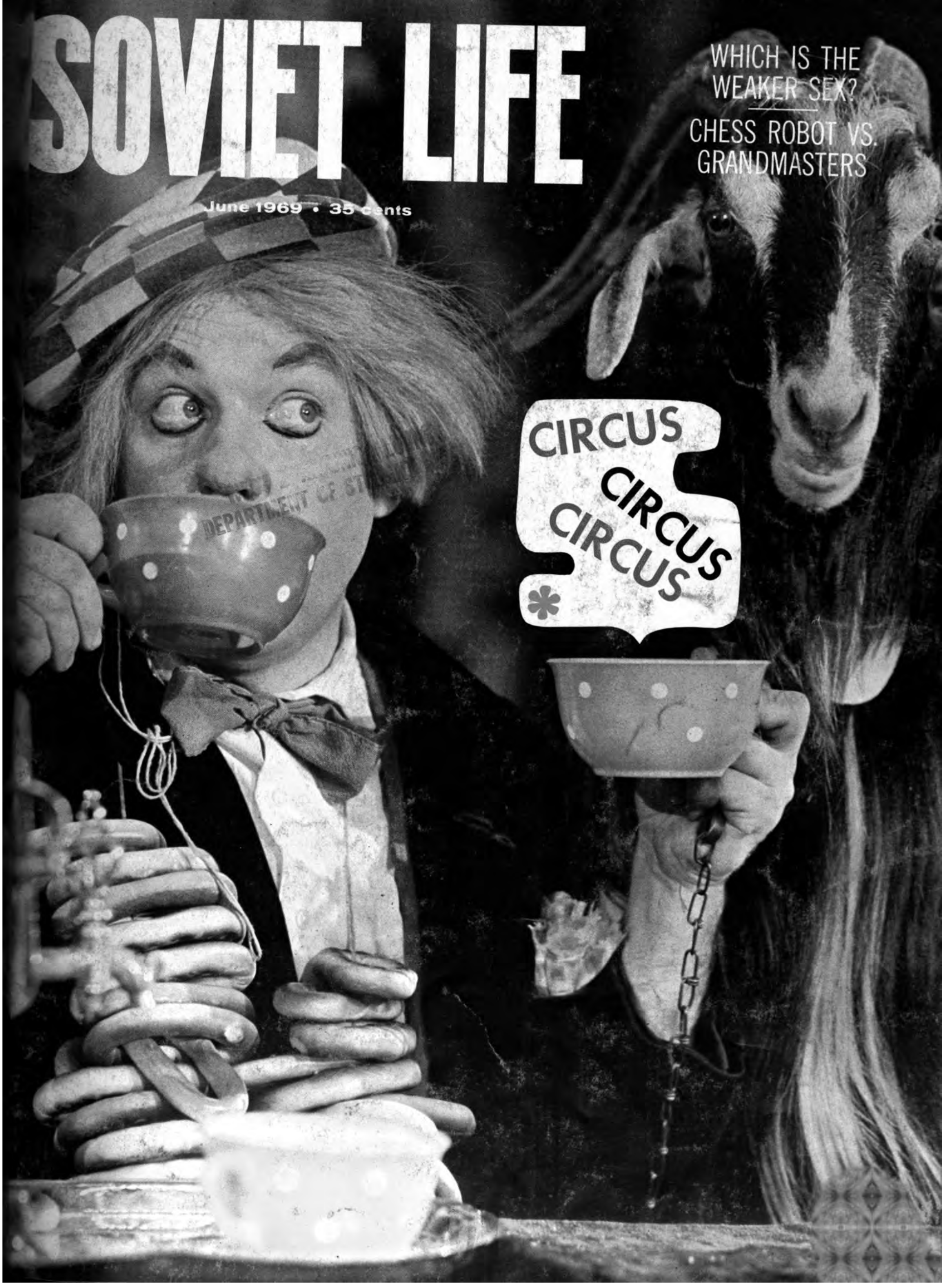
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WHICH IS THE WEAKER SEX?

CHESS ROBOT VS. GRANDMASTERS

CIRCUS CIRCUS CIRCUS



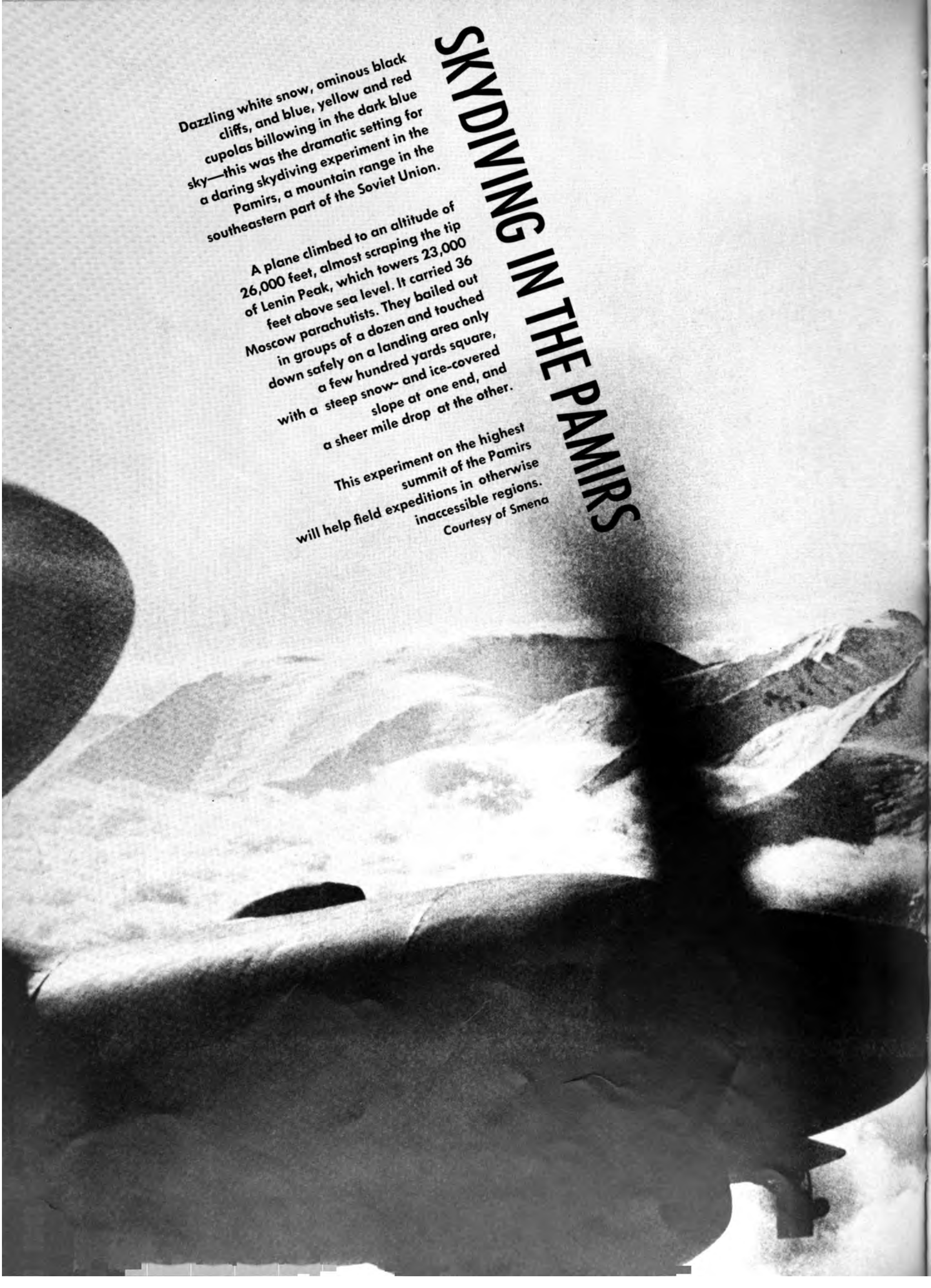
SKYDIVING IN THE PAMIRS

Dazzling white snow, ominous black cliffs, and blue, yellow and red cupolas billowing in the dark blue sky—this was the dramatic setting for a daring skydiving experiment in the Pamirs, a mountain range in the southeastern part of the Soviet Union.

A plane climbed to an altitude of 26,000 feet, almost scraping the tip of Lenin Peak, which towers 23,000 feet above sea level. It carried 36 Moscow parachutists. They bailed out in groups of a dozen and touched down safely on a landing area only a few hundred yards square, with a steep snow- and ice-covered slope at one end, and a sheer mile drop at the other.

This experiment on the highest summit of the Pamirs will help field expeditions in otherwise inaccessible regions.

Courtesy of Smena





SKYDIVING IN THE PAMIRS



Even on a frozen slope, this skydiver finds his return to Earth most pleasant.



Anything can happen in the mountains: Parachutists must also practice climbing.





Before their flight, the jumpers are briefed by Alexander Petrichenko, Master of Sports.





The plane hasn't taken off yet, but Valentin Kalinkin is psychologically prepared.



"Eight other people are taking the same chance."—Five minutes before the takeoff.



"This is the way you find the camp." An alpinist radios instructions after the landing.

QUERIES FROM READERS

Many of our readers have been sending in questions about the views and aspirations of Soviet youth. The following are among those asked most often:

QUESTION: Are Soviet youth as interested in politics as they were 10 or 20 years ago?

ANSWER: No question about it. As a matter of fact, young people all over the world have become more politically active.

As far as Soviet youth are concerned, one may say that throughout our entire history they grew up in the midst of crucial political events. First there was the Revolution which confronted young people with a decision: Were they for it or against it? The overwhelming majority hailed the October Revolution and took up arms to defend it. Then came the years of rebuilding the war-torn country, when young people worked selflessly and tirelessly, building and studying at the same time. The Great Patriotic War of 1941-1945 tested the political maturity of the youth, a test they passed with honor. This was followed once again by years of reconstruction. And for the picture today, a glance at the Soviet press will demonstrate how active young people are in the country's economic, cultural and political life.

Of course you can say that at a crucial period of a nation's history all sections of its population, the youth included, are drawn into political activity. But what about the period of relative calm which follows, like the one between the end of the Second World War and the present? Has there been a demonstrable drop in the political activity of Soviet youth? Facts show the opposite.

Part of the explanation lies in the fact that our educational system is so extensive, and education, we know, is one of the prime requisites for conscious political activity.

Another part of the explanation is that young people are encouraged to be active in politics. We find them working side by side with adults in every field of endeavor. Students, for instance, have their own organizations for self-government. Through the trade unions and the Young Communist League, young workers help frame the production policy of their factories. In our country the trade unions and the YCL have the right to initiate legislation. Our election laws make it possible for thousands of our young people—farmers, factory workers, engineers, teachers—to be legislators. They serve in village and city Soviets and in the country's highest legislative body—the Supreme Soviet.

The continuous process of democratization of our society opens up ever larger opportunities for the youth to be politically active.

Young people are by nature more impatient and critical and are apt to go to extremes. But there seems to be a large pinch of sober thinking mixed with their natural enthusiasm, which enables them to make correct political judgments. That was true 20, 30, 40 and 50 years ago. It is true today.

QUESTION: Do Soviet youth see a contradiction between communist ideas and the reality?

ANSWER: There is always a gap, up to a point, between an idea and its application. The contradiction between the end desired and the end achieved is the motivating force of progress.

It has taken the effort of more than one generation to put communist theory into practice. But what has already been achieved shows the youth how valid the theory is. Many things have already become so much a part of everyday life that they are no longer noticed, social equality, for instance. Only 50 years ago Russian society was divided into social groups with rights and privileges almost as rigid as those of feudal society. Now we take for granted the social equality of all people, regardless of their race, nationality or religion.

But we still have differences in wage levels and living standards, this in spite of the fact that we have done away with the chief obstacle—private ownership of the means of production. This is one of the features distinguishing socialist society from communist society.

In relationships between people the accepted principle of our society is brotherhood, respect for others, but we cannot say that we have rid ourselves of all callousness, bureaucracy, greed, crime and other such vicious accruals of the ages. There are gaps between the real and the ideal in other spheres of life as well. But as we develop and mature, we gradually bridge these gaps and begin to approximate the ideal. This is what convinces us that we have taken the right path.

The ideas of scientific communism have moved the minds of men for more than a century now. In our country they have become mass ideas. And even in the first years of Soviet power, when chaos and ignorance surrounded us, the young people eagerly began to build socialism. Many people thought then, in simplistic terms, that communism, the highest stage of socialist society, was around the corner. In reality, the transition period has yet to be completed.

Despite all this, the enormous economic and cultural progress the country has made in the last half-century is right there to be seen. Taking a close look at their contemporaries in other countries, our young people witness the birth of a new psychology, the psychology of the member of a collective. All this gives them reason to believe in the practicality of the communist ideal. They come to understand that great efforts are still needed to achieve that ideal, but only weaklings fall away every time the ideal has to meet the test of harsh reality. Strong-willed and purposeful people set out to remake this reality into something closer to the ideal.

QUESTION: Do Soviet young people prefer communist society to any other?

ANSWER: Yes. They understand that socialist society is the most successful model of a human community the world now has. They can see and compare different forms of society.

Our young people no longer have any ties with the capitalist system. They were born under socialism, in Soviet times. Everything they now enjoy—free education, free medical services, wide-open opportunities to develop their abilities, a rapidly rising standard of living—all this was given to them by socialist society.

They know enough of the way of life and living standards in countries with a different social system to compare the advantages and shortcomings. Although our country has not yet caught up with the most developed countries of the West in living standards, our young people are aware of the advantages of the Soviet system and the opportunities it offers and therefore prefer to live in a communist society. Questionnaires conducted by sociologists and the youth newspaper *Komsomolskaya Pravda* confirm this once again.

The interest the developing countries are taking in socialism offers additional evidence that the socialist way of life is the best alternative in our present-day world.

Our youth soberly appraise the achievements of the West and just as soberly assess our deficiencies. Nobody in our country believes that "everything we have is good, and everything foreign is bad." It is a question of the principles by which a society lives. We may have our differences on the details of how a communist society should function, but there is not an iota of disagreement on such basic principles as the ownership of the country's wealth by those who produce that wealth and the freedom and equality of all people.

QUESTION: How do you teach the youth to understand what happiness really means?

ANSWER: Everybody has his own definition of happiness. To one it means absorbing work, to another a tranquil existence, to a third a satisfying personal life. So that the word "teach" is hardly relevant here.

Consider the history of mankind's search for spiritual values and you find that the best minds have always seen happiness in service to the people. Goethe's Faust did not find happiness in his own circumscribed world and turned to the larger world outside. And he appealed to time to stop at the moment when he found happiness in working for the good of others.

There are people who are motivated by this ideal in every country. A young Soviet citizen who finds happiness in the active struggle for the welfare of society serves the cause of communism as well. We should like to see many more such people. Our whole system of education is geared toward this end. But we are educating living people, not robots. And our purpose is not to make them obey orders but to so educate them that they will live happy lives, that they will be inspired by humanitarian ideals.

There is no question but that the whole of our ethics tends to make people see happiness in service to the people. But that does not deny the role of love, of family relationships, of recreation and amusement, and of everything else that we include under the heading "personal life."

QUESTION: What professions attract young people today? How much differ-

ent were the choices they made 10 or 20 years ago?

ANSWER: A career is largely a matter of individual choice. An objective answer to this question would require a comprehensive sociological survey. There are certain choices we can more or less foresee even without research: Many pretty girls, for instance, aspire to a stage career, and there are a large number of applicants for medical colleges. Those are constants; they repeat themselves year after year.

But, in general, each decade brings new choices. Now, for example, hundreds of thousands of young people take construction jobs in Siberia. This was true earlier, but the numbers were not nearly so great because the scale of construction was much smaller. The scientific and technical emphasis of today's world attracts young people to such specialties as cybernetics, electronics, automation, biophysics and space research. A career in the sciences, particularly in mathematics, computer engineering, physics, biology and chemistry, draws young people. Aviation, not to speak of cosmonautics, remains a favorite. Next in popularity is engineering, with geology and geography close behind.

Lately the humanities, sociology, philosophy and economics have begun to interest young people more, explained by the fact, perhaps, that mankind has begun to do more serious thinking about itself.

The choices range from professions born only yesterday, like computer engineering, to those as old as man himself, like teaching, and are as varied as individual interests and abilities. But the opportunity for choice and for training is there, wide open to everyone.

QUESTION: What is the present policy of the Soviet Government in regard to gold, silver and precious metals as well as rare diamonds and other gems? Nowadays most countries have abandoned the gold standard. How does the Soviet Government handle this problem? (Louis M. Goren, Brooklyn, New York)

ANSWER: We do not have the gold standard either, meaning that there are no gold coins in circulation. We have in circulation: first, notes of the USSR State Bank with a nominal value of 10 rubles up, which are guaranteed by gold, precious metals and other assets of the bank; second, State Treasury notes with nominal values of one, three and five rubles, which are guaranteed by the country's entire wealth and are obligatory tender throughout the country; and third, coins. The fact that there is no precious metal in circulation does not mean that the ruble has no gold content. As a matter of fact, since January 1, 1961, it has been 0.987412 gram of pure gold.

As everywhere else in the world, we use precious metals and gems not only as monetary equivalents but also for personal adornment, and rather widely at that. Jewelry shops offer gold, silver, diamonds, rubies and other valuables for sale, and people buy them. Besides the ordinary jewelry stores which sell new things, there are secondhand and antique shops for fanciers of the old and rare. Here valuables are bought and sold according to fixed state prices. Hence, gold articles currently in private possession can be sold to provide a source of revenue for some period. But looking ahead to communism, when money will no longer be in use, gold will have [illegible] and esthetic value.

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Front Cover: Audiences all over the world agree there has never been a clown like Oleg Popov. Photo by Yuri Somov.

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By Alexander Avdeyenko

THE RINGMASTER appears, spruce and elegant as a fashion plate in the focus of varicolored spotlights. The fanfare rends the tense, expectant silence. All customary judgments of customary things vanish from our minds together with present and future worries, yielding place to a bright and wonderful world of surprise and paradox.

It is a world in which people try, literally and figuratively, to turn everything upside down, in which people do not walk on floors but on highstrung wires, where hares hunt foxes and foxes guard chickens, tigers lovingly lick does and does dance waltzes.

It is the world so utterly and devotedly loved by children, the world which turns grownups into children with magic ease, the world which never withers in spite of its advanced age, because the law which governs its existence is constant rejuvenation, unceasing movement, eternal rotation.

Within the range of all eyes, ideal in its simplicity, the circus ring reproduces that most perfect form of Nature—the closed circle. Its diameter is a constant 14 yards. This is the living space required by those eternal nomads who travel from city to city and country to country, forgetting for long months the comforts of their homes. It is their enchanted circle.

FROM SHOW BOOTH TO BOLSHOI CIRCUS

For many centuries circus artists were the stepchildren of the performing arts, stoically bearing their cross of show-booth jesters who all but burst in the effort to amuse the crowd. The circus was acknowledged a good show, sometimes gay, sometimes coarse, sometimes cruel, but one Apollo had never blessed with a single of his Muses; and so it was relegated to the back yard of the arts. The Russian circus had no more honored a place than any other.

But the circus was appointed to glorify the harmony of the human body, the unlimited potentialities of the human spirit. Said the young Karl Marx:

"When we see the back of an individual contorted by fear and bent in humiliation, we cannot but look around and doubt our very existence, fearing lest we lose ourselves. But on seeing a fearless acrobat in bright costume, we forget about ourselves, feeling that we have somehow risen above ourselves and reached the level of universal strength. Then we can breathe easier."

The circus had a hard time of it in the first years after the October Revolution. In those busy days of reshaping the old world, there were people who wanted the circus discarded; they called it a freak art advocating brute force. They cited (not without grounds) the poverty and provincialism of circus programs, their fake artistry. We can deprecate the maximalism of these denouncers, but their objections were well founded. The progressive figures of Russian culture, led by People's Commissar of Education Anatoli Lunacharsky, refused to go along with this wholesale condemnation.

Paradoxical as it may seem, the Russian circus was largely indebted for its existence to its foreign guest performers. In the twenties, the Russian circuses were flooded with star performers from other countries, some of them world-famous. They with the matchless Russian clown and acrobat Vitali Lazarenko, and the animal trainers Anatoli and Vladimir Durov, attracted both audience and budding artists to the circus ring.

When the young Soviet Republic, clamped in the vise of the economic blockade and lacking foreign currency, was forced to break contracts with the foreign performers, the Soviet circus got up on its own feet.

Aside from performers, beginning stage designers, directors and poets joined it. The first Soviet circus programs were put together by Vladimir Mayakovsky and Vsevolod Meyerhold, Sergei Eisenstein and Alexei Diky. It was in the circus that Vadim Ryndin, present chief designer of the Bolshoi Theater, and the late Nikolai Akimov, who was artistic director of the Leningrad Comedy Theater, got launched on their careers. The now eminent film directors Grigori Kozintsev and Sergei Yutkevich also tried their hands at circus directing. Sergei Konenkov worked in a circus and now, in his nineties, recalls that distant time with pleasure. Alexander Rodchenko, the painter, produced a whole series of paintings and drawings on circus themes.

Today the Soviet circus, like the Bolshoi Theater, is also called Bolshoi in many countries of the world. In the past season alone, 30 Soviet circus companies gave 1,100 shows abroad, attended by three million people. In the Soviet Union the annual number of circusgoers is 35 to 38 million and the Moscow jubilee circus program alone was viewed during its six-month run by one million spectators.

THE NEW CIRCUS

The Soviet circus proceeds from the assumption that its high versatility must be directed not toward tickling the nerves, but toward displaying the human being in all his harmony. It does not pander to base emotions, and its dramatics is life-asserting. To the circus artist his profession is always risky, not only because of the great complexity of the tricks he performs, but also because of the complexity of the apparatus he uses: A faulty piece of apparatus is always a grim possibility. The danger is real enough to require no hyperbole. The bills of the twenties featured such acts as "Mortal Flight," "The Suicide," "In the Grip of Death." The audience watched the show with open-mouthed awe, gasping in chorus and sighing in relief when an act was over. In the majority of cases this was what the circus called "selling an act." The accent was on the risk.

Fyodor Knorre wrote a sad, gently humorous story about an animal tamer who performed a "mortal" act in a cage with 50 lions. As the man grew old, his lions died until finally only one—the tamest of all—remained. This lion went on "attacking" his master who "miraculously" quelled it. The audience almost passed out with fear, and afterward showered the tamer with flowers as he left by the stage door. But once he slipped and fell before the lion had begun attacking him. He was too ill and tired to pick himself up. The lion, sensing his master's shame, approached and began to lick him fondly. The audience guffawed and catcalled. It would forgive neither the deception nor the weakness.

TAMER OR TRAINER?

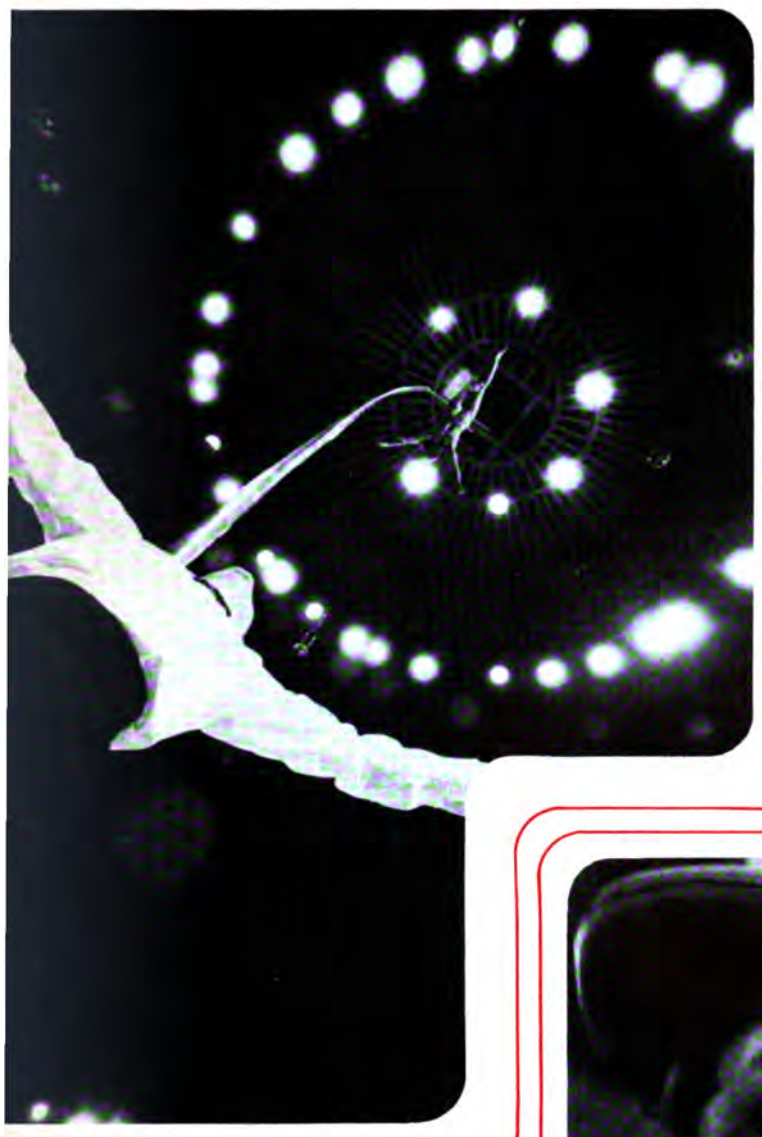
I recalled this story when I watched the show of my friend Walter Zapashny, the animal trainer. His tigers, lion, panthers and lynxes "worked" at a phenomenal tempo, demonstrating cascades of marvelous tricks. Walter himself, in silk shirt and slacks, played with them as though they were kittens. He lay on a striped carpet of tigers, carried a lion (550 pounds) on his back, had a lynx beat a drum, lay rocking on a wire while panthers and tigers leaped over him from pedestal to pedestal, and a lion lay under him! All this interspersed with jokes and games with the beasts. There in the cage was a fearless man who took pleasure in showing he was more powerful than the fierce beasts of prey—and the circusgoers dispersed with smiles.

There were a few people who knew, however, that on the day of his debut in the circus of Kalinin several years before, the tigress Bagira had attacked Zapashny from behind, and he had spent months in the hospital recovering from the 26 wounds. But the first thing he did on returning to the circus was to enter the cage of this same tigress. Nor do many people know that the beast that retreats from Zapashny on her hind legs is Bagira, and that (he says so, and he should know!) she has forgotten nothing and has to be watched carefully.

Once after a show, when the audience had gone, Walter Zapashny brought his charges out for a rehearsal (animal trainers rehearse after a show while the cage is still in the ring, so as to force the beasts to go through the tricks they muffed during the performance). He wanted to show me a new trick. He let two new tigers into the cage, and the old ones immediately sprang at them. Such an uproar and bloody scrimmage ensued that my hair stood on end. The jungle had never seen anything so bloodthirsty.

In that bedlam Walter Zapashny rushed between the enraged beasts, pulled them apart, gave commands, while high up on their pedestals the panthers bristled, a lynx crouched ominously, and a lion yawned suspiciously. When passions had abated, Zapashny forced the beasts to go through the whole act; it was to make them "toe the line." To my question, why he had stayed in the cage during the scramble, he replied:

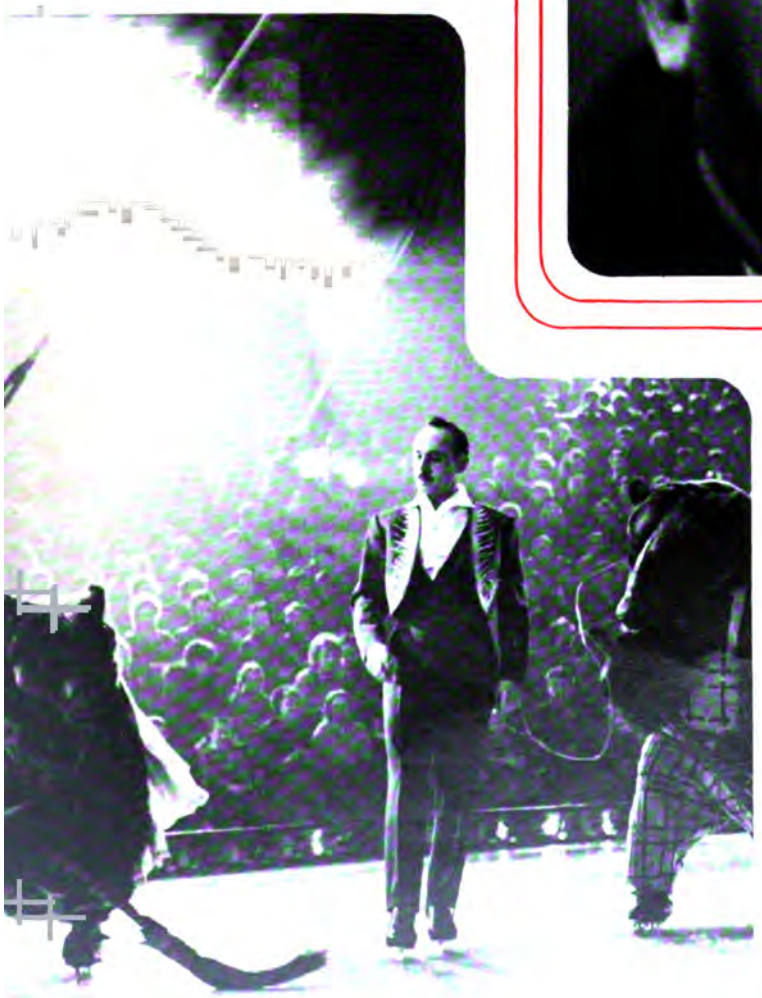
"If I had run out, it would have been the end of me as a trainer. The animals would have known I had cold feet."



A pole balancing act by Rose and Yuri Polovnev. No contrived dangers are added to the real ones.



Circus clown Yuri Nikulin, who is also a film actor, brings a topical approach to his work.



Anatoli Mayorov referees the unique hockey team he has trained—manned by bear players.

The next day—I went there intentionally—he was his old gay and carefree self, managing the animals as though it was pure play.

The Soviet circus artist forces the spectator to see not the risk, but the triumph of human reason and human power.

In the old circus bears were taught to wrestle, and their tamers played up the beasts' ferocity. Now Bruin rides a motorcycle and bicycle, drives a car and even plays . . . ice hockey! He wears ice skates, wields a hockey stick and swings a puck into the goal which is kept by another bear as versatile as Martin or Icolla. Standing by, as the experienced referee should, is Anatoli Mayorov, the author of this remarkable act.

Formerly, an artist working with wild animals was called a tamer. Now another term—trainer—is preferred. Among the top Soviet trainers of lions and tigers are Margarita Nazarova and Irina Bugrimova, whose brilliant acts match anything staged by the stronger sex. A trainer's skill is composed of large parts of courage and even larger parts of patience. For instance, Vladislav Varyakoyene works with ordinary pigs, and Muza Kasyanova has an act with graceful goats that is as unexpected as it is unique.

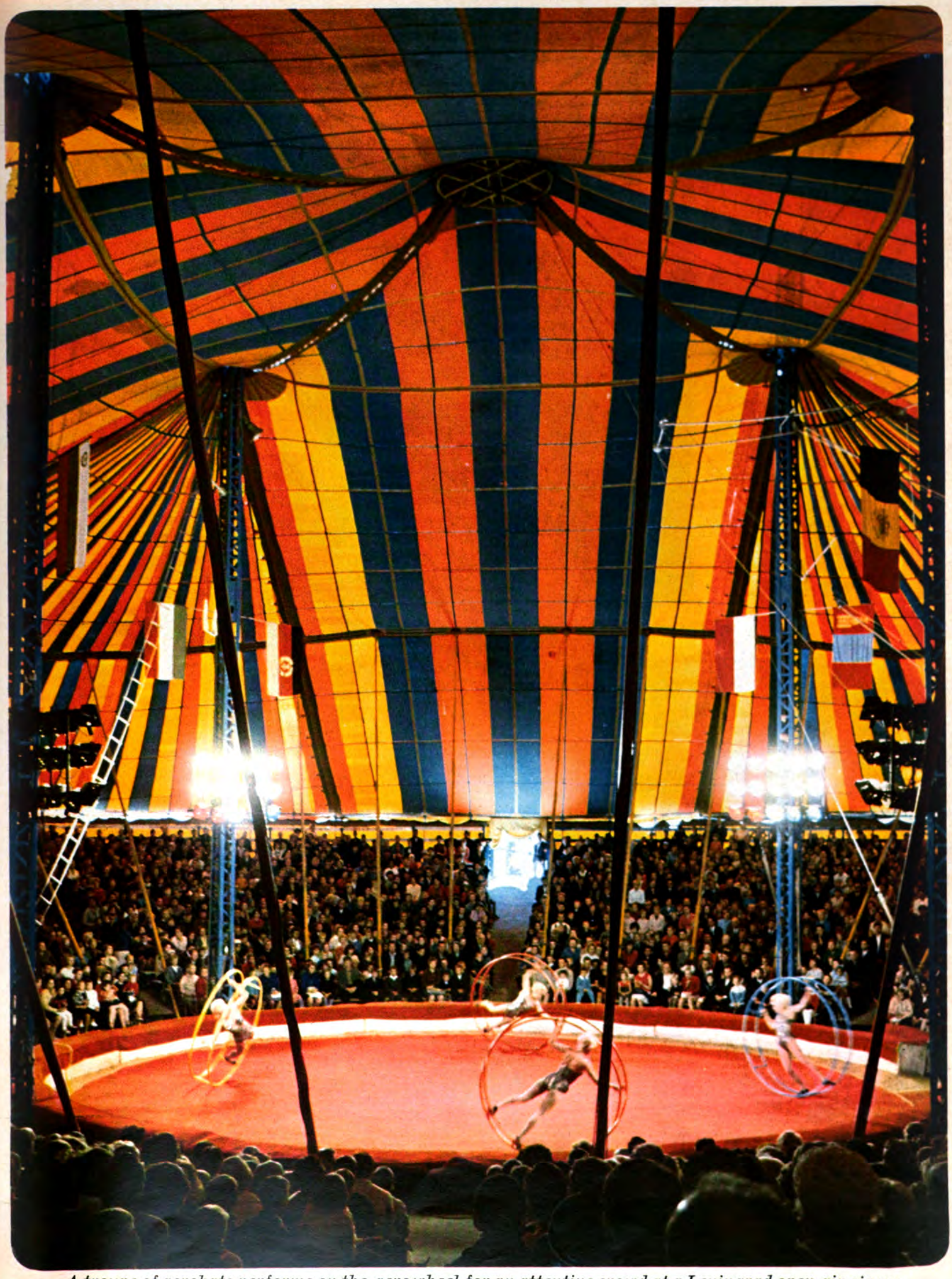
The source of all these successful acts is the scientifically based school of "painless training." But experience is also highly important. Who would think the size of the pedestal on which Boris Eder's lions squat is of any significance? But it appears this veteran Soviet animal trainer found that an area of 16 x 24 inches was big enough to seat a lion, but uncomfortable enough so the animal is only too happy to abandon it at his trainer's command. It is from these trifles, these unraveled secrets, that the unobtrusive style of the masters is composed, a style that always thrills the circusgoers.

SPEED, ELEGANCE, PRECISION

Elegance of style has become part and parcel of the present-day programs. The circus insists that it be considered high art. The program of the Leningrad Music Hall includes a clever parody of the circus tent show of the early years of our century. One of the acts in this show, the muscle act, is resolved with genuine brilliancy. The affected poses and tricks are exaggerated. For instance, as he balances a massive table (6.5 x 5 feet) on the bridge of his nose, the artist tosses it into the air from edge to edge. It is a completely senseless and vulgar act, and inordinately difficult besides. Such was the circus of our grandmothers and grandfathers. Nowadays it arouses an amiable laugh.

The muscle acts are gradually giving way to other types of tricks. Artists of the older generation are still working with perches; they support whole families and assistants on their legs and shoulders. But of late the artists' movements are becoming faster and more complicated to include the dynamics of aerial flights, cascades of acrobatic numbers and lightning juggling.

The name of acrobat Vladimir Doveiko and his group has been famous for almost three decades in the Soviet Union and abroad. His is a marvelous career. Born into a circus family, he grew up in the



A troupe of acrobats performs on the aerowheel for an attentive crowd at a Leningrad open-air circus.

Circus on Ice *(at right), now touring Europe, features these comely performers as well as skating bears (page 8). Below: For his violin playing and other skills, Leonid Yengibarov was twice named the best clown in Europe.*

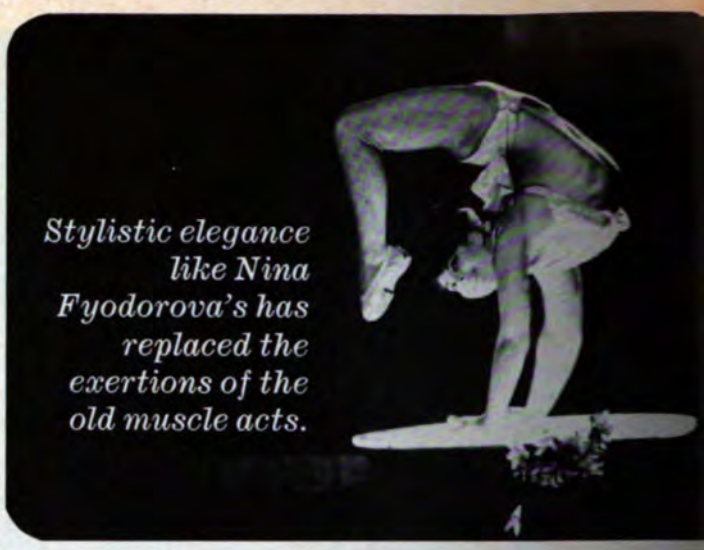






"My own brand is safer."—
Circus clown Karandash (below) warily examines his prop. He is a sensitive craftsman whose stage image—naive, kind-hearted, clumsy—reminds his audience of Chaplin's.





Stylistic elegance like Nina Fyodorova's has replaced the exertions of the old muscle acts.

Trainer Valentin Filatov plays up his bears' versatility rather than their ferocity.

Jack-of-all-trades Oleg Popov— ropewalker, clown, inventor— does his famous loose-rope trick.



The assurance and precision of this monkey chorus line reflect the "painless training" method.



The girls on the trapeze were lovely, the audience enthusiastic . . . the Khazov Sisters turn gymnastics into circus magic.

circus ring and in the thirties won a reputation as the strongest acrobat in the Soviet circus. The only time he left the ring was during the war with fascist Germany, and then he became commander of a long-range bomber. But he did not give up the circus for the duration. In Goering's archives instructions were found ordering that special efforts be made to down a plane with a laughing clown painted on its fuselage. The "jokes" of that clown proved weighty enough—its bombs always reached their target.

No less precisely does Vladimir Doveiko hit his peacetime targets. He is world record-breaker of the triple somersault with pirouette. Doveiko demonstrates some tricks with such reserves of strength that he gives the impression of a human rocket.

Vladimir Zamotkin, leader of a group of jumping acrobats, has a style like Doveiko's. The similarity is not surprising, for Zamotkin worked for several years under Doveiko. Both are bird-men, men with springs in their feet, who leap off the ground like balls and have their bodies under perfect control.

To see people like themselves act with perfect control—this is what attracts the circusgoer. Phenomenal discipline and apparent lightness of effort is law for the circus artist. In no other art form is there so exacting an approach to mistakes. You will sometimes see the line of the Bolshoi's corps de ballet break. In the circus this is impossible. If the catcher misses by a single inch, the gymnast or acrobat will fall irremediably. If the juggler stumbles, all of his paraphernalia will land on his head. If an animal trainer is inattentive. . . . He had just better not be.

Careful estimates checked by years of daily work bring the possibility of a mistake down to almost zero.

Once a veteran circus stage director, who had literally been through fire and water (he staged water scenes and acts in which the artists were "burned"), the witty and ironic Arnold, told me what he thought was the essence of his art: "Circus performing is a conscious overcoming of ingenious difficulties you yourself invent."

His latest work, *Circus on Ice,* is a brilliant dramatization of this definition. Arnold says that in this age of cosmic speeds, he is irritated by the inevitable pauses between acts. He decided to expedite the circus motion by turning the ring into a skating rink, and all the participants of the show into skaters, including the above-mentioned bears of Anatoli Mayorov. Arnold did just that. His production is no ballet on ice, but a real circus show. Only the jugglers, musical eccentrics, aerialists and tumblers had to contend with greater difficulties. *Circus on Ice* has already played in Belgium, the Netherlands, Japan and Poland. It has appeared before Muscovites and Leningraders, and enjoys so much popularity that foreign producers have engaged it for five years in advance.

VIRTUOSO CLOWNS

There is hardly a country which the envoys of this art have failed to tour. For many circusgoers abroad, the Soviet circus is personified by Oleg Popov, the "Sunny Clown," as a Finnish newspaper, I think, first called him. With his golden crop of hair and radiantly shining face, Oleg Popov is the very incarnation of *joie de vivre,* frankness and sincerity. His simpleheartedness and charm win everyone. Nor is he merely charming. He is a scintillating master of many genres: a juggler, equilibrist, ropewalker and Jack-of-all-trades, for he himself invents his tricks and makes the properties for them.

However, Oleg Popov is not the only master clown of the Soviet circus.

A naive, sweet, sentimental, kindhearted and clumsy little man is the image created by the renowned veteran Karandash. This past season Oleg Popov and Karandash performed for the first time on the same program. It was a fete of clowning, a competition between two masters, with the circusgoer the victor.

Sixty-two-year-old Karandash featured one of his old acts, a scene resolved in the Chaplin manner. A man returning from the baths has all sorts of funny things happen to him. For some three minutes he tries to catch his cake of slippery soap. So pitifully does he follow it around the ring that you feel a lump rising in your throat. He stains his clothes against a fresh-painted bench and, when changing, finds himself enmeshed in the new clothes. The circus rocks with Homeric laughter. It is impossible to describe everything Karandash does: Everything he does is so simple and fine.

He is an incomparable master of improvisation, although he works very painstakingly on each act. Once during a performance of the circus in Sochi, it began to rain so hard that the water broke through the flimsy roof and poured into the ring. The show had to be stopped for some 20 minutes. Karandash walked out into the ring with a frying pan and began to scoop up the water, jumping over the pools and teasing the spectators huddled against the rain. It was a kaleidoscope of happy finds.

His real name, Rumyantsev, is known by few, and outside the ring he is not very much like his circus self. Once in a post office, when he was showing his passport to receive some money, the cashier glanced at the ink-stained photograph and then at Karandash, and said, "You know, it's not a very good likeness." Karandash dipped his finger in the inkwell and smeared his cheek with it, saying, "Is this more like it?"

Still another popular Soviet clown is Yuri Nikulin, an artist who can be both tragic and comic. A few years ago he appeared in a tragicomic role on the screen in *When the Trees Were Big*. He has also been featured in film comedies, both lyrical and eccentric. The movies are trying to lure Nikulin away from the circus, but he is holding back. There was a time when the Moscow circus school would not admit him, finding his expression too dolorous even for a circus clown!

Nikulin is a man who reflects a great deal upon the art of the circus and art generally. He is a representative of the intellectual trend in the modern circus. His acts are topical and caustic.

The circus has changed. Its artists, who used to take over their acts from their fathers and grandfathers, are now products of a circus school which has been graduating performers for over 40 years. Karandash is a graduate. At night aerialist Yulia Bubnova wins applause floating under the cupola of the circus, and during the day she is busy writing her dissertation for a master's degree at the State Institute of Theatrical Arts. Animal trainers Boris Eder and Walter Zapashny, like many other artists, are writing books. Historians of the performing arts defending their doctoral dissertations no longer have to prove that the circus is high art.

A craneman's view of work on the experimental giant steel manufacturing plant at Novolipetsk.

STEELMAKING GIANT

by Vladimir Illesh

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STEELMAKING GIANT

by Vladimir Illesh



Glowing stacks light the evening sky of Lipetsk, a metal center since the time of Peter the Great.

THE NOVOLIPETSK METALLURGY COMPLEX is probably the country's most dramatic construction project for 1969. The broad-band rolling mill now being built at Lipetsk will increase the Soviet Union's rolled steel output by 20 per cent and cover the basic sheet-steel needs of the machine-building industry in the central part of the country. Let alone other economies, cutting the shipping costs of steel from the Urals is expected to save an annual 15 million rubles.

Sheet steel earmarked for the car-building industry will account for a third of the output. This rolling mill is the spearhead effort; projected are 45 large units.

"We've never built anything as big as this," say the men in charge. The structure is unique. In the near future it will roll cast slabs obtained by continuous pouring of steel at the unheard-of speed of 45 to 55 miles an hour. Powerful automats will form these steel bands into rolls weighing up to 39 tons.

A measure of the scope of automation is the electricity that the rolling mill's engines and other equipment will consume—enough to light a city of three million. A special reservoir 20 square miles in area is being built to provide the plant with water. Gone is the quiet of the old Russian town of Lipetsk. Once famous for its curative muds and its apples, Lipetsk is now known for new technological processes, the new steelmaking equipment being installed.



Steel for cars will soon issue from this king-sized broad-band rolling mill, with the help of a private reservoir and enough electricity to light a city.

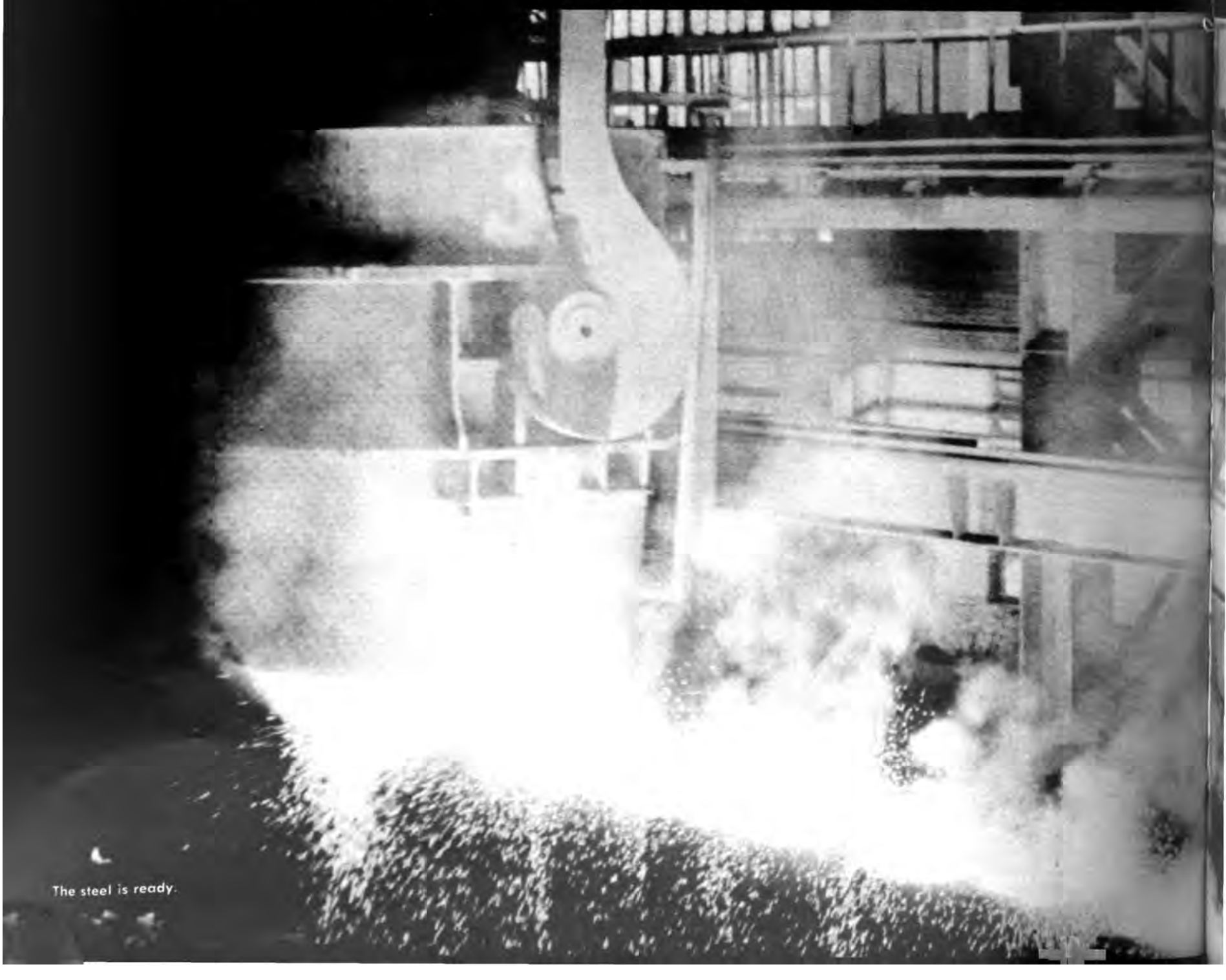
Why Lipetsk?

Why, indeed? One reason is historical. The fact that it is a traditional metallurgical center, old and not very big, but famous for its steelmakers, certainly played a role. The town's heraldic shield includes, along with an ear of corn, a black square to signify metallurgy.

There is a modest but interesting monument on one of the shady streets of Lipetsk, a black iron obelisk surrounded by molds for casting church bells. The bas-relief on the pediment shows a forge, an anvil and a hammer. Bearded workers in leather aprons are forging a lightning bolt, the symbol of faith in the triumph of human reason.

The monument was erected by the citizens of Lipetsk in memory of Peter the Great, who founded a metal industry in this fertile black earth region, with its century-old tradition of farming. This is where the steel was made for the new army and navy Peter was building. Lipetsk steel was also used to forge plows, harrows, sickles and scythes.

It was not the fate of Lipetsk to become a large metallurgical center then, in the eighteenth century. Its second birth came in the thirties of this century. Today Lipetsk is really coming into its own as a steel center, so much so that it bids fair to eclipse the older metallurgical centers of the Urals and the Kuznetsk Basin in Siberia. The



The steel is ready.



Novolipetsk mill has grown into one of the country's largest iron and steel plants.

Geography also contributed to the rapid development of Novolipetsk—the proximity of the rich Kursk iron ore basin, the massive limestone deposits and the Donets coal basin.

A Laboratory

The plant is not only a production unit. It is emerging as an experimental base, a gigantic laboratory for everything new in ferrous metallurgy. Many bold technical answers to problems agitating engineers in the Soviet Union and other countries are checked in practice. Here, for the first time anywhere, smelting and pouring were combined in one continuous cycle.

To cover all the pioneering techniques used at the plant would take more space than we have. Here are a few of the more interesting ones.

Blast Furnace No. 4. Unlike the usual blast furnace which has one outlet, this one has two for cast iron to get an uninterrupted and steady flow of the liquid metal. A whole array of automatic devices replaces manual operations. At the usual furnace each of the several gauges and instruments have to be checked for changes; in this new furnace the information is processed automatically to help the foreman choose the optimal operation parameters.

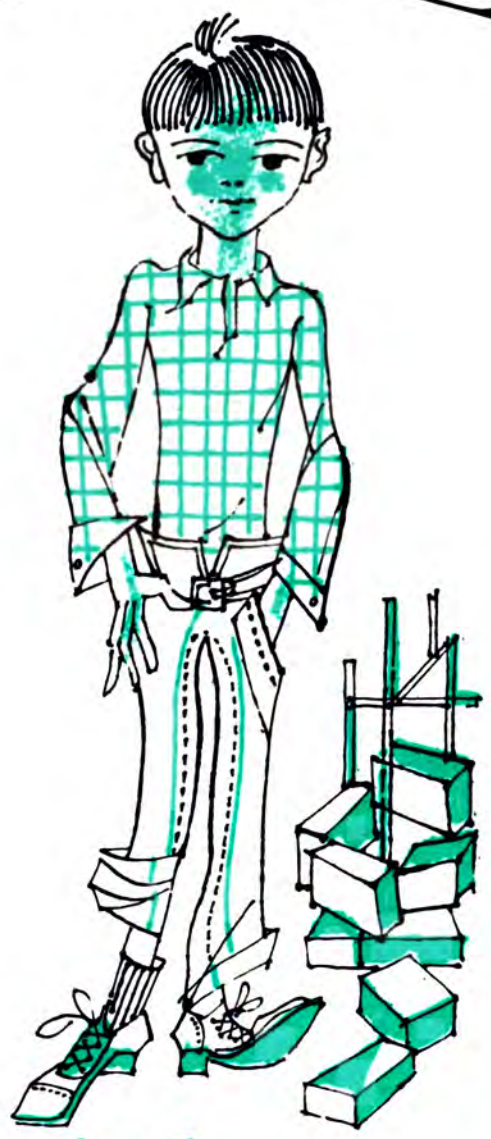
Converters. These gigantic pear-shaped vessels are the critical elements in the next stage of the metamorphosis the metal undergoes at the plant. The whole operation of charging liquid cast iron and blowing air through it takes less than an hour. At all stages the production cycle is nonstop. From here ready steel goes to continuous pouring plants (such plants were first built in the USSR, and the license has since been bought by many countries, including Japan, the Federal Republic of Germany and France).

What comes out of the continuous pouring plants are steel slabs. Some of the slabs are shipped as semifabricates to other enterprises, domestic and foreign; the rest are processed on the spot, in the plant's shops, many of which, like the blast furnace and oxygen converter shops, are firsts in the field.

Transformer steel cold rolling shop. Its total floor space is big enough to accommodate several stadiums the size of the now world-famous Aztek in Mexico. But what makes it uniquie is equipment, not size. It is fully automated, and production is controlled by the latest computers. The transformer steel produced here is exported to dozens of countries.

Almost daily the plant gets new devices to try out. They range from gadgets to measure the level of dust, to new protective helmets, to the latest thing in computers. The idea is comprehensive automation, the goal of metallurgists the world over.

GREENISH LEOPARDS



MISHA AND ALENA AND I were working in the sand near the house manager's office, building a pad from which to launch a spaceship. We had dug a pit and lined it with bricks and broken glass, leaving an empty space in the middle for the rocket. I brought up a pail and put the apparatus in it.

Misha said, "We ought to build a passage to the side, under the rocket, so there will be a place for the gas to escape when the rocket takes off."

We started digging again, but we soon grew tired because there were a lot of stones.

Alena said, "I'm tired. Let's take a break."

And Misha said, "Right you are!"

We sat down to rest.

Just then Kostik came out of the second entrance. He was so thin we hardly recognized him. And pale, without any tan.

"Hello, there," he said, coming up to us.

"Hello, Kostik," we replied.

He slowly sat down beside us.

I said: "Why are you so thin, Kostik? You look like a skeleton."

He said, "I had measles."

Alena looked at him. "Are you all right now?" she asked.

"Yes," said Kostik. "I've completely recovered."

Misha moved away from Kostik. "It might be catching," he said.

Kostik smiled. "Don't be afraid. I'm not infectious. The doctor said yesterday that I could play with other children."

Misha moved back to his old place.

"Did it hurt when you were sick?" I asked.

"No, it didn't hurt," Kostik replied. "But it was terribly dull. Otherwise it was all right. I was given some transfers and I worked on them all the time. I got so tired of it."

By Victor Dragunsky

Drawing by Alexi Tertyshnikov

"It's fine being sick," said Alena. "When you're sick, you always get presents."

"You do when you're well, too," said Misha. "On your birthday and when there's a New Year's fir tree party."

"And when you pass to the next grade with all excellent marks," I said.

"Nobody'll give me presents," said Misha. "All I get is satisfactory marks. And when you have measles the presents aren't much because they have to be burned afterward. Measles is a bad sickness. It's quite useless."

"Are there good sicknesses?" Kostik asked.

"As many as you like," I said. "Take chicken pox. That's a fine sickness, besides being interesting. When I had it, every sore on my body was smeared with some green stuff. I looked like a green leopard. That's not bad, is it?"

"Of course not," said Kostik.

"Ringworm is also a pretty sickness," said Alena, looking at me.

"Pretty!" Misha laughed. "What's pretty about it? There are only two or three spots to smear, and that's all. Ringworm's nothing. Flu's the best. When you have the flu you get tea and raspberry jam. As much jam as you want. You wouldn't believe it. When I was sick once I ate a whole jar of jam. Mummy was surprised. 'Look at that boy,' she said. 'He has the flu and a temperature, and yet his appetite is unbelievable.' But Granny said, 'There's different kinds of flu. He must have a new kind. Give him some more jam. His body needs it.' So I was given some more, but I couldn't eat it. It was such a pity. The flu must have affected me."

Here Misha propped up his chin on his fist and gazed into space.

"Flu is a lovely sickness," I said. "But tonsils are better. The two can't be compared."

"How's that?" Kostik asked.

"When you have your tonsils out," I said, "you get ice cream afterward to freeze things up. You can have your jam!"

"What do you get tonsils from?" Alena asked.

"From a cold. They grow in your nose like mushrooms because it's damp there."

"A cold is not much of a sickness," said Misha with a sigh. "They drop something in your nose and it runs even worse."

"But if you have a cold you can drink kerosene," I said. "You won't be able to taste it."

"What do you want to drink kerosene for?"

"Well, not really drink it," I said. "Just to take in your mouth. A conjurer will take a mouthful, pick up a burning stick, and then spit the kerosene onto the stick. It makes a beautiful fountain of fire. The conjurer knows the secret, of course. You couldn't do it without knowing the secret. It wouldn't come off."

"In the circus they swallow frogs," said Alena.

"And rats too," said Kostik. "To make everybody laugh."

"And crocodiles too," Misha added.

I roared with laughter. What a thing to think of! Everybody knows that crocodiles have horny scales. How could you eat one?

"You're crazy, Misha," I said. "How are you going to eat a crocodile when he's so hard? You couldn't possibly bite through him."

"But if he's boiled?" Misha asked.

"No crocodile would let you boil him," I said.

"Crocodiles have lots of big teeth," said Alena. We could see she was scared.

"Crocodiles eat their tamers every day," Kostik added.

"Really?" Alena asked, her eyes growing round as buttons.

Kostik did not answer. He only spat to the side.

Alena made a wry face. "We were talking about nice things like flu and ringworm, and now we're talking about crocodiles. I'm afraid of them."

"There isn't anything more to say about sicknesses," said Misha. "Take a cough. What good does it do you? Now if you didn't have to go to school. . ."

"Even that would be something," said Kostik. "But you're right. When you're sick, everybody loves you more—there's no comparison."

"They pet you," said Misha, "and say nice things to you. I've noticed that you can ask for anything when you're sick—a game, or a soldering iron."

"Of course," I said. "But the more terrible the sickness, the better it is. If you break your leg or your neck then they'll buy anything you want."

"Even a bicycle?" Alena asked.

Kostik snickered. "What do you want a bicycle for if your leg is broken?"

"But it will mend," I said.

"Really?" asked Kostik.

"What else can it do?" I said. "Isn't that right, Misha?"

Misha nodded. Here Alena pulled her skirt down over her knees. She asked, "Why is it that if you burn yourself, or get a bump or a bruise, you get a scolding, if not worse? Why does that happen?"

"Because of injustice!" I said, touching with my toe the pail in which the apparatus lay.

"What's that you're building?" Kostik asked.

"A launching pad for a spaceship."

"Why didn't you say so?" Kostik shouted. "You stinkers. Stop talking at once. Let's get to work!"

And so we stopped talking and started building.

LETTERS TO THE EDITOR

Dear Sir,

I enjoy reading your publication SOVIET LIFE, especially the section "Around the Country." However, it becames a bit of a task in trying to locate the various Soviet towns mentioned in each article, especially with American maps. May I suggest that you include a map of Russia specifically locating each town discussed in this section of the mogazine? It will make the article that much more interesting—at least I think so.

Thank you,
D. Hathaway
Tempe, Arizona

Dear Sir,

I liked your article on "Cancer" in your September issue. It was o good review of on important subject.

Historical articles such as the "Prilutsk Monastery" are always of interest.

The information on Yasnoyo Polyana on page 28 was of interest to me. I started reading Leo Tolstoy about 1912 or 56 years ago. I admire him for his seorch for "the truth" and for his greot novel, *Wor and Peace.*

I started out to write a critical letter, but this doesn't sound so bad.

Yours sincerely,
Harlan E. Wykoff
Highland Ciy, Florida

Deor Sirs,

I would like to congratulate you on the excellent presentation of your magazine SOVIET LIFE. This magazine is a constant source of delight and surprise to me. As a professionol writer myself, to achieve best selling books and a regular monthly column in the *Ladies Home Journal* omongst other work, I take more than the overage reader's interest in mogazines. The quality of your photography is of such a high standard that it must surely rank amongst the best in the world. Frankly it often takes my breath away.

With cordial greetings,
Yours sincerely,
Sybil Leek
Melbourne Beach, Florida

Dear Sir,

As a trial subscriber to SOVIET LIFE may I offer a suggestion which would make the magazine more appealing to me, and I hope to others as well.

Giving full recognition to the difficulties under which you publish, and realizing that you may be doing all you can under present conditions, I should like to suggest a more mature approach. There are many individuals throughout the country who are interested in the serious reporting of events elsewhere than at home. Most of us are handicapped by a lack of knowledge of the Russian language. Your magazine could fill an important gap by providing information pertinent to the serious interests of college students, and graduates, who would welcome articles pertinent to their interests. The section called "Around the Country" comes close to this, but the comments are too brief. Mature, interested readers might form a long-term list of subscribers and be inclined to recommend SOVIET LIFE to others with the same intellectual curiosity.

I hope you have no objection to a new subscriber making a suggestion which is well meant and accompanied by good wishes for your success.

Sincerely yours,
Alfred A. Fraser
Pennington, New Jersey

Dear Sir,

I know you have a great many things to tell about from your vast country, so please give us more about what you are doing, and a lot less pictures. "Around the Country" is very interesting, because those pictures have a story with them. When are we going to get some articles on crime in the USSR? Is crime increasing or decreasing? How many murders, kidnappings and robberies did you have last year?

Sincerely yours,
G. Dysthe
Glenhaven, California

An article about crime in the Soviet Union and its causes, with many statistic figures, appeared in our April issue.

Editors

Dear Sirs,

Your publication is fascinating always, but we appreciate more articles of historical interest like the series on the Revolution and the marvelous short articles: "Kreshchatik," July, 1968; and "The Kuban," September, 1968.

How about doing a series on the old Cossack lands?

H. B. Corlette
Fairview Park, Ohio

AROUND the COUNTRY

RAILROAD TRACKS IN THE DESERT

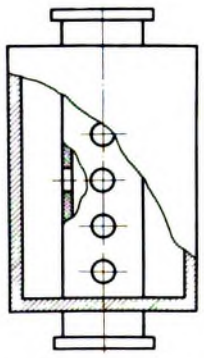
The Kungrad-Makat trunk line is being laid across the sands and salt flats of the waterless Ust-Urt plateau stretching between the Caspian and the Aral Seas. This rail line will cut the distance from Central Asia to the central regions of the country by some 600 miles.



YENISEI ESCALATOR

The dam of the Krasnoyarsk Power Station shuts off the Yenisei, one of Siberia's main waterways. Usually a series of locks lifts a ship over such obstacles, but a different solution will be used on the Yenisei. Leningrad engineers suggest that ships be lifted across the dam in a self-propelled "tub" filled with water mounted on cog wheels. The "tubs," 295 feet long and 59 feet wide, will travel up and down the slope on toothed rails. Current will be supplied by overhead wires and control will be from a panel at the front of the "tub." It will be able to lift several ships simultaneously, a weight of 1,500 tons in all. A special device will keep the "tub" with ships in a strictly horizontal position on the traveling carriage.

The same method is to be used at other dams spanning Siberian rivers.



NOISE VERSUS NOISE

Noise is one of the city dweller's great trials, and its main source is probably traffic. Soviet designers have developed a resonance single-chamber silencer for diesel engines. It is simple, reliable and has a practically limitless life. The silencer consists of an inner and outer (perforated) pipe, the diameter of the latter equal to that of the exhaust pipe.

The gas stream passes inside the inner perforated pipe and excites the air between the outer and inner pipes at a frequency equal to that of the exhaust but in antiphase. The excited oscillations are superimposed on and weaken the exhaust oscillations. The result is less noise.

THROUGH THE SAME PIPE

Pumping gasoline and oil through the same pipe is not done—they would mix. But with this new device they stay separated. A resilient rubber sphere, forced into the pipe, serves as a partition between the two liquids. Simultaneously it cleans the pipe of paraffin, and a device built into the sphere checks defects along the line and measures temperature.



ADDITION TO THE SCIENTIFIC FLEET

A new research ship, the *Professor Deryugin*, has joined the Far Eastern scientific fleet. It was built at Ukrainian shipbuilding docks and named for the distinguished zoologist and sea explorer Konstantin Deryugin. The ship is fitted with the latest equipment, including an underwater television installation, and has eight laboratories. Staffed by scientists from the Pacific Ocean Research Institute of Fisheries and Oceanography, the *Professor Deryugin* can do hydrological, ichthyological and biological investigations in various parts of the world.

A MEDAL FOR NEWBORN BABES

A medal made of a walrus tusk ornamented with traditional Chukchi engravings is worn only by those born in the remote Chukchi village of Uelen. Inscribed: "To one born in Uelen," the medal is given to Uelen parents when they register a birth.

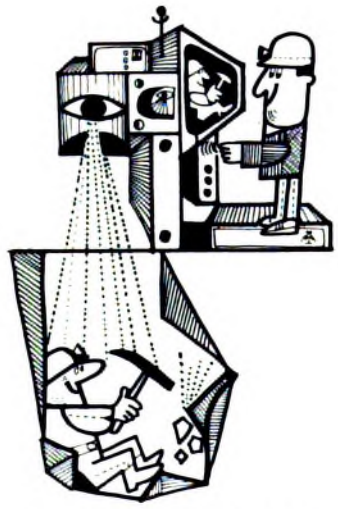
ELITE MELONS

The Bykovskaya Experimental Selection Station, the only one of its kind in the Russian Federation, grows new varieties of melons. Located in the steppes, 80 miles northeast of Volgograd, the station supplies the collective and state farms of the republic with 70 per cent of the so-called elite seeds. These seeds yield sweet watermelons and muskmelons which keep well after harvesting. Six types of the Bykovskaya station's watermelons were also judgec elite at the international fair in Erfurt (GDR); all six were awarded gold medals.

THE LOUVRE IN MOSCOW

Paintings and drawings from the Louvre and other French museums were exhibited in the Pushkin Museum of Fine Arts in Moscow. The large exhibition included work by the romanticists Delacroix and Géricault and painters of other schools of the first half of the nineteenth century: Ingres, Rousseau, Dupré, Corot, Courbet. Drawings by the novelist Victor Hugo attracted great interest.

The exhibition was also shown in Leningrad.



AUTOMATIC LOCATOR

The Donetsk Institute of Mining Mechanics and Technical Cybernetics (in the Donbas) has tested a Saturn system that keeps track of workers in coal mines; it is now in serial production. From the main control desk to the coal head it is more than half a mile down and even more horizontally. But all the dispatcher has to do is press a button, and the Saturn tells him precisely how many men are underground at the moment and how many are working in the various sections. If necessary, the machine can locate a particular worker or foreman.



GLACIERS REPLACE WELLS

An area of more than 250,000 acres for commercial grape growing is being prepared near the Kazakhstan capital of Alma-Ata. The glacier waters of the Tien Shan Mountains will compensate for the lack of major sources for irrigation. Hydrological engineers have already traced the beds of future irrigation channels.

FIREPROOF LIFEBOATS

Designers have come up with a new lifeboat for oil tankers. Its original contribution is a fire-fighting system made of pipes with slit openings. Thin sprays of water, supplied by a powerful pump, make a tight-fitting sheath round the aluminum alloy hull. The boat can hold 30 people.

The last fire test was seven minutes long. The boat was placed in the middle of a pool with a surface of over 3,000 square feet. Four tons of diesel fuel were poured into the pool and set afire. Flame and black smoke hid the boat from view.

This was the first time a boat in the very middle of a blazing fire was tested not with dogs or rabbits but with men, a crew of five. Not one of the thermocouples on the inside surfaces of the hull registered a temperature of more than 77°F. The air did not heat up above 84°F. And this with the flame temperature reaching 2,192° F. The boat suffered no damage.

Lifeboats of the new type are now in serial production and will be standard equipment for all Soviet tankers.

WORK LOADS FOR DANCERS

In ballet history there are many cases of young and gifted dancers who had to leave the stage because the strenuous routine was undermining their health. One of the functions of the All-Union Research Institute of Vocational Training is to determine the work load pupils of ballet schools can carry. Physicians, assisted by engineers, register the cardiac activity of young ballerinas. The telemetric information helps them fix the individual load for each dancer.

PICTURES FROM THE OCEAN DEPTHS

In December 1968 the *Academician Kurchatov*, flagship of the Soviet scientific fleet, returned from a Pacific cruise. This cruise, the fourth the ship has taken, was to study the Peru Current. Atmospheric, hydrological, biological and hydrochemical observations in this part of the ocean are important to determine the reasons for the unusually high productivity of the waters off the coasts of Chile and Peru. Geologists and biologists brought back more than a thousand photographs of the ocean bottom at depths of up to 16,400 feet. These include the first photographs ever taken of enormous "sea spiders."



APPREHENDED LIGHTNING

The highest point in Moscow, the top of the Ostankino television tower (1,749 feet), interests people whose business is lightning. The laboratory of high-voltage gas discharges and lightning protection of the Georgi Krzhizhanovsky Power Institute is doing research at that dizzy height.

The first experiments were to check how well the tower was protected from lightning. Now, with an unusual lightning catcher, the scientists are working on several other problems.

In one month an impulse counter installed 1,250 feet high on the television tower registered eight strikes by lightning. Within a small sector scanned by a camera-recorder, 60 lightning strikes were registered in a thunderstorm.

A series of photographs showed lightning striking the antenna. Its impact was absorbed by the protective system with no damage to either the concrete tower or the complex antenna array.

Moscow has 23 to 27 thunderstorm days a year, and every lightning bolt that strikes the TV tower will be recorded by the instruments.



TAKE YOUR UMBRELLA

An unexpected rain or storm is a nuisance, no more, to people who set off to work on a fine morning without their umbrellas. But it can mean deadly danger to workers on high-voltage lines and to steeplejacks. The MRL-2 weather radar gives several hours warning of rain or storm. The radar "sees" storm and rain clouds for some hundred miles around and makes "vertical sections" of the cloud mantle. Forthcoming changes in the weather are announced in good time over the radio.

The first such radar has been operating successfully in the Byelorussian capital of Minsk. The mean annual accuracy of its short-term forecasts is 87 per cent.

RESTAURANT IN A TOWER

Novgorod, one of Russia's oldest cities, has a well-preserved kremlin. Architects converted one of its towers, the Pokrov, into a restaurant. The decor is old Rus, candlelighted. The dishes, made according to ancient Russian recipes, are served on wooden platters. The restaurant is one of the most popular in the city.

TREASURES OF OLD UKRAINE

Exhibits of the Museum of Historical Treasures of the Ukrainian Republic are on display in that monument of ancient Kiev Rus, the Pecherskaya Monastery. The 1,500 items, made of gold, silver and other precious materials, were previously scattered in several museums.

Many of the exhibits were not discovered by archeologists. A unique set of antique gilt vases was found by peat diggers in one of the northern regions of the republic, and women's tombs, which gave the museum dozens of additional gold and bronze artifacts, were dug up during the construction of an irrigation system.

ARCTIC MERCURY

The first mercury mine beyond the Arctic Circle has been opened for operation in Chukotka, permafrost country. A production building has been erected and an administration and community-services center is under way. Nearby are a completed power plant and a chemical laboratory building.

PORTABLE PLANETARIUM

In 1936 the newly opened Moscow Planetarium was asked to make additional demonstration devices for the Zeiss Planetarium planned for the Paris World Fair. The Moscow Planetarium assigned a talented young mechanic, Sergei Mikhailov, to fill the order for the Zeiss firm. He did a brilliant job and shortly thereafter was appointed head of the planetarium's experimental workshop.

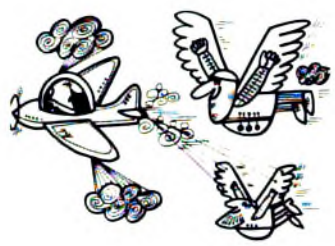
At the time the strange two-headed machine housed in an unusual building with a silvery dome was a mechanical and electrotechnical wonder. Consider the "mechanical computer" alone, a device that could "calculate" the visible positions of the planets in the sky for 99,000 years forward or back!

But the special building with its enormous dome-screen was expensive. One could see it in only one city of the country—Moscow. Mikhailov and a fellow inventor, Sergei Dergachov, decided to make a planetarium with a portable dome, one that could readily be moved from place to place. They ran into many technical difficulties, but finally devised equipment that was incomparably simpler, and with most of the demonstration virtues of its "elder brother."

In the postwar years many regional towns wanted their own planetariums. Sergei Mikhailov and his colleagues in the workshop developed a small model for the city of Gorky, and subsequently for Kostroma, Yaroslavl and Saratov.

More recently Sergei Mikhailov's planetarium equipment has been seen by visitors to Soviet exhibitions held in foreign countries.





ICARUSES OF OUR DAY

Powerful modern rockets are pushing out into space. But man's old dream of flying like a bird has not been forgotten by latter-day Icaruses. Members of the All-Union Flapping Flight Committee of the USSR Federation of Aviation Sports recently tested a new type of ornithopter, a flapping wing craft. With the propellers of an IL-14 plane simulating a wind tunnel, the model was subjected to wind velocities of 67 feet a second and passed the test with what you might call flying colors.

The 12,000 members of the flapping flight committee are moved by more than enthusiasm. They are interested in the possibilities of the craft, as are plane designers. With a traction of one horsepower, a plane can levitate only one-tenth the load an ornithopter can with the same traction. What's more, an ornithopter needs no airfield and is noiseless. The ornithopter has a future, say its admirers.

PORTRAIT OF A SARMATIAN WOMAN

The Sarmatians are an ancient people who lived in the steppe areas from the foothills of the Altai ridges (Siberia) to the plains of the Ukraine. We do not know whether they were of European or Mongol extraction.

Recently, the skull of a Sarmatian woman was dug up on Sadovy Hill (near Rostov) at a depth of about six feet. The burial site yielded other finds — household articles, golden trinkets, brocade garments. The woman may have been the wife of a chief.

Doctor of Historical Sciences Mikhail Gerasimov, the famous specialist in plastic reconstruction from skulls, restored the contours of the woman's face. She died at the age of 56 and her restored features show that she must have been beautiful when young.

She looks like a Greek or a Thracian or an Ossete woman. She may have been the captive of a warring Sarmatian chieftain, or a Sarmatian herself.

NO OTHER PUBLICITY REQUIRED

The city of Nalchik, capital of the Transcaucasian autonomous republic of Kabardino - Balkaria, has built a structure shaped like a beer barrel. The outside of the building explains the inside: It houses a tavern. The "barrel" has been erected at one of the city's liveliest spots not far from the municipal beach.



BRUMEL'S COMEBACK

Despite the dismal forecasts of doctors and specialists, world record holder, many-time USSR and thrice USA high jump champion Valeri Brumel is back in the gym. After a motorcycle accident four years ago he was in danger of having his leg amputated—a comminuted fracture of his tibia and fibula posed a problem for surgeons. And although the five-hour operation was a success, his right leg, 1.18 inches shorter, put a finish to his sports career.

There followed long years of treatment, a thousand days in plaster casts, 36 months on crutches, six operations in three years.

Many physicians undertook to treat Brumel, but none could guarantee a cure. Only one surgeon from the remote town of Kurgan in Siberia, Doctor of Medical Sciences Gavriil Ilizarov, came forward with a clear-cut plan of treatment, its timetable and its results.

On May 28, 1968, Ilizarov operated on Brumel and then applied his apparatus for compression at the site of the fracture. By displacing the tibia 0.0295 inches a day, he restored the lost 1.18 inches in 45 days. On October 18 Ilizarov removed the apparatus. Brumel began to walk, with a slight limp but without crutches.

Then he was back in training. On March 13 during his training session in the field and track section of the Young Pioneer Stadium in Moscow, Brumel cleared 2 meters and 5 centimeters (6 feet 8 inches).

A METHOD TO CHECK SMALL PARTS

Watches, cameras and various other equipment have many parts no larger than a one-cent coin with complex shapes and dozens of tiny apertures of different diameters. They have to be checked for accuracy to within from a tenth to a hundredth of a millimeter, a job that requires hundreds of experienced specialists.

Yuri Kolomiytsev, head of the laboratory of optical measuring methods of the Leningrad State Optical Institute, and Yefim Finkelstein, head of the design office of the Novosibirsk Instrument Plant, have invented a method to check intricate flat parts visually.

The checking is done by comparison. However, it is not the parts that are compared with the standard but their optical image. A special instrument is used for the purpose. It is called a profile microscope of comparison and differs from the common microscope in having two stages and two lenses instead of one. The standard and the checked parts are placed on the stages and the light is switched on. The rays passing through two colored filters light up the parts—one produces a green light and the other a red light. An optical system projects both images in the focal plane of the eyepiece making them coincide exactly.

Where the outlines of the parts do not coincide, a bright-red or green border appears, depending on the part that protrudes. That signifies a defect. The size of the error can be established by turning compensating screws until the iridescent border disappears.

The new method makes completely automatic checking a likely possibility in the near future.

OAK MOSS FOR PARIS PERFUMERS

The light greenish-gray lichen called "oak moss" blankets the trunk of the Caucasian oak. The Caucasian lichen is an indispensable raw material for the production of an extract used in Soviet and foreign industry as a fixative base for perfumes. Paris perfumers purchase oak moss regularly. Hungarian pharmacists import the lichen to make medicinal preparations from the extract. The volume of lichen produced for export is measured in tons. This valuable raw material is now being grown artificially by a state farm in the Northern Caucasus.

AT HOME IN THE COUNTRY

WHICH IS THE WEAKER SEX?

"PROTECT MEN"
"THE STRONGER SEX CRIES FOR MERCY"
"WHAT THE STATISTICS SAY"

THESE HEADLINES marching across the pages of Moscow's weekly *Literaturnaya Gazeta* captured the attention of its readers. It amused some, agitated others and brought to public attention a problem that had not been seriously considered before.

Men: The Stronger or the Weaker Sex?

The question was raised by Boris Urlanis, probably the top Soviet demographer. His credentials include membership in the International Union for the Study of Overpopulation, and such widely respected works as *War and the Population* and *The Structure and Dynamics of Population in the USSR and the USA.* Urlanis wrote an article (*Literaturnaya Gazeta* No. 30, 1968) titled "Protect Men" in which he presented certain facts that, although previously known, had not been estimated at their real—and critical—value. Gathered together, they presented a startling picture. Here are some of the facts:

". . . the percentage of women is growing, the percentage of men decreasing slowly. The gap is rapidly widening, largely because the death rate at each period of life is 2 to 2.5 times higher for men than for women" (the figures are for the USSR).

Is War to Blame?

Urlanis says No:

"Almost all males under 42 were not involved in World War II. Yet the male death rate for the period between 30 and 40 years of age jumps dramatically by comparison with that of women. The general indicator for the death level is the average life span. The average life span for women in the Soviet Union is 74 years, while for men it is only 66, a difference of eight years."

What Then is the Reason?

The main reason, says the Soviet demographer, is the great physical, nervous and emotional strain on men. Society, our way of life, requires men to be strong, aggressive, tenacious, when in fact they are weak and delicate creatures. The nervous and emotional strain men are under drives them to drink and smoke to relieve the tension. Urlanis notes that "during the seven-year period between 1960 and 1967 alcoholic beverages sold at a rate much greater than that of the population growth. The sale of cigarettes has skyrocketed so much these past years that the average is now a pack a day per man—including nonsmokers."

The conclusion drawn by Urlanis that man, demographically speaking, is the weaker sex, coincides with the latest data of the World Health Organization. Science has long been intrigued by the male's relatively low level of endurance. How do we go about protecting man from the stress of our nervous times? Urlanis offers no radical cure-all, but he does make several suggestions. For instance: The USSR has a wide network of women's consultation centers. They do an effective job of guarding the health and increasing the longevity of women. Why not have a similar arrangement for men? They could be set up at places of employment, perhaps, to facilitate regular physical fitness check-ups. These centers could help cut down drinking and smoking.

"Their Own Fault"

The article brought a small avalanche of mail to *Literaturnaya Gazeta.* Some readers reacted with humor, others rose up in arms. One indignant letter writer accused Urlanis of trying to foment a war of the sexes. Another said he was "advocating male irresponsibility," providing a rationale for "good-for-nothings" who shirk their obligations to women. One male correspondent argued that "since we die sooner, women should shoulder some of our traditional burdens."

Journalist Larissa Kriachko responded with an article entitled "The Stronger Sex Cries for Mercy" (*Literaturnaya Gazeta* No. 33, 1968) in which she quoted medical statistics to prove that biologically men are not weaker than women. "The average incidence of sickness for women between 20 and 59 years of age is markedly higher than for men. Data on cancer and coronaries per 1,000 inhabitants of five capitals of union republics prove my point." Which poses an additional problem: Not only is the health of women involved here but the fate of the next generation as well. "We already have a lag in population growth," she continues. "To preserve the present population level, half of all families must have two children, the other half at least three." Her conclusion: More ought to be done to keep women healthy. As for men, she makes the abrupt judgment, "It's their own fault."

In support of Miss Kriachko, other members of the fair sex brought some caustic humor to the discussion. Suggestions: A preserve where men would roam free of work . . . as well as of vodka and cigarettes. All this would become the prerogative of women, since they "can take it." An Association for the Prevention of Cruelty to Men to save the male from the dinosaur's fate. Or Run-from-the-Stroke Clubs like those Australia has, the running to be done during lunch hour or instead of coffee breaks. The humorists, however, were in a minority; most of the readers were serious.

Georgi Yeliashevich, an M.D. from Orel (in the Central European part of Russia), wrote:

"The idea of setting up medical consultation centers for men ought to be taken seriously, not used as a target for sarcasm. After all, World Health Organization data show that although the female sickness rate is higher than the male, the male death rate is higher."

The Solntsev family wrote:

"Taking care of men does not mean forgetting about women or putting new burdens on their shoulders. Urlanis is addressing himself not only to women, but to men also, to society as a whole. To be sure, protecting man does not mean playing up to the egoistic or parasitic inclinations of this or that male. To protect man, as we see it, means a sensible measure of care for society as a whole, for millions of individual men and women."

Mikhail Borovich, a Moscow engineer, wrote:

"The sad effects of city living are there for all to see. The panacea for all troubles are pushups and sports, or so we are told. But there is a big gap between talking about exercise and doing something about it. The vast majority of those who do any real physical exercise are in the 25 to 30 age bracket. The man who has a family and job, who usually sits behind a desk all day, in other words, who really needs exercise, rarely shows up at the gym. And this is not only because of what might be called age inertia, but because of things like caring for the family and bringing up the children. Yet we have no right to just cold-bloodedly reel off the sad statistics. Nor will slaphappy posters of the "Sport Spells Health" type do. What we need are more swimming pools and stadiums built close to living areas. And we must have sensible, qualified rec-

ommendations on sports and daily schedules geared to different age groups and occupations."

Realistic and Unrealistic

The correspondent of SOVIET LIFE asked Urlanis for a comment on the flurry of criticism.

"I wrote the article," he said, "to draw attention to certain facts. When I come across articles that say man can live to be 100 to 120 years old I cannot take them seriously. It is not realistic yet. The point I was getting at was that we must shorten the life span gap between the human male and female, and we can do it.

"Unfortunately I was misunderstood. Some people thought that my article was intended to give men medical reasons for not helping out at home—washing dishes, shopping and the rest. I intended nothing of the sort."

"During the discussion the point was made that more women suffer from such diseases as cancer and coronary attacks than men. Is that true?"

"It may sound strange, but it is a fact. Statistics show that women suffer from more illnesses, but they have a longer life span nevertheless. Usually the man is dead and buried by the time his wife starts ailing. The explanation may be that women go to doctors more than men. Hence we have a more complete statistical picture for women than for men. As a rule, men have to be dragged to the doctor. Let me give you this historical parallel for what it's worth. In seventeenth century London—there were no population statistics then—it was commonly thought that there were twice as many women as men. Why? Simply because of the data furnished by doctors; they had twice as many female patients as men."

"Besides male consultation centers, what other suggestions do you have to meet the problem?"

"Well, I think that keeping our men healthy is too important to leave to chance. The government ought to step in directly. For instance, our Ministry of Public Health and our Ministry of Education should collaborate with other organizations in drawing up a program aimed at bridging the life span gap. Part of this program might be a campaign to cut down on vocational accidents and injuries to which men are more prone because of the work they do. From the safety viewpoint our work procedures and working conditions are far from perfect. Our research institutes, governmental agencies and trade union organizations do much to see that the recommendations of science become part of everyday life. But commendable as it is, this is not enough. Our safety techniques must be as foolproof as we can make them. I think also that we must find new and improved methods to cut down smoking and drinking. It's not easy, but the effort must be made.

"Being concerned for the health of men," Urlanis concluded, "is being concerned for one of the most important elements of demographic balance. The solution begins when the problem is openly stated. Our society has the possibilities for solving most difficult social-demographic problems. If we work at this one hard enough, we can make the 'stronger sex' really strong."

FIRST USSR - USA SOCCER MATCH

At the end of February and beginning of March this year the Dynamo soccer team of Kiev, last year's USSR title holder, met a California soccer team, the Clippers, for a series of games in the latter's native state.

The arrival of the Soviet team in this country could be compared to that of Christopher Columbus, a soccer Christopher Columbus at that: Never before had a Soviet soccer team had an American soccer team as opponent.

Three games were played: two at Kezar Stadium in San Francisco and one at Memorial Coliseum in Los Angeles. The Soviet team won the first game with a score of 3:1, lost the second 0:1 and made a draw in the third 1:1.

Here is what Fyodor Martynyuk, head of the Soviet delegation, said:

"The widespread opinion that Americans cannot play a good game of soccer will have to be reconsidered in the very near future. The Clippers proved strong opponents of great endurance and high skill.

"I would also like to mention the warm reception soccer fans in California gave the Soviet sportsmen."



KINDERGARTEN IN THE COUNTRY





Early every summer whole fleets of buses bulging with children stream out of our cities. Girls and boys of all ages, from toddlers to gawky teenagers, are off to spend the whole summer in the country. The juniors go to nurseries and kindergartens, the seniors to Young Pioneer camps. On encountering a column of buses bedecked with the familiar little red flags, motorists pull out of the way and, themselves wilting in the heat, watch the country-bound busloads speed by.

Not a care in the world for these kids but to keep their butterfly nets whole and pies baked by mom intact. For those who have yet to go to school, summer and winter are just different seasons for



play. In winter their nurseries and kindergartens are in town near home; in summer, they are in the woods and on river banks. The younger children miss their parents for a while, but mom and dad visit on Sundays and soon their lives are so packed with happenings that they forget all about home.

Some nine million children of preschool age attend our nurseries and kindergartens. Of these, four million go to the country in summer. The maintenance of a child at a day kindergarten is 300 to 400 rubles a year. The parents pay 15 to 20 per cent—the rest of the bill is picked up by the state, which this year budgeted almost three billion rubles for the purpose.



Part of the cost is carried by the enterprises where the parents are employed. This is the case at the kindergarten of the Moscow Auto-Tractor Electric Equipment Plant, which accommodates 100 children. The plant has a staff of 2,000, but some parents prefer keeping their children at home under granny's vigilant eye. The factory kindergarten charges 12 rubles a month and 20 rubles in summer. However, low-salaried workers pay only half that, and some pay nothing at all.



The factory trade union committee does its share. It foots the bill for the repair of summer quarters, hires camp counselors, and contributes several thousand rubles to buy new toys, fresh fruit and berries.

The brightly painted cottages of the plant's summer kindergarten are scattered about a birch grove some 30 miles from Moscow. For 95 days the grove rings with children's voices that vie with the unending chirping of birds.





KRUPSKAYA AND LENIN

By Genrikh Deich
Professor of History



Nadezhda K. Krupskaya in the 1890s



Vladimir I. Lenin in 1892

NADEZHDA K. KRUPSKAYA was more than wife and friend to Lenin; she was his comrade in arms. These episodes from their 30 years together are taken chiefly from Lenin's correspondence and other papers. Many of his letters have not come down to us. Of this Nadezhda Krupskaya wrote:

> The only personal letter from Vladimir I have is one dated July 9, 1919. We were rarely apart. We corresponded a great deal while he was in prison [1] and during the first year of his exile,[2] and while I lived in Ufa.[3] But the letters were all written in invisible ink and carefully destroyed immediately after being read.

Still, we do have enough established facts to reconstruct at least a sketch of the relations between Lenin and his wife.

The Wedding

They first met in St. Petersburg in February 1894. Nadezhda was teaching at a school for workers held on Sundays in the factory district of the capital. Many of her students also attended the discussion groups Lenin led. The two saw each other often until Lenin's arrest in December 1895 for his activities in the League of Struggle for the Emancipation of the Working Class, a revolutionary organization. The cause of the working class concerned them both deeply and was the foundation of their growing friendship. Even from the St. Petersburg prison where he was awaiting trial, Lenin managed to correspond regularly with Nadezhda. Aside from party matters, their letters were probably personal for the most part. Nadezhda wrote in her reminiscences:

> No matter how Vladimir kept his feelings under control and adhered to a definite schedule, prison began to depress him. One of his letters had the following plan: When the prisoners were marched outside for exercise, Apollinaria Yakubova and I were to come to the prison at a certain hour and stand on a certain section of the sidewalk outside. Then he would be able to catch a glimpse of us. Apollinaria did not show up, I don't remember why, but I went there several days in a row and stood on that spot for a long time.

Nadezhda herself was arrested in connection with the same case on August 12, 1896. Correspondence was much more complicated then, but it still continued. We know that in a letter Lenin wrote in invisible ink he told her he loved her.

When he was released from prison on February 14, 1897, and given a few days to arrange his affairs before being exiled to Siberia, Nadezhda was still in jail.

Lenin did not mention Nadezhda by name in letters to members of his family until the end of 1897. There are two explanations for the delay. By that time he had evidently proposed to her and been accepted with the half-joking "if that's the way you want it." Secondly, by December 1897 the investigation into the case against Nadezhda was over, and it was more or less clear what the sentence would be. There was no longer any reason to conceal their relationship, especially since she was planning to ask the Police

[1] Between December 1895 and February 1897 Lenin was in prison in St. Petersburg.
[2] From May 1897 to May 1898 he lived alone in the Siberian village of Shushenskoye.
[3] A city in the foothills of the Ural Mountains where, from February 1900 to March 1901, Nadezhda Krupskaya completed her term of exile. Ufa is today the capital of the Bashkir Autonomous Soviet Socialist Republic and a large industrial and cultural center.

Department to allow her to serve her period of exile in Siberia, in the village of Shushenskoye, where Lenin was already living.

Beginning with December 10, 1897, his letters make more and more reference to Nadezhda. He advised one correspondent to go to her for some piece of information, and told another that she might join him in Shushenskoye. In December 1897 he wrote that she might be coming. By the beginning of January 1898 the question had been settled. There are two confirming documents. One is a telegram sent from Shushenskoye on January 8, 1898:

To His Excellency, Director of the Police Department,
St. Petersburg

I have the honor to ask you to allow my fiancée, Nadezhda Krupskaya, to move to the village of Shushenskoye.

Administrative Exile Ulyanov[4]

At about the same time Nadezhda Krupskaya submitted this petition to the Ministry of Internal Affairs:

To His Excellency, the Minister of Internal Affairs,

From Nadezhda Krupskaya,
Daughter of a Collegiate Assessor

Petition

Inasmuch as I am to marry Vladimir Ulyanov, now living in the village of Shushenskoye, Minusinsk District, Yenisei Guberniya, I most humbly beg Your Excellency to make my place of exile, if that is to be my punishment, the place where my fiancée resides. In choosing Siberia for my place of exile, I also ask that my term be reduced to two years since my financé's term of exile ends in two years and also since my mother will accompany me.

Nadezhda Krupskaya

January 9, 1898

Not yet knowing how things would be decided in St. Petersburg, Lenin wrote to his mother that Nadezhda had been promised that two years of exile in Shushenskoye would be equivalent to three years of exile in Ufa Guberniya and that he had arranged a room for her and her mother in the house where he lived.

From Lenin's letters we can see how his family received the news of his forthcoming marriage. On February 6, 1898, a letter from them wished him every happiness. They had invited Nadezhda to visit them in Moscow on her way to Shushenskoye and asked what things he wanted them to send with her.

His long reply spoke of the many problems connected with his coming marriage:

Anna[5] asks when the wedding will take place and whom we are inviting! She is going too fast. Nadezhda Konstantinovna must first arrive. Next we have to get permission to marry. Don't forget we have absolutely no legal rights. It's a long way to "invitations"!

Lenin had a great many commissions for his family and for Nadezhda. "I think you should have N.K. bring as many books as she can, since we don't know whether there will be an opportunity to send any in summer." There was a request for clothing, ruled paper and other items. Then followed a long list of books on statistics, economics and history. Children's books were also on the list. "If you have some picture books, I want N.K. to bring them for the children here."

The St. Petersburg authorities took their time. Nadezhda wrote to Lenin's mother Maria Alexandrovna:

Didn't Anna receive my letter of the eighth or ninth of February? I wrote her about myself in considerable detail. There is still no news about when my sentence will be announced. I was told at the Ministry of Justice that the report would be presented the first or second week of Lent. I was also told that my sentence remains three years of exile in Ufa Guberniya and that it is up to the department to decide whether to change the place to Shushenskoye. The whole thing is up in the air. After the sentence is announced, I shall probably have to remain in St. Petersburg another two weeks, so we shall not be leaving here for three or four weeks. We expect to stay in Moscow two or three days. I'll let you know exactly when after I find out for sure.

Not knowing exactly when Nadezhda would set out, Lenin kept saying in his letters to his family: "I'm enclosing a letter for her, for she may already be in Moscow. If she isn't, please send the letter on to her." "I am enclosing a letter for N.K. in case she has not yet left Moscow." "I am not writing her today in the hope she will have left Moscow by the time this letter reaches you."

Those lines are from letters written over a 13-day period.

February passed, and the authorities still had not notified Nadezhda whether her place of exile could be Shushenskoye instead of Ufa Guberniya. On March 6, 1898, she wrote Lenin's younger sister:

I simply know nothing whatsoever about when I shall be allowed to leave. There is a woman here from Minusinsk who tells me that leaving later than the tenth or twelfth is risky since the roads are likely to be impassable.I kept hoping the sentence would be announced on March 4. Then I could have left the evening of the tenth. But the announcement has been put off until March 11, and then not for certain. At the department I was told:"Your petition will *probably* be taken note of. *If* you are allowed to go to Siberia, it will not be until after the sentence is announced. You *may* be allowed to travel straight from St. Petersburg and not from Ufa Guberniya." (!) I'll go to the department tomorrow. I do so hope my departure will not be put off till spring. I'm in a great hurry at the moment, but I shall write Anna tomorrow evening and tell her the outcome of my visit to the department.

[4] Lenin's real name.
[5] Lenin's elder sister.

Nadezhda and her mother reached Shushenskoye on May 7, 1898. That was a red-letter day for Vladimir and Nadezhda. On May 10, 1898, Lenin wrote his mother:

My guests have finally come. They arrived the evening of the seventh, but as luck would have it I was out hunting and not home to receive them. It seems to me Nedezhda is not looking well. She must see to her health while she is here.

Lenin went on to describe how Nadezhda and her mother traveled to Shushenskoye and told his mother how to get there if she herself should decide to make the long trip. Again and again he returned to what was uppermost in his mind:

Yes, Anna asked me whom I am inviting to my wedding. I want all of you here, but perhaps I had better send the invitations by telegraph! N. K. has, as you know, been put in a tragicomic position. If she does not get married *immediately* (sic!), she must return to Ufa. I have no intention of allowing any such thing to happen, and so we have already started cutting red tape, meaning we have filed an application requesting that we be issued our papers, without which we cannot be married, in order to get the wedding over before Lent *(before* the fast of St. Peter). We can only hope the strict authorities here will find this a sufficiently "immediate" marriage! I have invited the people from Tesin (they offer to be witnesses). I hope they will be allowed to come.

With her son's letter Maria Ulyanova kept a letter from Nadezhda written the same day.

. . . We finally reached Shushenskoye, and I am keeping my promise to let you know how Vladimir is. I find him looking wonderfully well compared to the way he looked in St. Petersburg. There is a Polish woman living here who says, "Pan Ulyanov is always in high spirits." He does a lot of game shooting. Everyone here does, so it is to be expected that I, too, will soon be on the lookout for ducks, teals and other birds. Vladimir was not satisfied with what I could tell him about all of you—said it was not enough—although I told him everything I knew.

Only a church wedding was legal in Russia. Although Lenin and Krupskaya were both confirmed atheists, they could only be married in church, with all due ceremony.

Almost two months passed trying to get permission for the marriage to take place and for friends, other revolutionaries who were in exile in the area of Shushenskoye, to come to the wedding. When permission was not forthcoming, Lenin appealed to the Yenisei Governor in Krasnoyarsk:

To His Excellency, Chief of Yenisei Guberniya
From Vladimir Ilyich Ulyanov, administrative political exile, assistant barrister, living in the village of Shushenskoye, Minusinsk District

Petition

My fiancée, administrative exile Nadezhda Krupskaya, arrived in the village of Shushenskoye on May 7, 1898. She had originally been exiled to Ufa Guberniya, but the Minister of Internal Affairs gave her permission to live in Shushenskoye provided she married me.

Immediately after the arrival of my fiancée,on May 10, 1898, I requested the police officer of Minusinsk District to send me a marriage permit. When there was no reply, I went to the town of Minusinsk sometime around May 20 and put my request to the police officer in person. The police officer told me that he could not give me a permit since he did not have my dossier but would issue the permit as soon as he received the dossier. He has not yet issued the permit although more than six weeks have passed since I applied for it. This incomprehensible delay makes our position all the more difficult since my fiancée has been refused a grant-in-aid until she marries me (that is what she was told today, June 30, about her application for a grant). This turns out to be an extremely odd situation. The highest authorities granted my request to have my fiancée sent to the village of Shushenskoye on the condition that she immediately marry me. The local authorities, however, refuse to issue the permit required for the marriage to take place. As a result, my fiancée has been placed in a situation where she has no means of support.

On the basis of the above I have the honor to humbly ask Your Excellency to issue instructions:

1) to find my dossier or identification paper, or institute inquiries at the appropriate office;

2) to send me the marriage permit required by law or a document to the same effect.

Vladimir Ulyanov,
Administrative political exile, assistant barrister
Village of Shushenskoye
June 30, 1898

Only after receiving this petition did the Yenisei authorities send a telegram on July 6, 1898, ordering that the necessary papers be issued to V. I. Ulyanov to allow him to marry N. K. Krupskaya. The Yenisei and Minusinsk authorities were no longer able to delay the marriage, but they were able to prevent friends of the bride and groom from attending the wedding. No friends were allowed at all. This can be seen from the register at the Petropavlovskaya Church in Shushenskoye, which shows that the wedding took place on July 10, 1898. The ceremony was performed by Father Ioan Orestov and psalm reader Narkis Tyzhnov. Witnesses for the groom were the peasants Konstantin Polezhayev and Ivan Zyryanov, while the witness for the bride was Ivan Kazantsev, also a local peasant. The marriage was sealed with two wedding rings of brass which a political exile in Shushenskoye fashioned for the occasion.

In Siberia

Their deep love for each other and their spiritual affinity can be felt in each of the letters the young couple sent to their relatives. They wrote about their lives and about one another with gentle

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LENIN'S UNIQUE PHOTOGRAPH

By Valentin Chikin

THIS IS the first photograph of Lenin after the October Socialist Revolution. It was taken in January 1918. How fine it would be to have a picture of Lenin in those decisive days of October 24 and 25, 1917, but none exists. They say that at the Second Congress of Soviets, which met on October 25 and 26, Vladimir Lenin, chairman of the people's government which had just been formed, refused to be photographed. When the only Petrograd reporter admitted to the congress tried to take a snapshot, Lenin tactfully explained his refusal.

"Not just now, comrade. When I grow a beard and look like myself again, then you'll be welcome."

The traces of the disguise soon disappeared. Lenin "looked like himself" again, but there were no meetings with photographers, no portraits on display anywhere. Few people knew the head of the new government by sight, even in the capital. "In the evening," recalls Nadezhda Krupskaya, Lenin's wife, "we would leave the Smolny (the building in which the headquarters of the Revolution and Lenin's office were situated), and nobody ever recognized him." Finally, 12 weeks after the Winter Palace was stormed, the first pictures of Lenin were taken. By decision of the Central Committee, a volume of his selected works was to be published, and a photograph was needed for the book. Lenin had to agree to pose.

And so, on the last day of January 1918, Moisei Nappelbaum, a professional photographer, appeared in the Smolny with his "portable camera." As he subsequently confessed, he had imagined the leader of the revolutionaries as a graceful hero of the French type, "wearing a long black frock coat, with a red sash around his waist and a revolver in a holster." But he found a peaceful, intellectual-looking man, friendly and modest, only very, very busy.

Lenin was patient. He understood that someone not involved in politics could not imagine the whirlpool of affairs that demanded his attention. You could say that the government was in continuous session. He had chaired a meeting of the Council of People's Commissars yesterday, and would again today, and tomorrow, and the day after tomorrow. Every session adopted the most weighty decrees. Either you went over everything that was proposed with the utmost care, or you sat down and wrote a draft yourself.

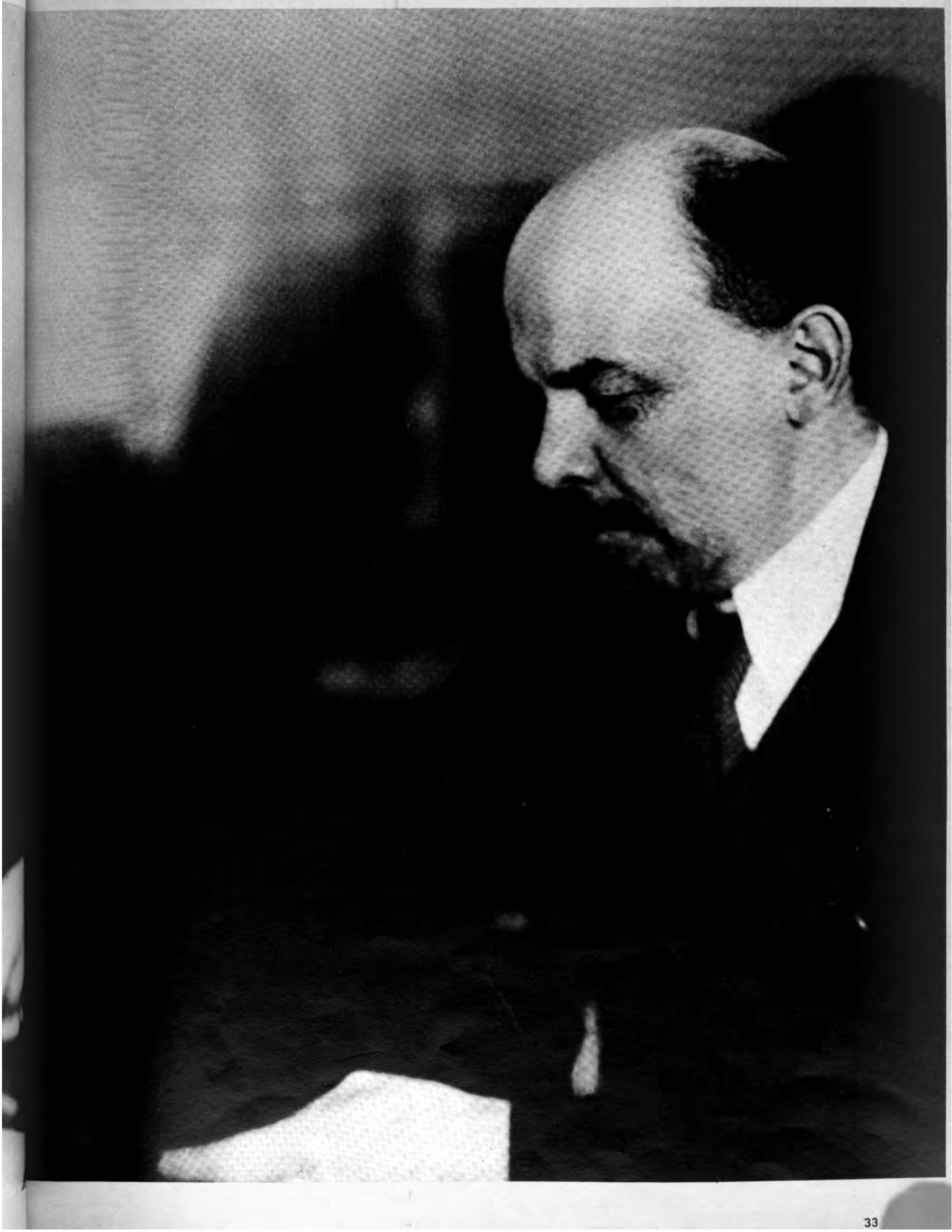
And the stream of meetings with people, sometimes the most unexpected! One wanted a sackful of political literature in exchange for grain; another, an official stamp bearing a coat of arms for a regional Soviet, when the Republic itself had no coat of arms yet. Before the day ended, he would have to take the floor twice more at the Congress of Soviets. To say nothing of the papers which came in torrents and clamored for attention.

When there was a pause in the photographer's preparations, Lenin sat down at his desk and became absorbed in his work. In a moment the "portable camera" flashed. And so we now have a photograph of Lenin engrossed in his work. In his hands he holds a letter, or a page of verbatim report, or an important draft of a law. The question is clear to him. With a slight smile of impatience, he waits for his "interlocutor" to speak.

Lenin's study in the Smolny (Leningrad)



Peasants' representatives visiting Vladimir I. Lenin
From drawing by Vladimir Serov



(Continued from page 31)

humor. Vladimir, for instance, teased his wife about her detailed and dramatized descriptions of the most commonplace things and incidents. This sentence is from one of his letters: "Nadezhda has already constructed a long tale about our life, and there remains absolutely nothing for me to add."

On her part, Nadezhda told how hard it was to wake Vladimir at half past seven or eight in the morning, how he would mumble something, pull the blanket over his head and fall asleep again, and how in his sleep he would talk about what he was working on at the time. Nadezhda also often joked about her husband's limitations as a hunter and fisherman, and how impractical he was in everyday matters.

The letters from Shushenskoye contain details that throw light on the relations between the newlyweds. On January 10, 1899, Nadezhda wrote to her mother-in-law:

> Anna's letter of December 24 came with yours. I'm not writing her separately because I should have to repeat what is in this letter. There is only one thing for her especially. She is indignant that I give my letters to Vladimir "for editing." It is just that I often write about our Shushenskoye life in a jocular tone, and since Vladimir is mentioned in them a lot, I wouldn't want to send such letters without letting him read them first.

In some of his letters he did not pass on regards to his family from his wife. Nadezhda wrote to her mother-in-law on June 14, 1898: "Passing on regards through Vladimir is hopeless; he feels this should be taken for granted." From another of her letters we learn that the young couple had the tactful habit of not opening letters separately that were addressed to both of them.

Most of the time Lenin wrote to his family himself, but there were occasions when he just added a few lines to a letter written by Nadezhda. All told, judging by the letters we have, there were five such cases during their life together in Shushenskoye. Another detail worth noting is that although they wrote to Lenin's family separately, they usually wrote the same day.

Lenin was very fond of his mother-in-law Yelizaveta Krupskaya. This 56-year-old woman selflessly gave up her familiar way of life and followed her daughter to the Siberian hinterland to make life easier for the young couple. At first the change and the climate upset her. She was often ill and in low spirits. But she gradually became acclimatized, and in Nadezhda's letters to her husband's family we find lines such as these: "Mother is now quite used to the place, and in her letters she now describes the lovely Shushenskoye autumn." This change of mood was due, in great part, to her son-in-law, who treated her with great consideration and respect. In his letters he always passed on regards from Yelizaveta, reported how she felt, described walks the three of them had taken, and mentioned things she had said and advice she had given. From Lenin's letters we learn that besides running the household for the young couple, Yelizaveta gave them financial assistance.

In the letters to Lenin's family there is no mention of any resentment, disagreement or misunderstanding between son-in-law and mother-in-law. Yelizaveta apparently had no reason or occasion to be displeased with her son-in-law, except in jest, of course, as in this letter to Anna, that Nadezhda wrote on November 22, 1898:

> Mama is displeased with Vladimir. A few days ago he quite honestly mistook a gray hen for a goose. He ate the hen and then praised it, saying it was a good goose because it was not fatty.

In 1897 the well-known English economists Beatrice and Sidney Webb published their *Industrial Democracy,* a book which became very popular and was translated into many languages. In St. Petersburg Nadezhda had been able to get a contract for Lenin to translate the first volume of this book into Russian. On March 8, 1898, he wrote to Anna:

> I want to ask you to get me some English language textbooks. I asked for a translation, and I got a thick book by the Webbs. I'm greatly worried about making mistakes.

We can see from this letter how painstakingly he prepared for the translation and how much he valued the job, although he was to get only 20 rubles for each 16 printed pages. The terms of the contract with the publisher were quite stiff: A clean manuscript of the translation had to be completed by the middle of August 1898.

Before Nadezhda arrived in Shushenskoye, the translation went ahead rather slowly. With her help the work proceeded more rapidly. Later Nadezhda recalled: "Vladimir and I devoted the mornings to translating the Webbs. . . ."

Thanks to their joint efforts, he was able to report to his mother on June 14, 1898, that the translation was nearing completion.

That the work on the Webbs' book was finished in July 1898 is evident from this extract from a letter he wrote to Anna on July 15:

> Nadezhda and I are now making a clean copy of the Webbs. Under the contract we must mail it by the beginning of August. I'm fed up with this copying (about 1,000 handwritten pages for the two of us). But translating it was interesting because it is a very worthwhile book indeed.

Worried that the censors might not pass the book, he wrote to his elder sister:

> I have another favor to ask you. If you happen to be in St. Petersburg or if you see an author, make inquiries, please, about the Webbs' book. I want to know why they haven't paid me for it yet, although according to Nadezhda they are supposed to pay whether the book comes out or not.

In the spring of 1899 he was offered the job of editing the second volume of the Webbs' book. The translation of this volume had been done by someone else, and much of it had to be retranslated. Lenin and Nadezhda worked together on the second volume, too.

She also helped him with his book *The Development of Capitalism in Russia* and played a large part in the publication of his first legally published work, *Economic Studies and Articles.* In his letters to his family Lenin always talked of "Nadezhda and I" when he made reference to the various setbacks and gloomy conjectures connected with its publication.

To help her husband in every way she could, Nadezhda handled part of his business correspondence. In Lenin's letters we find mention of theoretical writings which they read together and discusssed. On September 1, 1899, he wrote to his mother:

> Nadezhda and I started reading Bernstein's book at once. We have now read more than half, and its contents amaze us more and more.

In Siberia Nadezhda wrote her first political pamphlet, "The Working Woman," in which she described, in popular language, the hard life the Russian woman led at work, in the family circle and to bring up her children. She showed that women could not win their independence unless they participated in the political struggle. Lenin thought highly of his wife's literary effort and helped to get it published in 1901.

Alone in Pskov

His term of exile ended on January 29, 1900. Long before this he and Nadezhda had decided to settle in Pskov. This small provincial town not far from St. Petersburg and the western frontier seemed best suited for his plan to found a revolutionary newspaper.

In the autumn of 1899 they began to make arrangements to move. On October 17 of that year Nadezhda wrote to her mother-in-law:

> Only three months and 13 days before we leave. I have already applied to the Police Department for permission to go to Pskov. Mother intends to put in an application for herself, too.

They were refused permission, and Nadezhda had to live out the term of her exile in Ufa. After accompanying her to Ufa and helping her get settled there, Lenin visited his family in Moscow and then went on to Pskov.

He arrived there on February 26, 1900. We have none of the earliest letters to his family. From one he wrote to his mother on March 15, it is evident that he had not given up the idea of getting permission for Nadezhda to join him in Pskov:

> I submitted an application about Nadezhda on the tenth and will soon be looking forward to an answer. If (contrary to all expectations) the answer is unfavorable, I think I shall ask you (if your health permits) to go there and make a request in person.

By the end of March 1900 it was clear that permission had not been granted, and it was then, evidently, that the idea of Lenin's mother going to Pskov arose. This conclusion can be drawn from this letter Nadezhda wrote to her sister-in-law Maria on March 30, 1900:

> I sent you a letter the day before yesterday and received one from you yesterday. I'm very glad your mother may visit Vladimir because it looks as though I will not be able to leave here soon. Yes, Vladimir has lost quite a bit of weight lately, but he was fine until then. I think insomnia is more to blame for it than the catarrh. Toward the end he did not get enough sleep. He was excited before his departure, and, besides, it was so bitterly cold that he stopped taking walks altogether. As soon as we all got out of Shushenskoye, his mood improved and he began to eat and sleep like a human being. I think he'll be able to stop the catarrh with the waters, which helped him so much last time. In general, Vladimir looks after his health. He writes that he is being fed well. Still, it's a pity that he has to lead a bachelor's life. . . .

In the second half of March and the beginning of April 1900 Lenin was very busy with organizational matters. At great effort he arranged under the very noses of the local police the "Pskov conference" that discussed the founding of the newspaper *Iskra (The Spark)* and the magazine *Zarya (Dawn).* Before the conference he had to draft editorial statements for the future publications. At the conference itself he had to battle those opposed to publishing consistently Marxist periodicals. There were so many things to do that he literally "spun like a top," as he put it; so much so that he was late this time in wishing his mother and sister many happy returns on April 1, their name day. Neither the numerous arrangements that had to be made nor his fatigue nor the danger depressed Vladimir. But he was very much worried about Nadezhda's letters.

On April 6, 1900, he wrote to his mother:

> Nadezhda is most likely confined to her bed. The doctor found (as she wrote a week ago), that her illness . . . requires persistent treatment, that she should stay in bed for from two to six weeks. (I have sent her some more money because the treatment will involve considerable expense. . . .) This means she could not come here to me even if permission were given (there is no reply yet and I have practically stopped expecting any). I plan to pay her a visit in the spring, in about a month and a half, or perhaps even earlier.

From those last lines we can assume that by the beginning of April he had abandoned his plan of getting permission for her to move from Ufa to Pskov and planned to go to her. If this assumption is correct, it can only be explained by the circumstance that after the "Pskov conference" it became urgent that Lenin go to Germany, where the Russian Marxist newspaper *Iskra* was to be published. This being the case, there was no sense in getting his wife transferred to Pskov. On April 20, 1900, he submitted the following petition to the Director of the Police Department:

To His Excellency,
Director of the Police Department

From Vladimir Ilyich Ulyanov,
gentleman by birth, residing in
Chernov's house on Arkhangelskaya
Street in the town of Pskov

Petition

By decision of the Minister of Internal Affairs, I am forbidden to reside in the Ufa Guberniya, among others. At the present time my wife, Nadezhda Ulyanova, who is under surveillance, is residing in Ufa, and my request (in an application of March 10 of this year) for her transfer to the town of Pskov was refused. According to the latest news I have received from my wife, she is ill and is being treated by a local specialist, Dr. Fedotov; I indicate the doctor's name in the event of verification of my application, and if such verification is found necessary, I most humbly beg that it be made by telegraph. My wife's illness demands persistent treatment for a period, the doctors say, of not less than six weeks, and since my wife's mother, who is now by her side, will soon have to leave the town of Ufa, my wife will be left all alone, which might have an extremely detrimental effect on the course of treatment.

In view of the above, I have the honor to most humbly request permission to reside in the town of Ufa for a month and a half.

Vladimir Ulyanov, gentleman by birth

April 20, 1900, Town of Pskov

At the same time that he sent off this petition, Lenin started the formalities required to obtain a passport for travel abroad.

Meanwhile Nadezhda's health began to improve. Lenin kept his relatives informed of her progress. On May 5, 1900, he went to the office of the Governor of Pskov to inquire about his petition and was much surprised to learn that he had not only received permission to go abroad but that he could get a passport then and there. However, he was forbidden to go to Ufa to see his wife. He obviously had not expected anything like this. A letter he wrote on May 5, begun in the morning and finished several hours later, has been preserved. The first part of the letter was written just after he learned that he had received permission to travel abroad. This part of the letter is cheerful, happy and energetic. It said that he felt fine and intended to visit Nadezhda but did not know whether he would stay in Ufa a month and a half or less, and that in two hours he would receive his passport for foreign travel.

One of the reasons for Lenin's happy mood, reflected in this letter, was undoubtedly the fact that his prolonged efforts to found *Iskra* were nearing success.

The last lines of the letter, written several hours later, have an entirely different ring:

> I have just gotten my passport from the Governor's office and inquired about my petition to make a trip to Ufa. It turns out that I have been refused!!! This is something I did not expect at all, and now I am completely at a loss what to do!

As soon as Lenin's mother received this letter, she held a family council to decide how they could help. They agreed that he should make a trip from Pskov to St. Petersburg, or, if he could not, then his mother would go to the Police Department and ask permission for her son to visit his sick wife in Ufa. All this was explained in an urgent letter to Pskov.

His family evidently forgot that Lenin, who was under surveillance, was strictly forbidden to go to St. Petersburg. On May 10 he wrote his mother:

> . . . On the whole I agree with what you and Anna advise . . . and this is what I plan to do, only I shall have to give up the idea of going to St. Petersburg myself. I want to ask you to go—by Thursday the eighteenth, if you can manage it, and if you can't, then by Thursday the twenty-fifth, depending on when we see each other.

On May 10 he wrote that he would not go to St. Petersburg but would travel straight to Moscow. Yet on the night of May 19 he boarded train No. 18 in Pskov for St. Petersburg. Whether this clandestine trip to the capital was undertaken suddenly or whether he knew about it on May 10 but did not tell his relatives for reasons of secrecy is something we cannot say. However, the trip to St. Petersburg turned out to be very unlucky. The secret police were keeping a close watch. They followed him on May 20, and the morning of May 21 he was arrested. It was not until June 1, 1900, that he got to Moscow to see his relatives and on June 7 that he left with them for Ufa.

What is not clear is when permission was obtained for Lenin to make the trip to visit his wife. The two relevant documents preserved in the Police Department complicate the question rather than shed light on it.

In July 1900 he said good-by to Nadezhda in Ufa and to his relatives in Podolsk, near Moscow, and went abroad.

Abroad

His first period of life abroad as a political exile in Germany, Switzerland and England lasted from the summer of 1900 to November 1905. He had a particularly hard time in the first few months, when he had to live by himself. Nadezhda's term of exile did not end until March 11, 1901. Two documents that give an idea of his mood in the early months of his life abroad have been preserved. The first is a long businesslike letter to Nadezhda written in August 1900. Here is an excerpt:

> I have been intending to write you about my affairs for a long time, but various circumstances have kept interfering. My life is in quite a bit of a turmoil, too much of it, in fact, and this (N.B.)[6] despite really extraordinary measures to prevent turmoil. I live practically in solitude, actually, but there is turmoil nevertheless! I suppose this is inevitable and inescapable in any new situation, and it would be sinful to complain, especially since I am far from being as nervous as our delightful bookseller,[7] who falls into black melancholy and instant prostration under the influence of this turmoil. Along with the turmoil there are many good things, too! Well, now I'll tell you about affairs in the League of Russian Social-Democrats Abroad. I'll tell you about them on the basis of fact and story.

The letter goes on to give a detailed account of the reasons for the split in April 1900 between the two organizations of Russian revolutionaries in exile abroad: the Emancipation of Labor group and the League of Russian Social-Democrats Abroad.

We have another Lenin manuscript, written shortly thereafter, with the title "How *The Spark* Was Nearly Extinguished." It has now been established that this was not the manuscript of an article but the rough draft of a letter intended for Nadezhda and never sent. Even a cursory glance at the manuscript shows that it was written in several sittings. It describes the emotional drama he lived through in the closing days of the summer of 1900. To understand the depth of this drama and the unusual nature of the letter, we must know something of the events that preceded it.

At the conference held in Pskov in the spring of 1900 a final decision had been taken to publish a newspaper called *Iskra* and a magazine called *Zarya*. These periodicals were to be printed abroad, in Germany, which had the necessary facilities and people, and then smuggled into Russia.

At the end of July 1900, after having completed all the arrangements in Russia for founding *Iskra* and after visiting his family, Lenin went abroad. It was then that this event took place for which he could find no other words than "a real drama."

When he drafted a plan for publishing *Iskra* and *Zarya*, he thought members of the first Russian Marxist group, the Emancipation of Labor group, headed by Georgi V. Plekhanov, its founder and leader, would contribute to these publications. Agreement in principle had been reached at the beginning of 1900 that members of the Emancipation of Labor group, including Plekhanov himself, would contribute. All that remained were the final negotiations.

Lenin left for Switzerland, where the leaders of the Emancipation of Labor group were then living. The official talks began on August 24, 1900, but before then he had several meetings with Plekhanov which left him with a painful impression. Plekhanov turned out to be capricious and mistrustful and positive that he alone was right. This came as an unpleasant surprise to Lenin, but out of respect for Plekhanov he made an effort to be careful and to avoid "sore" subjects. An inauspicious beginning, but Lenin still hoped that things would arrange themselves somehow in subsequent conversations.

The more frequently they met, however, the more Plekhanov showed his intolerance, arrogance, unwillingness to listen to the arguments of others and, particularly, his insincerity.

The conference itself took place at Bellerive and Corsier, near Geneva, and lasted several days.

It became evident in the course of the conference that the differences between Lenin and Plekhanov were not so much on the questions of secondary importance that had been discussed during the preliminary negotiations as on fundamental, programmatic questions.

The meeting of August 26 was particularly stormy and bitter. Plekhanov vilified Lenin, gave him to understand that he regarded Lenin and his associates as careerists.

Lenin returned from this conference shaken and outraged. He wrote:

> My "love" for Plekhanov also vanished, and I felt incredibly wounded and bitter. Never, never in my whole life had I had such sincere respect and veneration for anybody, never had I behaved with such "submissiveness" before anyone—and never have I been subjected to such a rude "kick". . . . My mental state that evening was so complex, painful and befuddled that it is hard to describe it accurately! It was a real drama, a complete rupture with the thing which for years I had tended like a favorite child and with which I had inseparably linked up the whole of my life's work.

We can imagine his state of mind on that evening of Sunday, August 26, 1900, if he could write those dramatic lines a whole week later.

Still, that night he decided "to express my indignation to Plekhanov, give up the magazine and go away, retaining only the newspaper and planning to publish the magazine material in the form of pamphlets."

At the last minute an acceptable agreement with Plekhanov was reached in order to save the "important party undertaking," that is *Iskra* and *Zarya*. But this was not what Lenin had dreamed of. He wrote:

> Outwardly, nothing seems to have happened. The entire machine is to go ahead as before, only a string has broken inside, and instead of splendid personal relations there are dry, businesslike contacts with a constant calculation, according to the formula "*si vis pacem, para bellum*."[8]

Notwithstanding his self-control, Vladimir missed Nadezhda greatly.

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[6] *Nota bene:* mark well.
[7] A reference to one of the Russian exiles.
[8] "If you desire peace, be prepared for war."

His mood is apparent in the letters he wrote to his family. The recurring theme was Nadezhda. He counted the days to the end of her term of exile and the time when she could join him. On December 26, 1900, he wrote to his mother:

> Life goes along the same old way, a life that is rather muddled. I keep hoping to arrange my work systematically, but I don't seem to manage. Things will probably start going differently in spring, and then I'll be able to get into my stride.

Lenin did not mention Nadezhda, but his family knew, of course, why he placed so much hope on spring. On January 16, 1901, he wrote frankly:

> Not so long to wait now before Nadezhda arrives. Her term ends in two and a half months. Then I'll settle down properly.

The closer the time came for Nadezhda to be free, the more often he mentioned the fact.On January 27, 1901, he wrote, "Less than two months of Nadezhda's term left to go." And on February 20,"Nadezhda's term ends soon."

A foreign travel passport for his wife was giving Lenin grave concern. His official permission was required to obtain a passport for his wife, and for this he had to file a petition. Since he himself was living abroad, his petition would have to be certified by a Russian Consul.

On March 2, 1901, he wrote his family from Prague:

> Am leaving for Vienna. There turns out to be no Russian Consul in Prague (!), and the signature on my petition for a passport for Nadezhda must be certified.

Two days later he wrote from Vienna that he had gone through all the passport formalities, was sending Nadezhda a Vienna guidebook and wanted his sister Maria to buy her a railroad guidebook.

Nadezhda arrived in Munich in the middle of April 1901. With her arrival Lenin's mood changed noticeably. On May 19, 1901, he wrote his sister Maria, in prison at the time:

> Now that Nadezhda and Y.V.[9] have come, we have made ourselves much more comfortable, in an apartment of our own, and I am beginning to work more systematically.

After Nadezhda's arrival Lenin wrote, between May 1901 and February 1902, (besides letters, of course) about 20 works, including the long work *What Is To Be Done?* In the same period he read and made abstracts of several dozen books and articles for his work on the agrarian question.

Immediately after her arrival Nedezhda assumed the many difficult duties of secretary of the newspaper *Iskra*. For one thing, she had to do an enormous amount of work organizing secret correspondence, arranging passwords, ciphers, secret addresses, and so on.

The letters Lenin wrote his wife on the rare occasions when they were separated in the years 1901 to 1903 show how highly he valued her work and her advice on party matters.

From time to time his letters mention walks together and other forms of recreation. "Nadezhda and I were thinking of going rowing, but the weather is very changeable," he wrote his mother on August 3, 1901. On September.21 he reported:

> The weather here is now much better, after a fairly long rainy spell, and we are taking advantage of it for all kinds of outings to the picturesque environs. Since we did not manage to get away this summer, we must take advantage of this at least!

After they moved to London, there were even more reports of joint outings. On September 14, 1902, for example, he wrote his mother: "The weather is amazingly fine for autumn—making up for a bad summer, I suppose. Nadezhda and I have set out several times in search of fine suburbs, and found them." Sometimes he gave details. On March 29, 1903, he wrote his mother:

> The weather is warm now. Y.V. accompanied us on a long walk a few days ago. We took sandwiches with us instead of lunch, and set out for the whole day *ins Yüne* on a Sunday. (It always seems to turn out that we do what everyone else does here—choose a Sunday for a walk, although it is not particularly convenient since there are people everywhere.) It was a wonderful outing. The air made us all drunk, just like children, and afterward I went to bed, the way I used to do after hunting in Siberia. Outings are our passion. We're the only ones of the comrades here who are exploring the suburbs. We have discovered all sorts of "rural" paths and are familiar with the places near us. Now we are planning to go farther afield.

Mention of the theater or concerts occurs much more rarely, probably because they preferred the walking trips.

A letter of Lenin's of February 4, 1903, reads:

> Nadezhda and I are well, and jog along in the same old way. Not long ago we attended our first concert this winter. It gave us great pleasure, especially Tchaikovsky's last symphony, the *Symphonie Pathétique.*

Nadezhda's Illness

The goiter from which Nadezhda had suffered for a long time grew much worse in the spring of 1913. Lenin, much disturbed, decided to move immediately from Cracow to the village of Poronin, in the foothills of the Carpathians, where he hoped the pure mountain air and the quiet would help her.

In April he wrote to his family, and particularly to his brother Dmitri, a doctor in whose experience he had great faith. He described his wife's illness and asked his brother's advice.

These letters have not been preserved, but we know their contents from a letter Lenin's mother wrote to her youngest daughter on April 30, 1913.

> I have just had a letter from Vladimir in which he also writes to Dmitri, telling him that in spite of electric treatment for three weeks there has been no change in her eyes, neck and heart. . . . Friends advise him to take Nadezhda to Berne to Dr. Kocher, a first-class specialist in this disease. He'll cure her, they say. The disease is serious and should not be neglected. Later it will be too late to do anything. . . . Vladimir cannot make up his mind what is best. He wonders whether they should give up the cottage they have taken in the mountains where the air is so wonderful—what the doctors advised for her. If he takes her to Dr. Kocher, the latter may insist on an operation, and many people say such operations are difficult and the outcome uncertain. . . . Vladimir wants to know what Dmitri thinks. . . . The letter came two days before Dmitri's return. He read the letter and immediately got out his medical books, made notes, consulted with doctors here and only yesterday got the answer off by registered mail.

It soon became clear that mountain air alone would not cure Nadezhda, and she would have to be taken to Dr. Kocher. Lenin's letters show how worried he was. On May 8, 1913, he wrote one of his comrades:

> Note my change of address. We came to a village here near Zakopane to let the mountain air help Nadezhda's goiter. (We're at an altitude of about 700 meters.) I have been warned that to neglect the disease might end in disaster. But if I take her to Berne to Kocher. . . . He's a first-class celebrity, a surgeon. And surgeons like to cut up their patients. It seems an operation in this case is extremely dangerous and extremely doubtful. The disease is also treated with mountain air and quiet. But "quiet" is a hard thing to achieve in our nerve-racking life. The disease is caused by nervous disturbances. Nadezhda had three weeks of electric treatment but with no improvement. She still has all the symptoms of goiter, the prominent eyes, swollen neck and palpitations of the heart.
>
> Would you find out what you can about Kocher? I don't know how to do it, and I'd like to get an opinion. Would it be possible to arrange a talk with Kocher if one went with a student or a doctor? Or would he refuse to talk without seeing the patient? Or could one have a talk with him if one had a letter from Nadezhda's doctor, the one here in Cracow? If you could learn something significant in Berne about Kocher or from Kocher (the latter would be better, of course), I would be very grateful to you. If what you find out suggests we ought to come to Berne, then make a note of Kocher's office hours and when he takes his summer holiday, and how we should make arrangements to live in Berne, at a nursing home (or is that very expensive?) or in another way.
>
> Thanking you in advance for your efforts,
> I press your hand.

Lenin spoke of Nadezhda's illness to other people, among them the writer Maxim Gorky, and of course to his relatives.

Finally it was decided to go to Berne. The time spent waiting for the appointment with Dr. Kocher and then waiting for the operation on Nadezhda, who was placed in the clinic for that purpose, was filled with anxiety. Lenin could not write articles for *Pravda,* could not even write letters. Evidence of this is the fact that for the period between June 29 and July 25, 1913, we have only a single letter of his.

The operation was performed on July 23, 1913. On July 25 he wrote to Gorky:

> I've been meaning to write you but have put it off because of my wife's operation. The operation took place the day before yesterday, and she is now on the road to recovery. The operation proved fairly difficult. I'm very glad we had Kocher.

In a letter to his mother on July 26, Lenin wrote:

> Nadezhda had her operation on Wednesday, after two weeks of "preparation" at the clinic. The operation is evidently successful, for yesterday Nadezhda looked quite healthy and began drinking eagerly. It must evidently have been a difficult operation. They tortured Nadezhda for about three hours without an anesthetic, but she endured it courageously. She was pretty bad on Thursday—a high fever and delirium. You can imagine how frightened I was. But yesterday it was clear she was better, with no fever, a steadier pulse, and so on.
>
> Kocher is a splendid surgeon. With a goiter one should go to him.
>
> I embrace you tenderly, my dear, and send Maria and Anna my very best. Nadezhda sends her best to all of you.

Nadezhda's successful operation restored his peace of mind and usual capacity for work.

He was concerned for his wife's health at all times, not only when she was ill. Here is an example from the Soviet period.

When Lenin's health grew worse in the spring of 1922, the question arose of sending him to a health resort. During the negotiations and correspondence on the subject Lenin insisted time after time that he would go only to a resort suitable for Nadezhda. In his letters we find such phrases: "I must know the altitude (above sea level) of the proposed house since N.K.'s heart is bad and she could not stand a high altitude." "Abastuman is out of the question; it is like a 'coffin' down there in that narrow depression. Not the place for nervous people. There is nowhere to walk. You have to climb, and that is out of the question for Nadezhda. Borzhom would be suitable; there would be walks on level ground and Nadezhda needs that."

She died at the age of 70, a professional revolutionary, a leading figure in the Communist Party and the Soviet state, the author of many books and articles on education. Two-thirds of her life was inseparably bound up with Lenin.

Today, on the eve of the centennial of his birth, we remember Nadezhda Krupskaya, who did so much to help him, with special warmth and gratitude.

Courtesy of the magazine Nauka i Zhizn

[9] Nadezhda's mother.

May 1919:
Lenin and his wife
leave the
Trade Union House
after a meeting.



This photo was taken in August or September 1922, while Lenin was living in Gorki (in the Moscow countryside). With his wife Nadezhda K. Krupskaya, his nephew Victor, and a worker's daughter Vera, he had stopped to rest during a walk through the park.



Autumn, 1920:
In Lenin's
apartment. With
him are his wife
and members
of his family.



THE ORIGINAL: WHERE IS IT?

The fifth, and latest, edition of Lenin's* Collected Works, *completed in 1965, consists of 55 volumes and includes about 9,000 separate texts. The number of volumes in Lenin's* Collected Works *has been growing from edition to edition, largely due to the discovery of lost texts through painstaking searches, in some cases lasting years. Between 1959 and 1963 alone this search yielded 579 hitherto unknown texts. One text that has not yet turned up is the second, central, part of his book* What the "Friends of the People" Are and How They Fight the Social-Democrats *(1894). This important work gives a detailed analysis of the unscientific, idealist views of the Russian Narodniks and sets forth the fundamentals of historical materialism. In contrast to the Narodniks, who regarded the peasant commune as the embryo and foundation of socialism, Lenin linked up Russia's future with the working class. His book ended with the prophetic words:

> ***It is on the working class that the Social-Democrats concentrate all their attention and all their activities. When its advanced representatives have mastered the ideas of scientific socialism, the ideas of the historical role of the Russian worker, when these ideas become widespread, and when stable organizations are formed among the workers to transform the workers' present sporadic economic war into conscious class struggle — then the Russian worker, rising at the head of all the democratic elements, will overthrow absolutism and lead the* Russian proletariat *(side by side with the proletariat of all countries) along the straight road of open political struggle to the VICTORIOUS COMMUNIST REVOLUTION.***

The following is an excerpt from the book* In Search of a Priceless Legacy *by historian Roman T. Peresvetov. (Moscow, 1968)

THE MOST IMPORTANT work Lenin wrote in the early period of his revolutionary activity was *What the "Friends of the People" Are and How They Fight the Social-Democrats.*[1] The manuscript was most likely destroyed during the frequent searches and arrests by the secret police in St. Petersburg at the end of the last century, in an effort to curb the growing activity of the clandestine study groups which young Lenin had united into the revolutionary organization the League of Struggle for the Emancipation of the Working Class. The manuscript was, however, lost after the book was published illegally.

There is evidence that copies of the book were made a number of times by various methods and were circulated in many Russian towns. However, owing to the same circumstances that probably account for the destruction of the original, all copies of the book vanished. This latter assumption was just an assumption, though, and there was still hope that the book would be found. A search was begun in the early Soviet years.

Without the Author's Name

The persons engaging in the search established, in the first place, that the book had been printed without the author's name on the cover. Moreover, it had come out in separate parts, which were hectographed or mimeographed. The primitive duplicating equipment of the period made no more than 50 copies at a time. For this reason separate parts were duplicated several times. Since the duplication was clandestine, it was not always possible to get out the various parts in their proper sequence or in the same number of copies.

The first part, a critique of the views of Nikolai Mikhailovsky,[2] a leader of the liberal, that is, nonrevolutionary, right wing of the Narodniks, was printed on five occasions in a total of about 300 copies. Owing to difficulties that arose during its printing, the second part, containing an analysis of the views of another prominent leader of that movement, Sergei Yuzhakov,[3] came out in something like 150 copies. Finally, the third part, in which Lenin presented the Marxist view in a critique of Sergei Krivenko,[4] another leader of the liberal section of the Narodniks, was printed only once, in St. Petersburg.

Lenin's book was well received in Russian Marxist circles. Copies of it were even made by hand. It was not only the police, however, who destroyed the hectographed and handwritten copies. Fearing search and arrest, quite a few owners of the book burned it themselves. For example, those were the circumstances under which nearly all the copies of the fifth edition of the first part of the book, printed by hectograph in a village near the Ukrainian town of Chernigov, were burned.

What with one thing and another, this book of Lenin's which was well known to the early Russian Marxists and contributed significantly to their unity was thought to have been completely lost. It was not until 1923, in Petrograd, that Vladimir Nevsky, later director of the Lenin Library, found two parts of the book, the first and the third, in the archives of the former Police Department. At just about the same time, two copies of the same two parts were found in archives in Berlin. Ever since then, *What the "Friends of the People" Are* has been included in the editions of Lenin's *Collected Works* and has been put out as a separate volume. In each case, however, including the fifth and latest edition of the *Collected Works,* the editors have pointed out that the text is incomplete because the second part has not yet been found.

What happened to the second part? Why has it not come to light?

For technical reasons and also for secrecy considerations, the various parts of *What the "Friends of the People" Are* were printed separately and in different places. Afterward, however, they were often brought together. In reminiscences by friends and associates of Lenin at that period, there is mention of all three parts as a single unit. Why, then, is just the second part lost, and is there any hope that it will be found? Some of the circumstances under which this part was printed and circulated help to provide an answer to the question.

In the spring of 1894 Alexei Ganshin, a young engineer who was closely connected with a Marxist circle in St. Petersburg led by Lenin and also with a group of revolutionaries in Moscow, came forward with the tempting proposal to set up *What the "Friends of the People" Are* in type and print it illegally. He hoped to carry out this project in Moscow with the help of two of his cousins, Alexander and Vladimir Maslennikov, both students at the Higher Technical School, who had managed to get hold of a set of type.

The proposal was enthusiastically approved, but problems developed when they started to carry it out. In Moscow Alexei Ganshin learned that the Maslennikovs had been forced to return the type to the compositor: He had suddenly become frightened of doing clandestine work.

Next, Alexei Ganshin tried to persuade a printing worker in a small provincial town to either print the book in secret or at least supply a set of type. Nothing came of this either because the worker was afraid to take the risk. He did, however, get a lithographic stone for Ganshin.

Lenin came to Moscow from St. Petersburg, met Ganshin and gave him the manuscript of all three parts of the book. For reasons of secrecy Ganshin decided to print the book at his father's estate in Vladimirskaya Guberniya, some 150 miles northeast of Moscow. He went there with a typewriter, a roller and a supply of printer's ink, taking Vladimir Maslennikov

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[1] At that time the Russian Marxists called themselves Social-Democrats.

[2] Nikolai K. Mikhailovsky (1842-1904), sociologist and literary critic, one of the editors of the magazine *Russkoye Bogatstvo* (published in St. Petersburg from 1876 to 1918). An advocate of the antiscientific subjective method in sociology and a supporter of the reactionary theory of "heroes" and the "mob."

[3] Sergei N. Yuzhakov (1849-1910), economist and sociologist, author of *Agricultural Future of Russia's Black Earth Belt, Sociological Studies, Problems of Enlightenment* and other books. An adherent of the subjective school in sociology.

[4] Sergei N. Krivenko (1847-1907), economist, one of the editors of the magazine *Russkoye Bogatstvo,* author of *Concerning Cultured Individuals* (1893), *The Needs of the Folk Industry* and other works. An advocate of reconciliation with czarism, he denied the existence of class antagonisms. Like Mikhailovsky and Yuzhakov, he actively opposed Marxism and the Russian Marxists.

ong to help him. But they were inxperienced, and nothing came of the enture: The copies they made were oo blurred.

Returning to Moscow, Maslennikov anaged to pick up a mimeograph achine for small leaflets, which he sed as a model to make a machine iat would be suitable for printing the ook. This crude mimeograph mahine made in a carpentry shop was ery slow, however. Lenin, disturbed y all this, sent a member of his landestine circle to Ganshin to get ie finished copies as well as the ianuscript and bring them to St. 'etersburg. By this time the St. 'etersburg circle had acquired a ectograph of its own on which sevral editions of the book were printed i a relatively short time. We know hat at Lenin's request the third part vas printed after the first, although we lo not know why.

Yellow Notebooks

It is possible that the St. Petersburg Marxists printed the third part after the first because the second part was being printed meanwhile in Moscow. This supposition is founded, for one thing, on the fact that a confidential memorandum from the Governor of St. Petersburg dated May 27, 1894, (it was found in the police archives after 1917) said that two parts of the Marxist book about "friends of the people" had been printed in St. Petersburg and one part in Moscow. This police document is not too reliable a source, however. A study of the archives made in Soviet times shows that the czarist secret police were very poorly informed about the circulation of Marxist literature in Russia. As a matter of fact, there are several reliable indications that all three parts of the book were printed in St. Petersburg. They were bound in similar yellow covers and circulated under the name of "Yellow Notebooks." Nadezhda Krupskaya, among others, mentions this in her reminiscences.

From Alexei Ganshin we know that while he printed 100 copies of the first part at his father's estate and a certain number of copies of the second part in his father's Moscow apartment, he knew for certain that the book was "printed again in its complete form" in St. Petersburg. When Alexei Ganshin was arrested in the middle of 1905, the police confiscated his one and only copy of the third part of Lenin's book. By this time neither the first nor second parts were any longer in his possession.

There Is Hope

So many years have passed since that there would seem to be no hope of finding the lost text; yet there is hope. There are grounds for assuming that at least one copy of the second part escaped destruction. Let us look into some of the episodes of the search and make a supposition, even if it is very hypothetical.

At one point in the twenties it looked as though the scholars who were collecting Lenin's literary legacy had hit on the right track. This was after a bibliophile in Leningrad (formerly Petrograd and St. Petersburg) mentioned an interesting notebook he had come across "just a little while ago." It consisted of a bound collection of pamphlets which had been issued by the League of Struggle for the Emancipation of the Working Class, founded by Lenin. Included in the notebook was a copy of the second part of *What the "Friends of the People" Are*. The bibliophile then said that since he had no idea the notebook might have any particular value, he had turned it over to the depository of the Leningrad Public Library. He had not thought of making a note of its registry number or letters. The most painstaking search was made in the depository, but it failed to yield the unique notebook.

Another episode. A young historian named Georgi Zhuikov, knowing that

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Lenin had presented a copy of all three parts of *What the "Friends of the People" Are* to Georgi Plekhanov at a meeting in Switzerland, searched for it among Plekhanov's private papers in the Plekhanov archive in Leningrad. In a folder labeled "Unknown Manuscripts," he came across a pamphlet which had been printed by hectograph and lacked the first few pages. This turned out to be the third part of *What the "Friends of the People" Are*, which had now been found for the fourth time.

Inspired by this find, Georgi Zhuikov began to explore other avenues. In the Moscow Regional Historical Archives, among the items of evidence collected by the czarist secret police in a case against a group of revolutionary college students, he found still another copy of the third part of the book (the fifth to be found). It did not have a cover or title page, but the text was intact. In the same archives Georgi Zhuikov unearthed papers relating to Alexei Ganshin's arrest, among them a typed page which analyzed the views of Sergei N. Yuzhakov, the very same man with whom the second part of Lenin's book dealt. On this page Yuzhakov is called a "friend of the people" in quotation marks, exactly as in Lenin's book. Could this be an outline of a section of the second part? It is highly probable. All the more so since the page comments on Yuzhakov's view regarding a domestic market in Russia to promote the development of capitalism—a question that stirred up a violent controversy between the Marxists and the Narodniks. Furthermore, the page had been typed on a Remington, the make of typewriter Ganshin had bought in Moscow, and had evidently been duplicated on the mimeograph which had given Ganshin so much trouble.

After a study of the page, scholars at the Institute of Marxism-Leninism in Moscow reached the conclusion that the supposition required additional proof. Zhuikov continued the search (all of this in his spare time), and it was crowned by another valuable discovery.

Among the papers in the Central State Historical Archives in Moscow, he found an unknown letter by Lenin dated July 21, 1894—just about when Lenin was working on the second part of *What the "Friends of the People" Are*. This was evidently the work the letter refers to in veiled form, for purposes of secrecy.

The letter was found in the secret police division of the archives. The police had intercepted the letter and made a copy. They had removed it from an envelope sent by Princess Anna Kugusheva from Nizhny Novgorod (now the city of Gorky, on the Volga) to Switzerland on July 25, 1894. She had sent Lenin's letter together with her own to Lyubov Milovidova, fiancée of Leonid Krasin, member of the Marxist circle of which Lenin became the leader soon after his arrival in St. Petersburg.

At the end of her letter Princess Kugusheva wrote: "Yes, Zinaida Pavlovna sends both of you her regards. I see her often. She is a very fine person. I am sending you a letter at the request of U."

The police official who intercepted the letter wrote the surname Nevzorova in brackets next to the name Zinaida Pavlovna and the name Ulyanov (that is, Lenin) next to the initial "U."

Lenin's letter said, in part:

> I received the copy and sat down to it. The point is that you dropped the job unfinished. When we began reading the clean copy of the notebooks, there turned out to be a pile of mistakes (I saw that there are also lots of mistakes in the drawings). After reading it, our mutual friends said it was a very poor job. And so, although I was devilishly fed up with it, I had to sit down and look it over. As a result, the clean notebooks turned into a rough draft.

At the bottom of the typed copy of the letter made by the police was the signature "Ulyanov" copied in ink from the original.

Could the notebooks mentioned in this letter be the "yellow" ones?

Georgi Zhuikov started out by trying to determine who Princess Anna

Kugusheva was, and where and when Lenin had met her.

In the biographical data on Lenin in his *Collected Works,* Georgi Zhukov found no mention of Lenin's having visited Nizhny Novgorod, where the sender of the letter might have lived, in 1894. However, in an article by Zinaida Nevzorova in a recently published volume of reminiscences of Lenin by people of Nizhny Novgorod, we find the following:

> I do not remember exactly the month—either the end of May or, more likely, the beginning of June 1894—when Vladimir Ulyanov paid a visit to Nizhny Novgorod on his way from St. Petersburg. He wanted to make contact with the Nizhny Novgorod group of Social-Democrats. A meeting to introduce him to our organization was held at the home of Anna Kugusheva, a former student of the women's courses in St. Petersburg.

It turns out that Princess Kugusheva had attended the same women's courses which Nadezhda Krupskaya (Lenin's wife), Zinaida Nevzorova and many other participants in the revolutionary movement completed. Anna Kugusheva was also an active member of the Social-Democratic movement, as was her brother Yegor, a student at the Technological Institute where the Marxist circle Lenin led had been founded. The "Review of the Main Interrogations Carried Out in the Imperial Gendarme Departments for State Crimes" stated that Princess Kugusheva and her brothers had been arrested and deported several times "for Social-Democratic propaganda among workers." Her brother Yegor knew Lenin well and helped to print the first part of *What the "Friends of the People" Are* in St. Petersburg.

The extract from Lenin's letter cited above says, "I received the copy," but it does not say what it was a copy of or why it had been sent to him. These notebooks had evidently been delivered illegally, judging by certain words Lenin underlined in the letter. Georgi Zhukov concluded that on receiving this copy of his book, Lenin had to sit down and proofread it because the senders had "dropped the job unfinished."

Georgi Zhukov believes that a copy of *What the "Friends of the People" Are* had been sent to Lenin and that he had corrected the mistakes in preparation for its publication abroad. Judging by the fact that the letter mentions drawings, that is, diagrams and charts, appended to the notebooks, and that their purpose could have been to refute the economic calculations of the Narodniks, what Lenin was evidently doing in this case was preparing the second part of his book for publication.

The discovery made by Georgi Zhukov deserves serious attention, although his analysis of the contents of the letter leaves unanswered the question of whom Lenin was writing to. The fact that it was enclosed in an envelope addressed to Lyubov Milovidova does not necessarily mean it was intended for her.

The letter from Princess Kugusheva to Milovidova in the same envelope has the sentence, "Yes, Zinaida Pavlovna sends both of you her regards." Could it not follow from these words that another person, whose name we do not know, lived at the same address to which Lenin's letter was sent? On the other hand, it is possible that in the summer of 1894 Lyubov Milovidova tried to print the second part of the book secretly in Nizhny Novgorod but did not finish the job because of her departure for Switzerland. If this was the case, then Lenin's reproach that "you dropped the job unfinished" becomes clear.

In general, Lenin's correspondence, which has been far from completely brought to light and deciphered, may provide the key to the discovery of the missing second part of *What the "Friends of the People" Are* or explain its disappearance.

In the United States?

Meanwhile, the search continues. Among the many conjectures regarding the whereabouts of the second "Yellow Notebook" is this one:

In the spring of 1897 Lenin lived for a time in the Siberian town of Krasnoyarsk, waiting for the authorities to decide where he would be exiled. (They chose the village of Shushenskoye.) Here he obtained permission to use the then well-known library of a local merchant named G. V. Yudin, and he visited this library many times. Yudin was an avid collector of uncensored and banned publications and could, of course, have obtained the "Yellow Notebooks" from one of the many political exiles who in those years passed through Krasnoyarsk on their way to more remote parts of Siberia.

Yudin's library of more than 80,000 titles was sold to the Library of Congress in the United States in 1907 after the czarist government had refused to buy it "for lack of funds." For some reason this collection, which undoubtedly has considerable value, is not mentioned in the latest and most complete guide to the archives and manuscript collections in the United States, published in 1961. It is known, however, that Yudin's collection was not preserved intact in the United States. Most of it was distributed among collections of various subjects; only a fraction of the original library is left. So who knows? It could be that the second "Yellow Notebook," which searches in Russia and other places in Europe have not brought to light, is lying on a shelf somewhere in the United States.

The search for the missing part of Lenin's book would be facilitated somewhat if we had a better idea of its contents. What information we do have on that score is fragmentary. Some of the information comes from the reminiscences of readers who were familiar with the complete text. There is Alexei Ganshin, for instance, who said that the second part was longer than the first or the third.

What the Missing Part Is About

References to the contents of the second part can also be found in other writings by Lenin himself. For instance, in the epilogue to the first edition of the first part of the book, which analyzes views of Mikhailovsky, he wrote that the next two parts would deal with the views of other contributors to the magazine *Russkoye Bogatstvo,* namely, Sergei Yuzhakov and Sergei Krivenko. Since Krivenko's opinions are analyzed by Lenin in the third part, the second part should deal with Yuzhakov, whom Lenin called "the most striking exponent of the politico-economic theories of the Narodniks."

In Lenin we also find several other fragmentary indications as to the contents of the second part, from which we can conclude that here he demonstrated the insolvency of Yuzhakov's "childish idea" that capitalism in Russia did not affect the handicraft industries. In the first part of his book Lenin says:

> We shall, incidentally, see later that it is a constant and consistent tactic of the "friends of the people" to shut their eyes pharisaically to the intolerable condition of the working people in Russia.

The words "see later" undoubtedly refer to the second part of the book.

In the third part of the book we find enough direct references to the second part to give us quite a list of the questions covered. In the second part Lenin analyzed and refuted: the erroneous views of the Narodniks on the development of capitalist society, in particular, their denial of capitalist development in Russia; the exaggeration by the Narodniks of the significance of the reform of 1861 which abolished serfdom; their idealization of the role of the capitalist as a "model entrepreneur"; the failure of the Narodniks to understand the essence of home industries as a part of capitalist production; their underestimation of the hardships of Russia's working people which, they believed, could be alleviated by turning to the bourgeoisie and the czarist government for assistance.

In the opinion of scholars, the second part of Lenin's book was a reply to a long article in *Russkoye Bogatstvo* by Sergei Yuzhakov headed "Problems of Russia's Economic Development." Lenin's choice of an almost identical heading—"A Study of Russia's Economic Development"—was no doubt deliberate. Here, evidently, he refuted Yuzhakov's views with a scientific, Marxist analysis of the economic development of Russia.

ON MATERIALISM IN HISTORY

By Vladimir I. Lenin

This excerpt (the title is SOVIET LIFE's) is from Part I of Lenin's* What the "Friends of the People" Are and How They Fight the Social-Democrats, *in which he analyzes the idealist subjective views of history held by Nikolai Mikhailovsky, an ideologist of liberal Narodism (a nineteenth century movement for a peasant social revolution). Lenin contrasts the unscientific ideas of the Narodniks with the Marxist, materialist idea of history.

He presents Marx's concept that the sum total of the relations of production constitutes the economic structure of society—the real foundation upon which a legal and political superstructure rises, and to which definite forms of social consciousness correspond. He then writes:

THIS IDEA OF MATERIALISM in sociology was in itself a stroke of genius. Naturally, *for the time being* it was only a hypothesis, but one which first created the possibility of a strictly scientific approach to historical and social problems. Hitherto, not knowing how to get down the simplest primary relations such as those of production, the sociologists undertook the direct investigation and study of political and legal forms, and stumbled on the fact that these forms emerge from certain of mankind's ideas in the period in question. There they stopped; it appeared as if social relations are consciously established by men. But this conclusion, fully expressed in the idea of the *Contrat Social*[1] (traces of which are very noticeable in all systems of utopian socialism), was in complete contradiction to all historical observations. It never has been the case, nor is it so now, that the members of society conceive the sum total of the social relations in which they live as something definite, integral, pervaded by some principle. On the contrary, the mass of people adapt themselves to these relations unconsciously, and have so little conception of them as specific historical social relations that, for instance, an explanation of the exchange relations under which people have lived for centuries was found only in very recent times. Materialism removed this contradiction by carrying the analysis deeper, to the origin of man's social ideas themselves; and its conclusion that the course of ideas depends on the course of things is the only one compatible with scientific psychology. Further, and from yet another aspect, this hypothesis was the first to elevate sociology to the level of a science. Hitherto, sociologists had found it difficult to distinguish the important and the unimportant in the complex network of social phenomena (that is the root of subjectivism in sociology) and had been unable to discover any objective criterion for such a demarcation. Materialism provided an absolutely objective criterion by singling out "production relations" as the structure of society, and by making it possible to apply to these relations that general scientific criterion of recurrence whose applicability to sociology the subjectivists denied. So long as they confined themselves to ideological social relations (*i.e.,* such as, before taking shape, pass through man's consciousness)[2] they could not observe recurrence and regularity in the social phenomena of the various countries, and their science was at best only a description of these phenomena, a collection of raw material. The analysis of material social relations (*i.e.,* of those that take shape without passing through man's consciousness: when, exchanging products, men enter into production relations without even realizing that there is a social relation of production here)—the analysis of material social relations at once made it possible to observe recurrence and regularity and to generalize the systems of the various countries in the single fundamental concept: *social formation.* It was this generalization alone that made it possible to proceed from the description of social phenomena (and their evaluation from the standpoint of an ideal) to their strictly scientific analysis, which isolates, let us say by way of example, that which distinguishes one capitalist country from another and investigates that which is common to all of them.

Thirdly, and finally, another reason why this hypothesis for the first time made a *scientific* sociology possible was that only the reduction of social relations to production relations, and of the latter to the level of the productive forces, provided a firm basis for the conception that the development of formations of society is a natural process of history. And it goes without saying that without such a view there can be no social science (The subjectivists, for instance, although they admitted that historical phenomena conform to law, were incapable of regarding their evolution as a natural process of history, precisely because they confined themselves to the social ideas and aims of man and were unable to reduce them to material social relations.)

Then, however, Marx, who had expressed this hypothesis in the forties, set out to study the factual *(nota bene)* material. He took one of the social-economic formations—the system of commodity production—and on the basis of a vast mass of data (which he studied for not less than 25 years) gave a most detailed analysis of the laws governing the functioning of this formation and its development. This analysis is confined exclusively to production relations between members of society. Without ever resorting to factors outside the sphere of these production relations for an explanation, Marx makes it possible to discern how the commodity organization of social economy develops, how it becomes transformed into capitalist organization, creating antagonistic classes (antagonistic within the bounds of production relations), the bourgeoisie and the proletariat, how it develops the productivity of social labor, and thereby introduces an element that becomes irreconcilably contradictory to the foundations of this capitalist organization itself.

Such is the *skeleton* of *Capital.* The whole point, however, is that Marx did not content himself with this skeleton, that he did not confine himself to "economic theory" in the ordinary sense of the term. While *explaining* the structure and development of the given formation of society *exclusively* through production relations, he nevertheless everywhere and incessantly scrutinized the superstructure corresponding to those production relations and clothed the skeleton in flesh and blood. The reason *Capital* has enjoyed such tremendous success is that this book by a "German economist" showed the whole capitalist social formation to the reader as a living thing—with its everyday aspects, with the actual social manifestation of the class antagonism inherent in production relations, with the bourgeois political superstructure that protects the rule of the capitalist class, with the bourgeois ideas of liberty, equality and so forth, with the bourgeois family relationships. It will now be clear that the comparison with Darwin is perfectly accurate: *Capital* is nothing but "certain closely interconnected generalizing ideas crowning a veritable Mont Blanc of factual material."[3] And if anybody has read *Capital* and contrived not to notice these generalizing ideas, it is not the fault of Marx, who, as we have seen, pointed to these ideas even in the preface. And that is not all; such a comparison is correct not only from the external aspect (which for some unknown reason particularly interests Mr. Mikhailovsky), but also from the internal aspect. Just as Darwin put an end to the view that the species of animals and plants are unconnected, fortuitous, "created by God" and immutable, and was the first to put biology on an absolutely scientific basis by establishing the mutability and the succession of species, so Marx put an end to the view that society is a mechanical aggregation of individuals which allows all sorts of modification at the will of the authorities (or, if you like, at the will of society and the government) and which emerges and changes casually. He was the first to put sociology on a scientific basis by establishing the concept of the economic formation of society as the sum total of given production relations, by establishing the fact that the development of such formations is a natural process of history.

Now—since the appearance of *Capital*—the materialist conception of history is no longer a hypothesis, but a scientifically proven proposition. And until we get some other attempt to give a scientific explanation of the functioning and development of some formation of society—formation of society, mind you, and not the way of life of some country or people, or even class, etc.—another attempt just as capable of introducing order into the "pertinent facts" as materialism is, that is just as capable of presenting a living picture of a definite formation, while giving it a strictly scientific explanation—until then the materialist conception of history will be a synonym for social science. Materialism is not "primarily a scientific conception of history," as Mr. Mikhailovsky thinks, but the only scientific conception of history.

Written in the spring and summer of 1894. First printed on a hectograph, underground, that same year.

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[1] Jean-Jacques Rousseau, *Du contrat social; ou, Principes du droit politique* (Amsterdam: 1762). The book, translated into Russian in 1906, asserted that every social system should be the result of a free agreement, of a contract between people. (Footnote by SOVIET LIFE.)

[2] We are, of course, referring all the time to the consciousness of "social relations" and no others. (Footnote by Lenin.)

[3] The quotation is from Mikhailovsky's article; the reference is to Darwin's work on the origin of animal and plant species. (Footnote by SOVIET LIFE.)

Vera Dulova, harpist and teacher (on left), in the Bolshoi orchestra pit.

HER HARP HAS the sonority of a full orchestra—the quaver of the strings, the deep-throated rumble of the double bass, the tinkle of the harpsichord, and even the organ's chorale. At her touch, this instrument, created for pizzicato, takes on the mellowness of a violin or of the human voice.

Her technique is flawless. Pierre Jamet, famous French harpist, described Vera Dulova as the world's finest harp performer.

"Femininity Incarnate"

That she became a musician is hardly surprising. Her father, Georgi, was professor of violin at the Moscow Conservatory. Her mother, Maria, sang at the Royal Mariinsky Opera in St. Petersburg before becoming a concert singer in Moscow. Her grandmother was a pupil of Nikolai Rubinstein, that brilliant pianist who founded the Moscow Conservatory.

Vera was five when she took her first piano lesson. But she was drawn to the cello. Her father thought the cello was unsuitable for ladies. He offered her a choice of any other instrument. She hated scales and wanted an instrument that dispensed with them. He told her that you had to practice scales on all instruments, including drums. Since it did not matter she chose the harp. Her father approved. "That instrument," he said, "is femininity incarnate." And so she became a harpist.

If you ask Vera why, she has no answer. She was not especially taken with the sound of the harp, or with the performance of any harpist. But for music her choice was a happy one. It gave us a great harpist.

It Began with a Card Game

Chance played a large role in the history of Russian harp playing. It began with Alexander Slepushkin, a dashing hussar, who led the dissipated life of an officer until he won a harp at a card game. From sheer boredom, he took a few lessons and enjoyed them so much that he left the army and went abroad for serious study. He finished his musical education at the age of 27.

On his return to Russia, Slepushkin became a professor at Moscow Conservatory. He wrote s books on teaching t strument and a numb his students becam mous harpists. One most talented was Korchinskaya, who g ated from the conser in 1915 with a gold al.

Irina Blokha *Tatyana Tauer*





FIRST HARPIST

By Konstantin Telyatnikov
Photographs by Georgi Petrusov

Years of Study

When Dulova entered e Moscow Conservatory 1922, Professor Slepush- was no longer there; had died in 1918. She studied with Maria Korchinskaya. In 1925 she played at a concert given by conservatory students for the benefit of homeless orphans. People's Commissar of Education Anatoli Lunacharsky was there. A cultivated man, he immediately recognized the young harpist's unusual talents. When she graduated from the conservatory, Lunacharsky gave her a scholarship to continue her education in Germany. There she studied for two years with Professor Max Saal and gave a few concerts which were applauded by the German press.

Dulova returned to the Soviet Union in 1930, a mature musician with a good repertory. In 1932 and thereafter she was a soloist with the Bolshoi Theater orchestra, and in 1935 won first prize at the countrywide competition of musicians in Leningrad. Two years later she began to teach at the Ippolitov-Ivanov College of Music, and since 1944 she has been a professor at the conservatory.

Natalya Shameyeva *Emilia Moskvitina*



Virtuosity

A great musician always enlarges the potentialities of his instrument. It becomes part of his hands, his thoughts, his very soul. He enriches the musical language of his time no less than the composer, for it is the performer who translates the abstract laws of counterpoint into objective reality. It is not uncommon for a work to be composed for a particular performer. For Dulova, Sergei Vasilenko and Alexander Mosolov wrote harp concertos; Alexander Baltin, a sonatina; Yevgeni Golubev, a quintet (for harp and string quartet); and Georgi Kreitner, Ivan Shishov, Andrei Volkonsky and Nina Makarova, musical pieces. Dulova herself has arranged for the harp several works written for other instruments and for the orchestra.

The place in musical history of even great performers is measured, in part, by the pupils they train. Dulova's pupils are in the leading Soviet orchestras. Their solo performances are praised by audiences and critics, and many of these pupils are teachers in their own right.

In September 1965, our harpists entered their first international competition. It was held in Jerusalem and Tel Aviv. Many of their fellow contestants arrived with experience at international competitions and









The flageolet technique is demonstrated by Professor Dulova at Moscow Conservatory.



festivals. The Soviet Union was represented by Dulova's pupils Emilia Moskvitina, Natasha Shameyeva (Strebkova) and Natasha Tsekhanovskaya. Though this was their initial big test abroad, they came through with flying colors, winning the second, third and fourth prizes respectively. The first prize went to Martine Géliot, a French pupil of Professor Pierre Jamet.

Our Interview

The first international competition of harpists to be held in Connecticut has been organized by the Hartt College of Music of the University of Hartford. It will take place this month. Vera Dulova is a member of the jury.

I asked her in an interview, "What place would you say the harp has in modern music?"

"In the last two or three decades it has become a more important solo instrument. Before then, it was considered a salon instrument, on which the daughters of rich and aristocratic families strummed their 'nocturnes.' Now the repertory for the harp has been much enlarged. Prokofiev, Khachaturyan, Hindemith, Casella and many others have composed for the instrument. Paul Creston wrote an interesting rhapsody for the harp, which Khachaturyan likes very much. The famous composer once dropped into my class and heard one of my pupils playing it. 'What charming music!' he exclaimed. 'It's so new, and yet the novelty does not outshine the music.' Marcel Grandjany, American composer and harpist, composed a lovely *Fantasie on a Haydn Theme.* There are some interesting arrangements for the harp by Professor Aristid von Wurtzler of Hartt College from the work of Handel, Corelli, Vivaldi and other composers. In short, solo harpists now have a large repertory to choose from."

"I suppose the harp also has a larger place in the modern orchestra?"

"Unfortunately not. The older composers wrote far more interesting orchestra scores for the harp. This is especially true of the ballet. Take Tchaikovsky's *Swan Lake, Sleeping Beauty* and *Nutcracker,* for instance. They all have lovely solos and variations and enchanting adagios. Glazunov's ballet, *Raymonda,* and Asafyev's ballet, *Fountain of Bakhchisarai,* have brilliant scores for the harp. At one time it was traditional for a ballet to have solos for the harp, violin and cello. Unhappily, contemporary ballet composers have abandoned this tradition. I say unhappily because the harp adds a very beautiful and warm tonal effect to the orchestra score."

"Will you tell us something about the Soviet harpists who are competing?"

"Emilia Moskvitina, Natasha Shameyeva, Tatyana Tauer and Irina Blokha will be playing at Hartford. Moskvitina and Shameyeva won prizes at the contest in Israel. Tauer and Blokha are competing internationally for the first time. I'm making no forecasts; the one thing I do know is that the competition will be stiff. The program is very difficult and most of the participants are experienced. About our girls, Moskvitina is first harpist in the Moscow Philharmonic Orchestra conducted by Kondrashin. Besides, she gives a recital annually, each time with a new program. Moskvitina is a fine musician—her technique is brilliant, and she is completely at home with the harp. There are times I wish her renditions were a little less perfect, a little more spontaneous. . . . But that, of course, depends on the character of the piece she is playing."

"What is she best at—the classics or modern music?"

"She plays everything well but the classics are her forte. Her rendition of Handel's Concerto, as arranged by von Wurtzler, is simply superb."

"And Shameyeva is a different type of musician?"

"Oh, yes, Shameyeva is completely unlike Moskvitina. The two compete all the time. At the contest in Leningrad Moskvitina came out first and Shameyeva second. In Tel Aviv Moskvitina was second and Shameyeva third. She is a talented harpist, a lyricist by nature. Moskvitina is all flame, sparks and fireworks —she breaks through to her audience immediately. Shameyeva captivates you with her wonderfully deep penetration into the artistic texture of the composition, into that cherished realm of emotion to which, of all the arts, music is closest. Shameyeva finished a graduate course and is now an assistant in my department at the conservatory."

"I understand that Tatyana Tauer is something of a phenomenon."

"Yes, Tauer is amazingly talented. At 23, she is taking a graduate course, after finishing the conservatory last year. She won out over difficult competition and is now on trial in the Leningrad Philharmonic Orchestra conducted by Mravinsky. A very promising harpist, a virtuoso of great temperament and drive, she is already playing the first harp. Her temperament sometimes gets the better of her. For Tatyana, playing under a conductor like Mravinsky should be an excellent discipline. I'm hoping that Leningrad weather will cool her down a little."

"And the youngest of the lot?"

"Irina Blokha. Though only 19, she is in her third year in my class. Irina graduated from a children's ten-year music school in Kharkov. She studied with Anna Gelrot, one of our oldest teachers. Irina is really special. Moskvitina, Shameyeva and Tauer are finished harpists; Blokha is not on the same level there. But she has remarkable gifts. She gets an exquisite tone, her technique is fine, and she is very musical. In short, she has everything! It is a pleasure to work with her—you don't have to say anything twice. She understands what you want at a glance. I haven't had a pupil like her for a long time."

"At what age can a child learn to play the harp?"

"We begin training children as early as eight or nine. And they play the big concert harp from the start. There is a harp class in almost every district seven-year music school and in every secondary music school. On finishing the seven-year school, the young harpist enters a college of music, and then goes on to the conservatory. Those who have no instruments of their own practice on the school harps. The conservatory lends the student an instrument for home practice if he needs one."

"I understand that there is a big demand for harps in our country. Do we make them?"

"We do. Their production started right before my eyes. In 1937, when I began to teach at a music college, two young fellows by the names of Sergei Maikov and Alexei Kaplyuk took lessons with me. They showed no special aptitude, but they were very nice boys. They asked me out to their place in the country once. That cottage was completely automated! All they did was press buttons, and everything appeared and disappeared as though by magic. They pressed a button, and a couch came floating out of a wall. They pressed another, and the whole garden was suddenly sprayed with water.

"I told them that they were misdirecting their talents, what they ought to be doing is repairing harps. The situation with harps was simply catastrophic. We did not manufacture them, either before the Revolution or afterward. There were many foreign harps, old French ones mostly and fewer American ones, but they were in the most deplorable condition. Nobody knew how to repair them. I gave the boys my old harp to tinker with. They took it apart and did a nice repair job, fixed a few others and then decided to try their hand at making a harp. That was no easy undertaking, let me tell you. The pedal mechanism (with seven pedals) alone, for semitones, is a very fancy affair. They had almost finished an instrument when the war broke out. The boys dropped everything, of course.

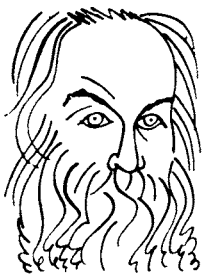
"Shortly before V-Day, Sergei Maikov came home badly battered. When he was ready to get to work again, we put our heads together. At long last, our first Russian harp was built. In my own dining room, too, which I had turned into a workshop for the duration. It was a red-letter day for all of us when, in Moscow's Beethoven Concert Hall, the harp was first put to the test. It was lined up with French, American and British instruments. The examining committee included composers Shostakovich and Khachaturyan, and conductors Pazovsky, Feiyer and Golovanov, among others. They concluded that our harp sounded fine, as good as any foreign product. And right then and there the decision was made to start the production of Soviet harps.

"A design office was opened at the Lunacharsky Plucking Instrument Factory in Leningrad. Just at that time Alexei Kaplyuk returned from the front—without even a scratch!—and joined in production. The factory now accounts for 600 harps, and is putting out its ninth series. It is because we are making our own instruments that we have so many harp students and that harp playing is making such headway. The American instruments are excellent, and we have quite a number of them, but they cost 5,500 dollars each. A Soviet harp is only 1,650 rubles.* Anybody who wants to study the harp seriously can buy an instrument now."

"And the last question. With what feelings are you going to America?"

"I have cordial relations with American harpists. I had a very warm reception during my last stay in the States. This will be my third visit and I shall be seeing old friends."

*One ruble equals $1.10.



Tribute to Walt Whitman on the 150th Anniversary of His Birth

IN HIS "Letter to the Russian," written in 1881 when he was well on in years, Walt Whitman addressed himself to readers across the ocean: ". . . As my dearest dream is for an internationality of poems and poets binding the lands of the earth closer than all treaties and diplomacy—as the purpose beneath the rest of my book is such hearty comradeship, for individuals to begin with, and for all nations of the world as a result—how happy I should be to get the hearing and emotional contact of the great Russian peoples."

From Turgenev to Lunacharsky

The poet's voice did not fall on deaf ears. Nine years before the "Letter to the Russian" was written, however, the famous writer Ivan Turgenev, who did so much to bring Russian and American men of letters together, had become interested in Walt Whitman. Turgenev had planned to translate that "amazing poet." He never finished the translations because of illness.

Some time ago the Paris archives of Turgenev sent us a facsimile copy of his draft translation into Russian of Walt Whitman's "Beat! Beat! Drums!" This draft, only just come to public notice, shows how carefully Turgenev was to preserve a style and form utterly different from the classical Russian poetry of his time.

In the late eighties Walt Whitman's work attracted the attention of Leo Tolstoy. The novelist's attitude to the author of *Leaves of Grass,* whom he called "an extremely original and bold poet," and to poetry as a whole was erratic and contradictory. All the same, when he read Whitman's poems, Tolstoy marked off the thoughts for which he felt a kinship. He liked the poem "I Dream'd in a Dream" for its theme of universal love and brotherhood. Three years before his death, according to his friend and physician Dr. Makovitsky, Tolstoy was reading passages from *Leaves of Grass* aloud and said about Whitman: "He is a most interesting poet, a philosophical poet who, notwithstanding a paralytic stroke retained his zest for life. In Russia he is known very little, and yet he towers above everybody."

It was then, at the turn of the century, that Whitman won a voice in the Russian language. The symbolist poet Konstantin Balmont published a volume of his translations from *Leaves of Grass* in 1905 and wrote of Whitman: "He is a poet of the present and the future. He is an important part of that future which is already being precipitated toward us and is shortly to be merged with the present." Balmont's appraisal, not free from the influence of symbolist esthetics, shows Whitman to be a poet as encompassing and infinite as the Universe. Abandoning meter and the conventional embellishments, he achieved, according to Balmont, an inner rhythm of his own that envelops his verse with "the startling melodies vibrant in the play of the waves or the rustle of the breeze."

Russian critics at the beginning of the century were unanimous in their appreciation of Walt Whitman as an innovator and titan of poetry. The impressionist critic Yuli Aikhenvald in the magazine *Russkaya Mysl (Russian Thought)* (1907) said of him: "Whitman, multigenerative, trods the earth, and from beneath his broad step rise luxuriant shoots of new life, the shoots of human grass."

The venerable Kornei Chukovsky, Whitman translator and scholar, has probably done more than anyone else to give the American poet his present large Russian audience. He first got to know Whitman, he tells us, at the turn of the century when he bought a copy of *Leaves of Grass* from a sailor in the port of Odessa for 25 kopecks, and soon was "head over heels engrossed in the book." "It was the book of a giant, far removed from our petty and hackneyed existence," he recalled afterward. "I was overwhelmed by the novelty of his perception of life; he gave everything around me a different look." This young Russian writer wanted to make Whitman the property of as many people as possible. In 1907 he published his first volume of translations. There have been 10 editions in the 60-odd years since. Chukovsky had his troubles with the Russian censorship. For translating the poem "Pioneers! O, Pioneers!" he was tried for sedition, and his volume of selections from Whitman published in 1911 was proscribed for destruction by the Court Chamber.

After the October Revolution a number of Whitman's poems —for example, "Europe"—in the revolutionary spirit of the times were dramatized as pageants. One such spectacle was staged with notable success at the new Palace of Proletarian Culture in Petrograd.

One of the first books published in the young Soviet Republic in 1918 was a volume of Whitman's poetry translated by Kornei Chukovsky. It was issued by the Parus Publishing House, headed by Maxim Gorky. The following year a second edition of this volume appeared with an introduction by Anatoli Lunacharsky, first People's Commissar of Education, who had a feeling for Whitman. Lunacharsky focused on those elements of the poetry which hailed the coming of a new epoch. "Man will awaken to the fulfillment of his joyful designation—to be

Excerpts From Kornei Chukovsky's "MY WHITMAN"

. . . If there is need to define Walt Whitman's basic, central quality, what distinguishes him from every other poet, I would say that his vitality as a writer lies in an astonishingly vivid and unfailing admiration for the boundlessness of the Universe, a feeling he carried with him throughout his life.

The essence of his personality is to be found therein, and there, too, is the source of all his inspiration and his great literary achievement.

In a way, this feeling is inherent in humanity at large. A human being plods along in his narrow and limited environment and suddenly realizes that our planet, the Earth, is but a speck in an eternally streaming Milky Way. He unexpectedly becomes aware that mankind's existence in the "cosmos" has been shrouded by billions of miles and millions of ages, and that rays reaching down from the constellation of Hercules must have swept through the mists of endless millenniums and the fierce cold of interstellar void for us to behold. This icy cold is seldom felt here. At moments, maybe, when we pay a chance visit to a planetarium or happen to find ourselves in the middle of a broad field, far from the madding crowd, in private with midnight fathomlessness.

This fleeting experience may stir one's emotions for an hour, or a single moment, and will then be forced into the shadowed recesses of the mind, gradually forgotten, buried under the more familiar strata of the daily round and the common task.

This emotion is new in the life of man. It is completely alien to the animals. It is a biological novelty which has not yet gotten more than a foothold in the human psyche.

Walt Whitman had that emotion always.

We know of no other poet who was as aware of the boundlessness of time and space. His vigorous, dynamic and tangible appreciation of this phenomenon infused all his thoughts. He visualized people and even the tiniest objects that came across his path against a background of cosmic horizons. He used the same starry panorama as a fitting environment for himself. . . .

This is the reason his poems so often give the impression of having been written by an astronomer's hand. . . .

The measure of his favorite dimensions lay among the millions and the myriads. He might be looking at you, but he would see the chain of your ancestors and descendants in which your humble personality was more than a transitory link. You might ask him what time it was and hear the word "Eternity." I have never met a man so keenly aware of the transient, swift flowing, onward speeding nature of things, or a man as sensitive to the eternally dynamic nature of cosmic space. . . .

* * *

. . . It is the accepted notion that Whitman was a poet of world democracy. If so, is there anything surprising in the fact that

'OET OF THE WORLD, OET OF TIME AND SPACE

BY BORIS GILENSON
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the conscious and immortal finisher of the Universe's architecture. Immortal—Man is immortal. The individual alone is mortal. One who does not realize this will not understand Whitman."

Whitman and Soviet Poetry

"A prophetic figure at the entrance to the new world," as Lunacharsky called him, Whitman exerted a marked influence on such young Soviet poets as Alexei Gastev and Sergei Obradovich, who in the early twenties made up the Kuznitsa (Forgeshop) group. Their "Whitmanism" evinced itself in their free verse forms, their "cosmic" and "planetary" phrasing, and their efforts to give the individual the dimensions of class and people.

In his young days Vladimir Mayakovsky, too, had his Whitman period. Kornei Chukovsky, a close friend, says that Mayakovsky liked to recite lines from Whitman, that he was fascinated by the bold and powerful hyperbole. He was interested in the way the American poet read his work aloud and the treatment he received from critics. "It was as though he measured his own life by Whitman's." Certain aspects of Whitman's style, his exaggerations and eccentricities, appealed to the young Mayakovsky. The influence of *Leaves of Grass* can be traced in Mayakovsky's early works, his poem "Man" and the tragic "Vladimir Mayakovsky." Nevertheless, the Soviet poet, as Chukovsky testifies, "was never an imitator of Whitman. . . . At the age of 22 Mayakovsky was already a poet in his own right, with his own individual theme and singular voice. In Whitman he saw a senior confrere and collaborator rather than a mentor."

Some of our contemporary poets, too, for example, Andrei Voznesensky and especially the Lithuanian poet Eduardas Miezelaitis, suggest the Whitman tradition. As the late Alexander Makarov, a Soviet critic, put it, the "Niagara of Miezelaitis' lyric verse" has the cosmic touch and philosophical breadth of the author of *Leaves of Grass*. Miezelaitis himself has these lines in one of his poems: "And there was born upon the earth Whitman, the beginning of future beginnings." The poem "Niagara Falls, or a Stroll with Walt Whitman" was one of the products of a visit he made to the United States in the early sixties. Its concluding lines, written in English, echo Whitman: "And mind the word of the modern, the word en masse." They bring to mind these lines from Whitman's poem "One's-Self I Sing:"

> One's-self I sing—a simple separate Person;
> Yet utter the word Democratic, the word *En-masse.*

Whitman and the Soviet Critics

Beginning with the first postrevolutionary editions, Whitman was published at regular intervals in the Soviet Union. Noteworthy is the 1935 edition of *Leaves of Grass* with a foreword by the well-known Soviet critic Dmitri Mirsky, who pointed out that the "passion of Whitman is the passion for unity, equality, human dignity and progress." Incidentally, this Soviet critic's article appeared in the United States in the *Walt Whitman Handbook* (1946) and *Walt Whitman Abroad* (1955) by Gay Wilson Allen. A Whitman volume was published even during the war years, in 1944.

The centennial of the publication of *Leaves of Grass* in 1955 was widely celebrated in the Soviet Union. Fiction Publishers issued a volume of Whitman's selected poems as well as a small volume of selections from *Leaves of Grass,* this last in a printing of 150,000 copies. New editions of Chukovsky's translations of Whitman's prose and poetry and the first Soviet monograph on Whitman by Maurice Mendelson, a leading Soviet scholar of American literature, were published. Articles and essays on Whitman appeared in nationally circulated newspapers and magazines like *Pravda, Izvestia, Literaturnaya Gazeta* and *Inostrannaya Literatura* and in numerous regional periodicals.

A current translation of Whitman runs to more than 320,000 copies in six of the languages spoken in the Soviet Union.

In the sixties Soviet publication of Whitman's poetry and critical studies of the poet were very considerably supplemented. In 1965 Professor Mendelson published his new monograph, *The Life and Work of Whitman,* the most comprehensive study of the American poet in Russian. Professor Mendelson's analysis is a work of rare scholarship and offers new insights into the poet's life and work in terms of our space-age ideals. The study takes into account the latest research of American scholars.

A year later Kornei Chukovsky's *My Whitman* appeared. It includes poems and prose in translation, a biographical sketch, a critical review and notes on the reaction of the Russian reader. This book, the fruit of almost 60 years of Whitman study, was written with profound affection for the American poet. It contains many vivid and colorful touches usually shunned by the literary historian but essential to give the reader a tangible, flesh-and-blood conception of what the poet was really like. Chukovsky's distinguished mastery as a writer has made his Whitman "our Whitman."

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the democratic tendencies in his poetry have so vast, so universal, so cosmic a scope?

He saw democracy as an endless chain of generations treading a thousand-year-old way. He accepted democracy in its planetary aspect:

> Lo! the darting bowling orb!
> Lo the brother orbs around! all the clustering suns and planets;
> All the dazzling days; all the mystic nights with dreams,
> Pioneers! O pioneers!
>
> These are of us, they are with us,
> All for primal needed work, while the followers there in embryo wait behind,
> We today's procession heading, we the route for travel clearing, . . .
>
> *"Pioneers! O pioneers"!*

Never did Whitman question the grandeur of ordinary people, the toilers and the creators; never did he lose his optimistic confidence that those people would ultimately establish a radiant democratic society and that this society would sooner or later spread to all countries and make mankind happy.

He never tired of appealing for a world community, a universal brotherhood of nations:

> Come, I will make the continent indissoluble;
> I will make the most splendid race the sun ever yet shone upon;
> I will make divine magnetic lands,
> With the love of comrades,
> With the lifelong love of comrades.
> *"A Song"*

His dedication to selfless democratic comradeship was not limited by national boundaries. . . . He included in the orbit of his "magnetic companionship" people living across oceans and seas: Russians, Japanese, Germans. . . .

A short while ago some of his rough drafts were found. These papers contained a page, every single line of which was about Russia, and a few Russian words scribbled by his hand. . . .

Walt Whitman saw that the aim of his poems, their mission and basic task in propagating the idea of international brotherhood, could only be achieved if people learned to love one another in a divine, tender, and passionate way. Without this indispensable condition, he said, the finest democratic society would fail.

* * *

. . . Bringing home to every person the idea that he was no less divine, great and powerful than *any other person,* Whitman, with tremendous poetical force, acclaimed the spiritual dignity of the human personality and of Man. . . .

. . . This magnificent theme can be traced throughout his writings. From it he drew his inspiration. . . .

The new content he introduced into world poetry required new forms. Walt Whitman was a daring literary innovator. . . .

. . . I remember my first acquaintance with his poems in my early youth. His short genre sketches, drawn from nature and perceived against the background of cosmic heights and millions of ages, fascinated and overwhelmed me by their freshness. I could not free myself of their spell for a long time. The American bard used his favorite method of chaotically piling up events and facts and illuminating them with broad philosophical ideas—forever present in his poems—with particular success in the thirty-third fragment of his "Song of Myself." This long "catalogue" of unexpected, cleverly devised images was tinctured with meditations on the illusory nature of Space and Time. The images were most vivid illustrations to the radiant quality of his talent. There was something of sheer magic or witchery about them. They seemed to have been written in a trance or ecstasy. At the same time, I could not help sensing an ideal, perfect order in their seemingly chaotic conglomeration, an order suggested by the unerring instinct of a great master.

Try, as an experiment, to shuffle the images in the thirty-third fragment and alter their places. The entire structure will immediately collapse. Because, even though the author referred to these pages as "dotage" ("I dote on myself"), the entire composition complies with the strictest canons of versification.

THIS IS THE THIRD TIME since the founding of the Soviet Union that the front pages of our newspapers have carried the headline "Economic Reform." The first such announcement was in 1921, when the country was reconstructing an economy devastated by a world war and a civil war. Lenin had initiated the New Economic Policy (NEP) to rebuild the relations between town and country on the basis of free trade and to reorganize state-owned industry. "Trust," "Syndicate" and other such designations appeared on signboards. Trusts were combinations of several enterprises engaged in the same production process. The trusts formed syndicates on a joint-stock arrangement, which purchased their supplies and marketed their produce. The profit made by the syndicate was distributed among the shareholding trusts, which also covered any losses.

Lenin's Idea

The principle of complete economic accounting was first applied in 1921. Trusts and syndicates were taken off state supply and budget subsidies. They now had to find customers for their goods and suppliers of raw and other materials on the free market. Moreover, some trusts were authorized to look for not only domestic but foreign customers.

"Communists must learn to trade!" was the idea that motivated this first economic reform. Economists and newspapermen in the West were certain that "Russia has started getting back to capitalism!" They were altogether wrong, of course.

The 1921-1923 reform served its purpose. The war-ravaged economy was quickly rehabilitated. Trading was brisk and there was even a certain abundance of foodstuffs and consumer goods. In 1929 the country launched its First Five-Year Plan for industrialization and with it the second economic reform. Trusts and syndicates were abolished. The enterprises themselves became the basic economic link, while People's Commissariats (ministries), top administrative agencies and supply, research, design and other agencies existed independently. They were all financed out of the state budget and responsible only to the state.

Economic accounting was limited to current expenditures for the production and sale of goods. The state gave the plants and factories their equipment, machines and, of course, their premises free of charge. Enterprises took no part in financing the training of specialists and paid nothing for the technical research they applied. On the other hand, the state could at any time appropriate any portion of the plant profits, redistribute its assets and change its production assignment. Economic accounting among the production units themselves was also discontinued. Since the enterprises had no significant measure of independence either from other production units or from the state, their efficiency could not be measured objectively, through economic indicators. Profits did not serve as a criterion for measuring the contribution of an enterprise to the national wealth.

Foreign economists said of the second economic reform that it violated basic managerial principles. They predicted failure for the five-year plans and the collapse of the Soviet economy. But nothing of the sort happened. In the course of its three prewar five-year plans (the last one was not even completed), the Soviet Union created a heavy industry and a defense industry that had taken the major capitalist countries almost a century to build. The essence of the 1929-1932 reform was a stepped-up rate of industrial development.

The elimination of complete economic accounting in the thirties was not due to incompetence or to someone's evil design. It was a deliberate measure. Even back in the thirties the departure from economic accounting principles was considered a temporary phenomenon. In 1936 Sergo Orjonikidze, who headed heavy industry, wrote an article for *Pravda* proposing that the authority of enterprises be extended, that they be required to operate by standard economic accounting principles, and that they be allowed more initiative. He was anticipating some of the fundamental principles behind the present, the third, economic reform.

New Stage

This new reform began in 1966, when the first 40 enterprises changed over to a new system of economic management. By 1967 the number had increased to over 700. And in 1968 the transition of the three key sectors of the national economy—industry, building construction and transport—to the new managerial system was complete. This added up to several tens of thousands of enterprises. By the end of the present five-year-plan period (1970) all state farms, trade and public food-catering enterprises, municipal services and research and design institutions will be operating by the new managerial principles. The third economic reform will be in effect throughout the country.

The present reform was due to the expanding scale of production and to changes in the production structure, as well as to the new demands which the scientific and technological revolution makes upon economic management methods. Commodity-money relations are now used to expedite scientific and technological progress. The connection between the first and third reforms is clear. What we have here is the further development of the managerial principles applied by Lenin, principles that had undergone practical testing as early as the twenties.

ECONOMIC REFORM: PROGRESS REPORT

By Leonid S. Blyakhman

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Foreign observers are sometimes at a loss to understand why the present economic reform in the USSR differs in many respects from the economic reforms now being carried through in other socialist countries, though they all have the same content and the same goal. The difference is explained by the objective differences in managerial conditions and the differences in the national economies of the several countries.

In the first place, the branch structure of industry is not the same. In the Soviet Union radio engineering, electronics, aircraft building, shipbuilding and heavy machine building, distinguished for complex technical preparation of production, play the leading role. The interval between the beginning of research and the production of the first machine or instrument can be months, sometimes years. Most of the goods produced by these industries are not intended for the general market but are manufactured to fill orders placed by the state for the country's defense needs or its scientific institutions. For the enterprises that manufacture these goods, changes in market conditions and current investigations of demand have no marked significance. Long-term plans that foresee developments in their various branches of science and technology are much more important to them. These factors would, of course, affect the nature of the reform in the Soviet Union.

Our country covers a vast territory. The geographic factor alone has an immediate effect on the economic management mechanism. For instance, the cost of a kilowatt-hour of electricity in one part of our immense country may turn out to be 100 times higher than in another, the cost of a ton of oil 30 times higher, of a ton of coal or cement 10 times higher. If the production cost of a factory in Khabarovsk (the Soviet Far East) is double that of a plant in Leningrad, this obviously does not mean that the personnel of the latter plant should be rewarded and that of the former penalized. Variations in profitability may be even less reason for closing down an enterprise. The several thousand miles' transportation cost to ship an item to a distant area may be much higher than the cost of produc-

ing it on the spot. The distribution of the production program among hundreds of plants scattered over the great expanses of our country is decisive for us. These problems worry the economic planners of small countries—the socialist countries of Eastern Europe—much less than they do us.

In our country the identical item can be manufactured by dozens and even hundreds of enterprises from Kaliningrad (the westernmost part of the USSR) to Khabarovsk. How are we to coordinate the operation of, for instance, the 500 enterprises required to build a modern ship, or of the 300 plants required to manufacture an automobile? That is why it is so much more difficult to put through economic reforms in our country than in the other socialist countries of Europe.

Further. Soviet enterprises manufacture the bulk of their products for the home market. Let us assume that the construction of a new refrigerator manufacturing plant is being planned. To make using up-to-date production processes worthwhile, the enterprise must turn out no less than three or four million refrigerators a year. No European socialist country can build such a plant without looking into the possibilities of selling its refrigerators on the foreign, including the capitalist, market. But our home market can take care of the output of several such plants without any difficulty.

All of which leads us to the conclusion that socialist countries must study each other's experience but must not mechanically copy another country's practice. If something works well in small countries, we have no guarantee that it will work for us. At the same time, the failure of one or another experiment elsewhere is no reason for us to reject it.

Our present economic reform stirred up the same kind of talk abroad as NEP once did, that we are "returning to capitalism," especially since we have allegedly resurrected the profit motive. But since we have no privately owned means of production, the only similarity between our profit and capitalist profit is the word itself. This is a new wine in the old wineskin. In a socialist economy profit does not come from profiteering on prices, exploiting dependent countries, cutting pay rates, and the like. Profit in our country plays a fundamentally different role; it becomes the property of society and not of private individuals. No one in our country can use his personal income, no matter how large, as capital, *i.e.,* as a source for getting another, and this time unearned, income. There is nothing parasitic in our profits.

Initial Results

Among the first real results of the reform is a sharp reduction in the number of centrally planned indicators. There used to be 40 of them; now there are nine. The plants and factories themselves estimate how many workers they need, what their average wages will be, and the cost of production. One idea behind the reform is that enterprises have the authority, within the limits of their former payroll, to raise wages by reducing the number of workers. And here is the result: In 1967 the productivity of labor increased by seven per cent, while in the years from 1961 through 1965 it had been increasing at an annual rate of no more than five per cent. In the period from 1959 through 1965 the employment of new labor power accounted for more than a third of the total production increment in industry, whereas in the years from 1966 to 1968 only a fifth of the increment was due to new labor power. Expanded production now comes more and more from higher efficiency rather than from a greater number of workers.

And here is another result of the reform: The criteria for estimating the efficiency of enterprises have changed. Previously only overfulfillment of the plan assignment was considered a good showing. This criterion had its merits also; it promoted plan discipline. Today we use three efficiency criteria. One of them is the dynamics of economic activity, *i.e.,* better production showings than last year. For the first time in their business careers, executives want larger plans, not smaller ones. Another new criterion is level of economic activity, the comparison of the actual results with a standard that is uniform for all and stable for a number of years. This was a first step in stimulating our enterprises to compete. But factories within the same industry have proved to differ so markedly in their operation that no uniform standards could be fixed. However, that problem will be solved in the near future. The overfulfillment of the plan is the third and least ponderable criterion of efficiency.

As a result of these new criteria for judging their efficiency enterprises have stepped up the rate of growth of profits and the marketing of goods. The annual increment in profit under the new managerial conditions comes to 20-25 per cent, more than double the average growth rate in the period from 1962 through 1965.

The third product of the reform is that the nature of the stimuli has changed. Formerly the tail wind of bonuses used to push the enterprise toward three reference points: gross output, commodity output and cutting production costs. However, these points often made the enterprise swerve off the fairway. They paid very little attention to the extent to which the goods met consumer needs. There was a time when this wasn't so serious because the scarcity of goods automatically meant that everything would be sold. But now things are entirely different in our country, and we are thankful that they are.

Neither was there any account kept of the assets plants and factories received from the state budget. Enterprises competed with each other to get as much as possible from the state. The more machines they had, the more goods they could manufacture and the lower their cost of production would be. Managing executives were always maneuvering between production cost and quality. Economic considerations called for cutting costs at any price, while conscience appealed for a better quality of goods, even if it involved additional outlays. The new criteria for stimuli—marketing, profitability and profit—have done away with many of these contradictions. Every surplus ruble received from the state leads to lower profitability. The Procrustean bed of cost does not interfere with the enterprise's improving the quality of its goods. And the result? In 1967 the drop in output per ruble of fixed assets, which had for a decade and a half been undermining the foundation of our economy, was stopped. The sale of goods started growing faster than output.

The reform brought another important advantage. A portion of the wage fund is now paid out of the profits made by the enterprise itself. In 1967 this part topped the billion-ruble mark. The result is that the rate of the annual increase of earnings has doubled, from three per cent a year to six per cent a year.

Pandora's Box

In the first two years of the reform we have been able to solve many important problems. But new ones keep cropping up. Professor Yevsei G. Liberman, the prominent economics expert, suggests this grouping: those problems that derive from the unfinished character of the reform itself; those that derive from the conservative management and thinking of some executives, planners and financiers; and those that derive from the shortcomings of the reform mechanism per se. This classification is probably the most convenient for analysis.

In 1967 funds for production development, for social and cultural measures and for housing construction which, the reform says, come from the profits of an enterprise and belong to that enterprise, added up to about a billion rubles. The enterprise may spend these funds to purchase equipment and build new shops and housing. However, less than half these funds were actually used. The reason was that there were no contractors to do the job. Builders still operate along old lines. For them a new contract means nothing but additional worries. Supply agencies also operate much as they used to: A customer's solvency does not interest them. The only thing important to them is whether the customer was able to get the required materials allocated to him. The research and design agencies, which were not held financially responsible for low-quality projects and recommendations until now, also used to put spokes in the wheels of enterprises that had changed over to the new managerial system. All this affected efficiency. These problems will be solved when all sectors of the national economy have changed over to the new system.

Repatterning the style and mentality of some executives and breaking deeply rooted habits will take much more time than did the alteration of bonus indicators or account forms.

Some elements of the managerial mechanism programmed in the course of the reform have not stood the test of time either. Some things that looked smooth on paper have proved much less so in practice. One concerns the relations between enterprises and higher-level economic managing bodies. Till now the top administrative agencies and ministries enjoyed the right of command only but had no financial resources of their own and were responsible to no one for the economic results of their work. Today we already have about a dozen top administrative agencies operating on an economic-accounting basis, and now they are not just distant and formidable commanders to their subordinated enterprises, but financial headquarters with their own funds. It will obviously be necessary to get all top administrative agencies and then the ministries operating by economic-accounting principles. It is not orders, but a system of scientifically substantiated economic norms that must serve as their main instrument.

No less acute are the problems involved in relations among the enterprises. The supplying of materials and equipment is still our economy's vulnerable spot. How can this chronic weakness be treated? We have not found an adequate answer yet.

No radical changes have taken place in setting output norms and pay rates. It is only once a year, when the workers get their thirteenth month's pay, that most of them realize the material advantages of the new system. The absence of precise methods for appraising the contribution every shop, section, team and individual worker makes to the factory's general profits is to blame for that. This is a problem of cost accounting within the plant.

Another important experiment was carried out in 1968 to modernize a most vulnerable component of the new economic mechanism—the new principle of distributing profits between the enterprise and the state. The collective of the enterprise retains the entire profit minus the payments into the state budget stipulated by law.

All the problems of the reform are closely interconnected. To introduce a new system of profit distribution, we need economic norms with a long term of validity. Let the personnel know that today, tomorrow and a year from now they will have at their disposal, say, a third of the profits regardless of their size—be it one million rubles or five million. But this principle cannot be applied to small enterprises, and we still have a great number of those. Their profits vary sharply from year to year; the purely superficial reason for that—a change in their output assortment or a change in geographical market relations—affects the results of the staff's work to a much greater extent than do the efforts of the staff itself. The only way out is to amalgamate small factories.

The reform has given rise to many problems. Our economists still have to write the fundamental work treating all these problems in their unity and interconnection.

Courtesy of the magazine Neva

LENIN'S UNIQUE PHOTOGRAPH

By Valentin Chikin



Lenin's study in the Smolny (Leningrad)

THIS IS the first photograph of Lenin after the October Socialist Revolution. It was taken in January 1918. How fine it would be to have a picture of Lenin in those decisive days of October 24 and 25, 1917, but none exists. They say that at the Second Congress of Soviets, which met on October 25 and 26, Vladimir Lenin, chairman of the people's government which had just been formed, refused to be photographed. When the only Petrograd reporter admitted to the congress tried to take a snapshot, Lenin tactfully explained his refusal.

"Not just now, comrade. When I grow a beard and look like myself again, then you'll be welcome."

The traces of the disguise soon disappeared. Lenin "looked like himself" again, but there were no meetings with photographers, no portraits on display anywhere. Few people knew the head of the new government by sight, even in the capital. "In the evening," recalls Nadezhda Krupskaya, Lenin's wife, "we would leave the Smolny (the building in which the headquarters of the Revolution and Lenin's office were situated), and nobody ever recognized him." Finally, 12 weeks after the Winter Palace was stormed, the first pictures of Lenin were taken. By decision of the Central Committee, a volume of his selected works was to be published, and a photograph was needed for the book. Lenin had to agree to pose.

And so, on the last day of January 1918, Moisei Nappelbaum, a professional photographer, appeared in the Smolny with his "portable camera." As he subsequently confessed, he had imagined the leader of the revolutionaries as a graceful hero of the French type, "wearing a long black frock coat, with a red sash around his waist and a revolver in a holster." But he found a peaceful, intellectual-looking man, friendly and modest, only very, very busy.

Lenin was patient. He understood that someone not involved in politics could not imagine the whirlpool of affairs that demanded his attention. You could say that the government was in continuous session. He had chaired a meeting of the Council of People's Commissars yesterday, and would again today, and tomorrow, and the day after tomorrow. Every session adopted the most weighty decrees. Either you went over everything that was proposed with the utmost care, or you sat down and wrote a draft yourself.

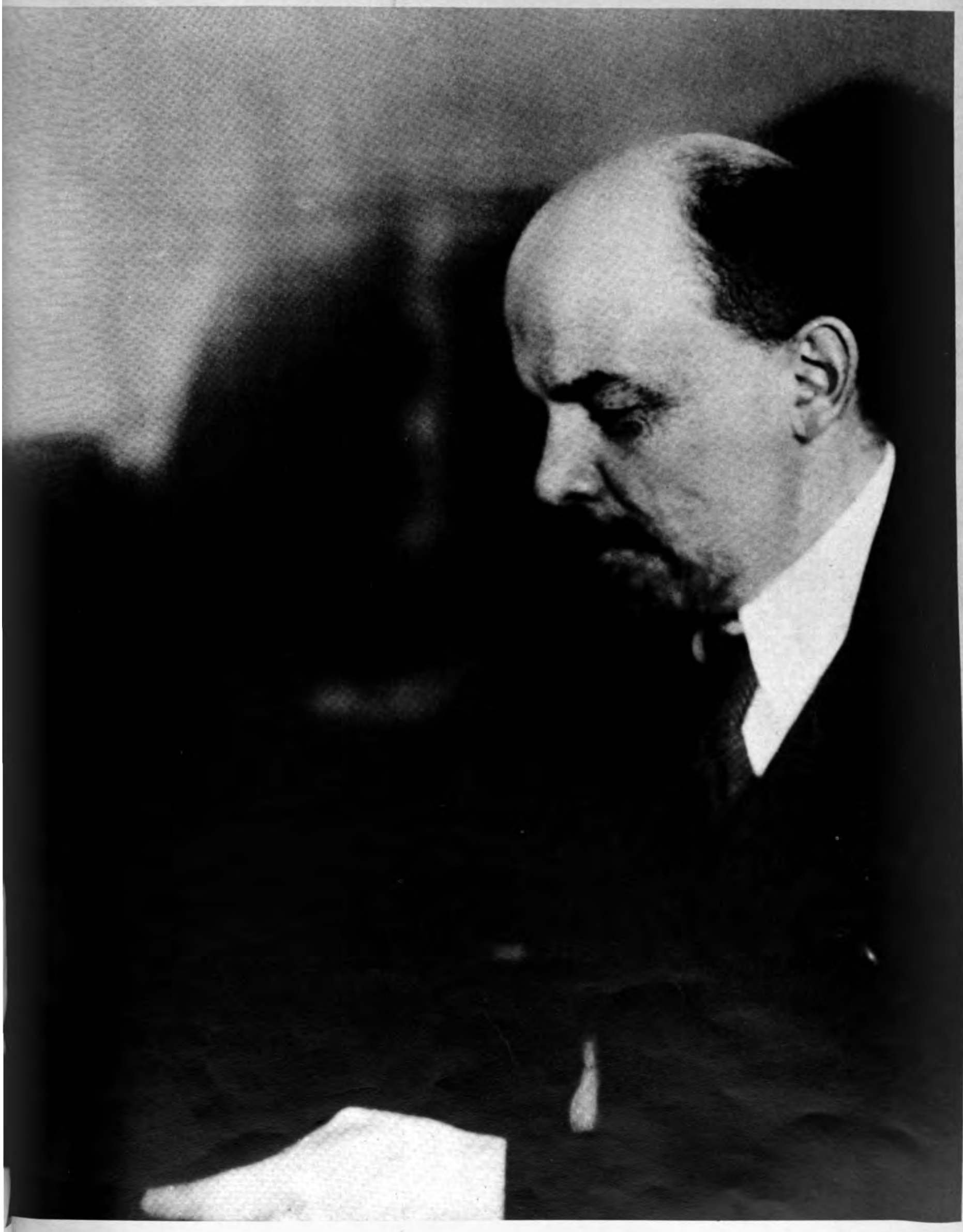
And the stream of meetings with people, sometimes the most unexpected! One wanted a sackful of political literature in exchange for grain; another, an official stamp bearing a coat of arms for a regional Soviet, when the Republic itself had no coat of arms yet. Before the day ended, he would have to take the floor twice more at the Congress of Soviets. To say nothing of the papers which came in torrents and clamored for attention.

When there was a pause in the photographer's preparations, Lenin sat down at his desk and became absorbed in his work. In a moment the "portable camera" flashed. And so we now have a photograph of Lenin engrossed in his work. In his hands he holds a letter, or a page of verbatim report, or an important draft of a law. The question is clear to him. With a slight smile of impatience, he waits for his "interlocutor" to speak.



Peasants' representatives visiting Vladimir I. Lenin
From drawing by Vladimir Serov





(Continued from page 31)

humor. Vladimir, for instance, teased his wife about her detailed and dramatized descriptions of the most commonplace things and incidents. This sentence is from one of his letters: "Nadezhda has already constructed a long tale about our life, and there remains absolutely nothing for me to add."

On her part, Nadezhda told how hard it was to wake Vladimir at half past seven or eight in the morning, how he would mumble something, pull the blanket over his head and fall asleep again, and how in his sleep he would talk about what he was working on at the time. Nadezhda also often joked about her husband's limitations as a hunter and fisherman, and how impractical he was in everyday matters.

The letters from Shushenskoye contain details that throw light on the relations between the newlyweds. On January 10, 1899, Nadezhda wrote to her mother-in-law:

> Anna's letter of December 24 came with yours. I'm not writing her separately because I should have to repeat what is in this letter. There is only one thing for her especially. She is indignant that I give my letters to Vladimir "for editing." It is just that I often write about our Shushenskoye life in a jocular tone, and since Vladimir is mentioned in them a lot, I wouldn't want to send such letters without letting him read them first.

In some of his letters he did not pass on regards to his family from his wife. Nadezhda wrote to her mother-in-law on June 14, 1898: "Passing on regards through Vladimir is hopeless; he feels this should be taken for granted." From another of her letters we learn that the young couple had the tactful habit of not opening letters separately that were addressed to both of them.

Most of the time Lenin wrote to his family himself, but there were occasions when he just added a few lines to a letter written by Nadezhda. All told, judging by the letters we have, there were five such cases during their life together in Shushenskoye. Another detail worth noting is that although they wrote to Lenin's family separately, they usually wrote the same day.

Lenin was very fond of his mother-in-law Yelizaveta Krupskaya. This 56-year-old woman selflessly gave up her familiar way of life and followed her daughter to the Siberian hinterland to make life easier for the young couple. At first the change and the climate upset her. She was often ill and in low spirits. But she gradually became acclimatized, and in Nadezhda's letters to her husband's family we find lines such as these: "Mother is now quite used to the place, and in her letters she now describes the lovely Shushenskoye autumn." This change of mood was due, in great part, to her son-in-law, who treated her with great consideration and respect. In his letters he always passed on regards from Yelizaveta, reported how she felt, described walks the three of them had taken, and mentioned things she had said and advice she had given. From Lenin's letters we learn that besides running the household for the young couple, Yelizaveta gave them financial assistance.

In the letters to Lenin's family there is no mention of any resentment, disagreement or misunderstanding between son-in-law and mother-in-law. Yelizaveta apparently had no reason or occasion to be displeased with her son-in-law, except in jest, of course, as in this letter to Anna, that Nadezhda wrote on November 22, 1898:

> Mama is displeased with Vladimir. A few days ago he quite honestly mistook a gray hen for a goose. He ate the hen and then praised it, saying it was a good goose because it was not fatty.

In 1897 the well-known English economists Beatrice and Sidney Webb published their *Industrial Democracy,* a book which became very popular and was translated into many languages. In St. Petersburg Nadezhda had been able to get a contract for Lenin to translate the first volume of this book into Russian. On March 8, 1898, he wrote to Anna:

> I want to ask you to get me some English language textbooks. I asked for a translation, and I got a thick book by the Webbs. I'm greatly worried about making mistakes.

We can see from this letter how painstakingly he prepared for the translation and how much he valued the job, although he was to get only 20 rubles for each 16 printed pages. The terms of the contract with the publisher were quite stiff: A clean manuscript of the translation had to be completed by the middle of August 1898.

Before Nadezhda arrived in Shushenskoye, the translation went ahead rather slowly. With her help the work proceeded more rapidly. Later Nadezhda recalled: "Vladimir and I devoted the mornings to translating the Webbs. . . ."

Thanks to their joint efforts, he was able to report to his mother on June 14, 1898, that the translation was nearing completion.

That the work on the Webbs' book was finished in July 1898 is evident from this extract from a letter he wrote to Anna on July 15:

> Nadezhda and I are now making a clean copy of the Webbs. Under the contract we must mail it by the beginning of August. I'm fed up with this copying (about 1,000 handwritten pages for the two of us). But translating it was interesting because it is a very worthwhile book indeed.

Worried that the censors might not pass the book, he wrote to his elder sister:

> I have another favor to ask you. If you happen to be in St. Petersburg or if you see an author, make inquiries, please, about the Webbs' book. I want to know why they haven't paid me for it yet, although according to Nadezhda they are supposed to pay whether the book comes out or not.

In the spring of 1899 he was offered the job of editing the second volume of the Webbs' book. The translation of this volume had been done by someone else, and much of it had to be retranslated. Lenin and Nadezhda worked together on the second volume, too.

She also helped him with his book *The Development of Capitalism in Russia* and played a large part in the publication of his first legally published work, *Economic Studies and Articles.* In his letters to his family Lenin always talked of "Nadezhda and I" when he made reference to the various setbacks and gloomy conjectures connected with its publication.

To help her husband in every way she could, Nadezhda handled part of his business correspondence. In Lenin's letters we find mention of theoretical writings which they read together and discusssed. On September 1, 1899, he wrote to his mother:

> Nadezhda and I started reading Bernstein's book at once. We have now read more than half, and its contents amaze us more and more.

In Siberia Nadezhda wrote her first political pamphlet, "The Working Woman," in which she described, in popular language, the hard life the Russian woman led at work, in the family circle and to bring up her children. She showed that women could not win their independence unless they participated in the political struggle. Lenin thought highly of his wife's literary effort and helped to get it published in 1901.

Alone in Pskov

His term of exile ended on January 29, 1900. Long before this he and Nadezhda had decided to settle in Pskov. This small provincial town not far from St. Petersburg and the western frontier seemed best suited for his plan to found a revolutionary newspaper.

In the autumn of 1899 they began to make arrangements to move. On October 17 of that year Nadezhda wrote to her mother-in-law:

> Only three months and 13 days before we leave. I have already applied to the Police Department for permission to go to Pskov. Mother intends to put in an application for herself, too.

They were refused permission, and Nadezhda had to live out the term of her exile in Ufa. After accompanying her to Ufa and helping her get settled there, Lenin visited his family in Moscow and then went on to Pskov.

He arrived there on February 26, 1900. We have none of the earliest letters to his family. From one he wrote to his mother on March 15, it is evident that he had not given up the idea of getting permission for Nadezhda to join him in Pskov:

> I submitted an application about Nadezhda on the tenth and will soon be looking forward to an answer. If (contrary to all expectations) the answer is unfavorable, I think I shall ask you (if your health permits) to go there and make a request in person.

By the end of March 1900 it was clear that permission had not been granted, and it was then, evidently, that the idea of Lenin's mother going to Pskov arose. This conclusion can be drawn from this letter Nadezhda wrote to her sister-in-law Maria on March 30, 1900:

> I sent you a letter the day before yesterday and received one from you yesterday. I'm very glad your mother may visit Vladimir because it looks as though I will not be able to leave here soon. Yes, Vladimir has lost quite a bit of weight lately, but he was fine until then. I think insomnia is more to blame for it than the catarrh. Toward the end he did not get enough sleep. He was excited before his departure, and, besides, it was so bitterly cold that he stopped taking walks altogether. As soon as we all got out of Shushenskoye, his mood improved and he began to eat and sleep like a human being. I think he'll be able to stop the catarrh with the waters, which helped him so much last time. In general, Vladimir looks after his health. He writes that he is being fed well. Still, it's a pity that he has to lead a bachelor's life. . . .

In the second half of March and the beginning of April 1900 Lenin was very busy with organizational matters. At great effort he arranged under the very noses of the local police the "Pskov conference" that discussed the founding of the newspaper *Iskra (The Spark)* and the magazine *Zarya (Dawn).* Before the conference he had to draft editorial statements for the future publications. At the conference itself he had to battle those opposed to publishing consistently Marxist periodicals. There were so many things to do that he literally "spun like a top," as he put it; so much so that he was late this time in wishing his mother and sister many happy returns on April 1, their name day. Neither the numerous arrangements that had to be made nor his fatigue nor the danger depressed Vladimir. But he was very much worried about Nadezhda's letters.

On April 6, 1900, he wrote to his mother:

> Nadezhda is most likely confined to her bed. The doctor found (as she wrote a week ago), that her illness . . . requires persistent treatment, that she should stay in bed for from two to six weeks. (I have sent her some more money because the treatment will involve considerable expense. . . .) This means she could not come here to me even if permission were given (there is no reply yet and I have practically stopped expecting any). I plan to pay her a visit in the spring, in about a month and a half, or perhaps even earlier.

From those last lines we can assume that by the beginning of April he had abandoned his plan of getting permission for her to move from Ufa to Pskov and planned to go to her. If this assumption is correct, it can only be explained by the circumstance that after the "Pskov conference" it became urgent that Lenin go to Germany, where the Russian Marxist newspaper *Iskra* was to be published. This being the case, there was no sense in getting his wife transferred to Pskov. On April 20, 1900, he submitted the following petition to the Director of the Police Department:

To His Excellency,
Director of the Police Department

From Vladimir Ilyich Ulyanov,
gentleman by birth, residing in
Chernov's house on Arkhangelskaya
Street in the town of Pskov

Petition

By decision of the Minister of Internal Affairs, I am forbidden to reside in the Ufa Gubernlya, among others. At the present time my wife, Nadezhda Ulyanova, who is under surveillance, is residing in Ufa, and my request (in an application of March 10 of this year) for her transfer to the town of Pskov was refused. According to the latest news I have received from my wife, she is ill and is being treated by a local specialist, Dr. Fedotov; I indicate the doctor's name in the event of verification of my application, and if such verification is found necessary, I most humbly beg that it be made by telegraph. My wife's illness demands persistent treatment for a period, the doctors say, of not less than six weeks, and since my wife's mother, who is now by her side, will soon have to leave the town of Ufa, my wife will be left all alone, which might have an extremely detrimental effect on the course of treatment.

In view of the above, I have the honor to most humbly request permission to reside in the town of Ufa for a month and a half.

Vladimir Ulyanov, gentleman by birth

April 20, 1900, Town of Pskov

At the same time that he sent off this petition, Lenin started the formalities required to obtain a passport for travel abroad.

Meanwhile Nadezhda's health began to improve. Lenin kept his relatives informed of her progress. On May 5, 1900, he went to the office of the Governor of Pskov to inquire about his petition and was much surprised to learn that he had not only received permission to go abroad but that he could get a passport then and there. However, he was forbidden to go to Ufa to see his wife. He obviously had not expected anything like this. A letter he wrote on May 5, begun in the morning and finished several hours later, has been preserved. The first part of the letter was written just after he learned that he had received permission to travel abroad. This part of the letter is cheerful, happy and energetic. It said that he felt fine and intended to visit Nadezhda but did not know whether he would stay in Ufa a month and a half or less, and that in two hours he would receive his passport for foreign travel.

One of the reasons for Lenin's happy mood, reflected in this letter, was undoubtedly the fact that his prolonged efforts to found *Iskra* were nearing success.

The last lines of the letter, written several hours later, have an entirely different ring:

> I have just gotten my passport from the Governor's office and inquired about my petition to make a trip to Ufa. It turns out that I have been refused!!! This is something I did not expect at all, and now I am completely at a loss what to do!

As soon as Lenin's mother received this letter, she held a family council to decide how they could help. They agreed that he should make a trip from Pskov to St. Petersburg, or, if he could not, then his mother would go to the Police Department and ask permission for her son to visit his sick wife in Ufa. All this was explained in an urgent letter to Pskov.

His family evidently forgot that Lenin, who was under surveillance, was strictly forbidden to go to St. Petersburg. On May 10 he wrote his mother:

> . . . On the whole I agree with what you and Anna advise . . . and this is what I plan to do, only I shall have to give up the idea of going to St. Petersburg myself. I want to ask you to go—by Thursday the eighteenth, if you can manage it, and if you can't, then by Thursday the twenty-fifth, depending on when we see each other.

On May 10 he wrote that he would not go to St. Petersburg but would travel straight to Moscow. Yet on the night of May 19 he boarded train No. 18 in Pskov for St. Petersburg. Whether this clandestine trip to the capital was undertaken suddenly or whether he knew about it on May 10 but did not tell his relatives for reasons of secrecy is something we cannot say. However, the trip to St. Petersburg turned out to be very unlucky. The secret police were keeping a close watch. They followed him on May 20, and the morning of May 21 he was arrested. It was not until June 1, 1900, that he got to Moscow to see his relatives and on June 7 that he left with them for Ufa.

What is not clear is when permission was obtained for Lenin to make the trip to visit his wife. The two relevant documents preserved in the Police Department complicate the question rather than shed light on it.

In July 1900 he said good-by to Nadezhda in Ufa and to his relatives in Podolsk, near Moscow, and went abroad.

Abroad

His first period of life abroad as a political exile in Germany, Switzerland and England lasted from the summer of 1900 to November 1905. He had a particularly hard time in the first few months, when he had to live by himself. Nadezhda's term of exile did not end until March 11, 1901. Two documents that give an idea of his mood in the early months of his life abroad have been preserved. The first is a long businesslike letter to Nadezhda written in August 1900. Here is an excerpt:

> I have been intending to write you about my affairs for a long time, but various circumstances have kept interfering. My life is in quite a bit of a turmoil, too much of it, in fact, and this (N.B.)[6] despite really extraordinary measures to prevent turmoil. I live practically in solitude, actually, but there is turmoil nevertheless! I suppose this is inevitable and inescapable in any new situation, and it would be sinful to complain, especially since I am far from being as nervous as our delightful bookseller,[7] who falls into black melancholy and instant prostration under the influence of this turmoil. Along with the turmoil there are many good things, too! Well, now I'll tell you about affairs in the League of Russian Social-Democrats Abroad. I'll tell you about them on the basis of fact and story.

The letter goes on to give a detailed account of the reasons for the split in April 1900 between the two organizations of Russian revolutionaries in exile abroad: the Emancipation of Labor group and the League of Russian Social-Democrats Abroad.

We have another Lenin manuscript, written shortly thereafter, with the title "How *The Spark* Was Nearly Extinguished." It has now been established that this was not the manuscript of an article but the rough draft of a letter intended for Nadezhda and never sent. Even a cursory glance at the manuscript shows that it was written in several sittings. It describes the emotional drama he lived through in the closing days of the summer of 1900. To understand the depth of this drama and the unusual nature of the letter, we must know something of the events that preceded it.

At the conference held in Pskov in the spring of 1900 a final decision had been taken to publish a newspaper called *Iskra* and a magazine called *Zarya*. These periodicals were to be printed abroad, in Germany, which had the necessary facilities and people, and then smuggled into Russia.

At the end of July 1900, after having completed all the arrangements in Russia for founding *Iskra* and after visiting his family, Lenin went abroad. It was then that this event took place for which he could find no other words than "a real drama."

When he drafted a plan for publishing *Iskra* and *Zarya*, he thought members of the first Russian Marxist group, the Emancipation of Labor group, headed by Georgi V. Plekhanov, its founder and leader, would contribute to these publications. Agreement in principle had been reached at the beginning of 1900 that members of the Emancipation of Labor group, including Plekhanov himself, would contribute. All that remained were the final negotiations.

Lenin left for Switzerland, where the leaders of the Emancipation of Labor group were then living. The official talks began on August 24, 1900, but before then he had several meetings with Plekhanov which left him with a painful impression. Plekhanov turned out to be capricious and mistrustful and positive that he alone was right. This came as an unpleasant surprise to Lenin, but out of respect for Plekhanov he made an effort to be careful and to avoid "sore" subjects. An inauspicious beginning, but Lenin still hoped that things would arrange themselves somehow in subsequent conversations.

The more frequently they met, however, the more Plekhanov showed his intolerance, arrogance, unwillingness to listen to the arguments of others and, particularly, his insincerity.

The conference itself took place at Bellerive and Corsier, near Geneva, and lasted several days.

It became evident in the course of the conference that the differences between Lenin and Plekhanov were not so much on the questions of secondary importance that had been discussed during the preliminary negotiations as on fundamental, programmatic questions.

The meeting of August 26 was particularly stormy and bitter. Plekhanov vilified Lenin, gave him to understand that he regarded Lenin and his associates as careerists.

Lenin returned from this conference shaken and outraged. He wrote:

> My "love" for Plekhanov also vanished, and I felt incredibly wounded and bitter. Never, never in my whole life had I had such sincere respect and veneration for anybody, never had I behaved with such "submissiveness" before anyone—and never have I been subjected to such a rude "kick". . . . My mental state that evening was so complex, painful and befuddled that it is hard to describe it accurately! It was a real drama, a complete rupture with the thing which for years I had tended like a favorite child and with which I had inseparably linked up the whole of my life's work.

We can imagine his state of mind on that evening of Sunday, August 26, 1900, if he could write those dramatic lines a whole week later.

Still, that night he decided "to express my indignation to Plekhanov, give up the magazine and go away, retaining only the newspaper and planning to publish the magazine material in the form of pamphlets."

At the last minute an acceptable agreement with Plekhanov was reached in order to save the "important party undertaking," that is *Iskra* and *Zarya*. But this was not what Lenin had dreamed of. He wrote:

> Outwardly, nothing seems to have happened. The entire machine is to go ahead as before, only a string has broken inside, and instead of splendid personal relations there are dry, businesslike contacts with a constant calculation, according to the formula *"si vis pacem, para bellum."*[8]

Notwithstanding his self-control, Vladimir missed Nadezhda greatly.

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[6] *Nota bene:* mark well.
[7] A reference to one of the Russian exiles.
[8] "If you desire peace, be prepared for war."

His mood is apparent in the letters he wrote to his family. The recurring theme was Nadezhda. He counted the days to the end of her term of exile and the time when she could join him. On December 26, 1900, he wrote to his mother:

> Life goes along the same old way, a life that is rather muddled. I keep hoping to arrange my work systematically, but I don't seem to manage. Things will probably start going differently in spring, and then I'll be able to get into my stride.

Lenin did not mention Nadezhda, but his family knew, of course, why he placed so much hope on spring. On January 16, 1901, he wrote frankly:

> Not so long to wait now before Nadezhda arrives. Her term ends in two and a half months. Then I'll settle down properly.

The closer the time came for Nadezhda to be free, the more often he mentioned the fact.On January 27, 1901, he wrote, "Less than two months of Nadezhda's term left to go." And on February 20,"Nadezhda's term ends soon."

A foreign travel passport for his wife was giving Lenin grave concern. His official permission was required to obtain a passport for his wife, and for this he had to file a petition. Since he himself was living abroad, his petition would have to be certified by a Russian Consul.

On March 2, 1901, he wrote his family from Prague:

> Am leaving for Vienna. There turns out to be no Russian Consul in Prague (!), and the signature on my petition for a passport for Nadezhda must be certified.

Two days later he wrote from Vienna that he had gone through all the passport formalities, was sending Nadezhda a Vienna guidebook and wanted his sister Maria to buy her a railroad guidebook.

Nadezhda arrived in Munich in the middle of April 1901. With her arrival Lenin's mood changed noticeably. On May 19, 1901, he wrote his sister Maria, in prison at the time:

> Now that Nadezhda and Y.V.[9] have come, we have made ourselves much more comfortable, in an apartment of our own, and I am beginning to work more systematically.

After Nadezhda's arrival Lenin wrote, between May 1901 and February 1902, (besides letters, of course) about 20 works, including the long work *What Is To Be Done?* In the same period he read and made abstracts of several dozen books and articles for his work on the agrarian question.

Immediately after her arrival Nedezhda assumed the many difficult duties of secretary of the newspaper *Iskra*. For one thing, she had to do an enormous amount of work organizing secret correspondence, arranging passwords, ciphers, secret addresses, and so on.

The letters Lenin wrote his wife on the rare occasions when they were separated in the years 1901 to 1903 show how highly he valued her work and her advice on party matters.

From time to time his letters mention walks together and other forms of recreation. "Nadezhda and I were thinking of going rowing, but the weather is very changeable," he wrote his mother on August 3, 1901. On September.21 he reported:

> The weather here is now much better, after a fairly long rainy spell, and we are taking advantage of it for all kinds of outings to the picturesque environs. Since we did not manage to get away this summer, we must take advantage of this at least!

After they moved to London, there were even more reports of joint outings. On September 14, 1902, for example, he wrote his mother: "The weather is amazingly fine for autumn—making up for a bad summer, I suppose. Nadezhda and I have set out several times in search of fine suburbs, and found them." Sometimes he gave details. On March 29, 1903, he wrote his mother:

> The weather is warm now. Y.V. accompanied us on a long walk a few days ago. We took sandwiches with us instead of lunch, and set out for the whole day *ins Yüne* on a Sunday. (It always seems to turn out that we do what everyone else does here—choose a Sunday for a walk, although it is not particularly convenient since there are people everywhere.) It was a wonderful outing. The air made us all drunk, just like children, and afterward I went to bed, the way I used to do after hunting in Siberia. Outings are our passion. We're the only ones of the comrades here who are exploring the suburbs. We have discovered all sorts of "rural" paths and are familiar with the places near us. Now we are planning to go farther afield.

Mention of the theater or concerts occurs much more rarely, probably because they preferred the walking trips.

A letter of Lenin's of February 4, 1903, reads:

> Nadezhda and I are well, and jog along in the same old way. Not long ago we attended our first concert this winter. It gave us great pleasure, especially Tchaikovsky's last symphony, the *Symphonie Pathétique*.

Nadezhda's Illness

The goiter from which Nadezhda had suffered for a long time grew much worse in the spring of 1913. Lenin, much disturbed, decided to move immediately from Cracow to the village of Poronin, in the foothills of the Carpathians, where he hoped the pure mountain air and the quiet would help her.

In April he wrote to his family, and particularly to his brother Dmitri, a doctor in whose experience he had great faith. He described his wife's illness and asked his brother's advice.

These letters have not been preserved, but we know their contents from a letter Lenin's mother wrote to her youngest daughter on April 30, 1913.

> I have just had a letter from Vladimir in which he also writes to Dmitri, telling him that in spite of electric treatment for three weeks there has been no change in her eyes, neck and heart. . . . Friends advise him to take Nadezhda to Berne to Dr. Kocher, a first-class specialist in this disease. He'll cure her, they say. The disease is serious and should not be neglected. Later it will be too late to do anything. . . . Vladimir cannot make up his mind what is best. He wonders whether they should give up the cottage they have taken in the mountains where the air is so wonderful—what the doctors advised for her. If he takes her to Dr. Kocher, the latter may insist on an operation, and many people say such operations are difficult and the outcome uncertain. . . . Vladimir wants to know what Dmitri thinks. . . . The letter came two days before Dmitri's return. He read the letter and immediately got out his medical books, made notes, consulted with doctors here and only yesterday got the answer off by registered mail.

It soon became clear that mountain air alone would not cure Nadezhda, and she would have to be taken to Dr. Kocher. Lenin's letters show how worried he was. On May 8, 1913, he wrote one of his comrades:

> Note my change of address. We came to a village here near Zakopane to let the mountain air help Nadezhda's goiter. (We're at an altitude of about 700 meters.) I have been warned that to neglect the disease might end in disaster. But if I take her to Berne to Kocher. . . . He's a first-class celebrity, a surgeon. And surgeons like to cut up their patients. It seems an operation in this case is extremely dangerous and extremely doubtful. The disease is also treated with mountain air and quiet. But "quiet" is a hard thing to achieve in our nerve-racking life. The disease is caused by nervous disturbances. Nadezhda had three weeks of electric treatment but with no improvement. She still has all the symptoms of goiter, the prominent eyes, swollen neck and palpitations of the heart.
>
> Would you find out what you can about Kocher? I don't know how to do it, and I'd like to get an opinion. Would it be possible to arrange a talk with Kocher if one went with a student or a doctor? Or would he refuse to talk without seeing the patient? Or could one have a talk with him if one had a letter from Nadezhda's doctor, the one here in Cracow? If you could learn something significant in Berne about Kocher or from Kocher (the latter would be better, of course), I would be very grateful to you. If what you find out suggests we ought to come to Berne, then make a note of Kocher's office hours and when he takes his summer holiday, and how we should make arrangements to live in Berne, at a nursing home (or is that very expensive?) or in another way.
>
> Thanking you in advance for your efforts,
> I press your hand.

Lenin spoke of Nadezhda's illness to other people, among them the writer Maxim Gorky, and of course to his relatives.

Finally it was decided to go to Berne. The time spent waiting for the appointment with Dr. Kocher and then waiting for the operation on Nadezhda, who was placed in the clinic for that purpose, was filled with anxiety. Lenin could not write articles for *Pravda*, could not even write letters. Evidence of this is the fact that for the period between June 29 and July 25, 1913, we have only a single letter of his.

The operation was performed on July 23, 1913. On July 25 he wrote to Gorky:

> I've been meaning to write you but have put it off because of my wife's operation. The operation took place the day before yesterday, and she is now on the road to recovery. The operation proved fairly difficult. I'm very glad we had Kocher.

In a letter to his mother on July 26, Lenin wrote:

> Nadezhda had her operation on Wednesday, after two weeks of "preparation" at the clinic. The operation is evidently successful, for yesterday Nadezhda looked quite healthy and began drinking eagerly. It must evidently have been a difficult operation. They tortured Nadezhda for about three hours without an anesthetic, but she endured it courageously. She was pretty bad on Thursday—a high fever and delirium. You can imagine how frightened I was. But yesterday it was clear she was better, with no fever, a steadier pulse, and so on.
>
> Kocher is a splendid surgeon. With a goiter one should go to him.
>
> I embrace you tenderly, my dear, and send Maria and Anna my very best. Nadezhda sends her best to all of you.

Nadezhda's successful operation restored his peace of mind and usual capacity for work.

He was concerned for his wife's health at all times, not only when she was ill. Here is an example from the Soviet period.

When Lenin's health grew worse in the spring of 1922, the question arose of sending him to a health resort. During the negotiations and correspondence on the subject Lenin insisted time after time that he would go only to a resort suitable for Nadezhda. In his letters we find such phrases: "I must know the altitude (above sea level) of the proposed house since N.K.'s heart is bad and she could not stand a high altitude." "Abastuman is out of the question; it is like a 'coffin' down there in that narrow depression. Not the place for nervous people. There is nowhere to walk. You have to climb, and that is out of the question for Nadezhda. Borzhom would be suitable; there would be walks on level ground and Nadezhda needs that."

She died at the age of 70, a professional revolutionary, a leading figure in the Communist Party and the Soviet state, the author of many books and articles on education. Two-thirds of her life was inseparably bound up with Lenin.

Today, on the eve of the centennial of his birth, we remember Nadezhda Krupskaya, who did so much to help him, with special warmth and gratitude.

Courtesy of the magazine Nauka i Zhizn

[9] Nadezhda's mother.

May 1919:
Lenin and his wife
leave the
Trade Union House
after a meeting.



This photo was taken in August or September 1922, while Lenin was living in Gorki (in the Moscow countryside). With his wife Nadezhda K. Krupskaya, his nephew Victor, and a worker's daughter Vera, he had stopped to rest during a walk through the park.



Autumn, 1920:
In Lenin's
apartment. With
him are his wife
and members
of his family.



THE ORIGINAL: WHERE IS IT?

The fifth, and latest, edition of Lenin's* Collected Works, *completed in 1965, consists of 55 volumes and includes about 9,000 separate texts. The number of volumes in Lenin's* Collected Works *has been growing from edition to edition, largely due to the discovery of lost texts through painstaking searches, in some cases lasting years. Between 1959 and 1963 alone this search yielded 579 hitherto unknown texts. One text that has not yet turned up is the second, central, part of his book* What the "Friends of the People" Are and How They Fight the Social-Democrats *(1894). This important work gives a detailed analysis of the unscientific, idealist views of the Russian Narodniks and sets forth the fundamentals of historical materialism. In contrast to the Narodniks, who regarded the peasant commune as the embryo and foundation of socialism, Lenin linked up Russia's future with the working class. His book ended with the prophetic words:

> ***It is on the working class that the Social-Democrats concentrate all their attention and all their activities. When its advanced representatives have mastered the ideas of scientific socialism, the ideas of the historical role of the Russian worker, when these ideas become widespread, and when stable organizations are formed among the workers to transform the workers' present sporadic economic war into conscious class struggle — then the Russian worker, rising at the head of all the democratic elements, will overthrow absolutism and lead the* Russian proletariat *(side by side with the proletariat of* all countries) along the straight road of open political struggle *to the VICTORIOUS COMMUNIST REVOLUTION.***

The following is an excerpt from the book* In Search of a Priceless Legacy *by historian Roman T. Peresvetov. (Moscow, 1968)

THE MOST IMPORTANT work Lenin wrote in the early period of his revolutionary activity was *What the "Friends of the People" Are and How They Fight the Social-Democrats.*[1] The manuscript was most likely destroyed during the frequent searches and arrests by the secret police in St. Petersburg at the end of the last century, in an effort to curb the growing activity of the clandestine study groups which young Lenin had united into the revolutionary organization the League of Struggle for the Emancipation of the Working Class. The manuscript was, however, lost after the book was published illegally.

There is evidence that copies of the book were made a number of times by various methods and were circulated in many Russian towns. However, owing to the same circumstances that probably account for the destruction of the original, all copies of the book vanished. This latter assumption was just an assumption, though, and there was still hope that the book would be found. A search was begun in the early Soviet years.

Without the Author's Name

The persons engaging in the search established, in the first place, that the book had been printed without the author's name on the cover. Moreover, it had come out in separate parts, which were hectographed or mimeographed. The primitive duplicating equipment of the period made no more than 50 copies at a time. For this reason separate parts were duplicated several times. Since the duplication was clandestine, it was not always possible to get out the various parts in their proper sequence or in the same number of copies.

The first part, a critique of the views of Nikolai Mikhailovsky,[2] a leader of the liberal, that is, nonrevolutionary, right wing of the Narodniks, was printed on five occasions in a total of about 300 copies. Owing to difficulties that arose during its printing, the second part, containing an analysis of the views of another prominent leader of that movement, Sergei Yuzhakov,[3] came out in something like 150 copies. Finally, the third part, in which Lenin presented the Marxist view in a critique of Sergei Krivenko,[4] another leader of the liberal section of the Narodniks, was printed only once, in St. Petersburg.

Lenin's book was well received in Russian Marxist circles. Copies of it were even made by hand. It was not only the police, however, who destroyed the hectographed and handwritten copies. Fearing search and arrest, quite a few owners of the book burned it themselves. For example, those were the circumstances under which nearly all the copies of the fifth edition of the first part of the book, printed by hectograph in a village near the Ukrainian town of Chernigov, were burned.

What with one thing and another, this book of Lenin's which was well known to the early Russian Marxists and contributed significantly to their unity was thought to have been completely lost. It was not until 1923, in Petrograd, that Vladimir Nevsky, later director of the Lenin Library, found two parts of the book, the first and the third, in the archives of the former Police Department. At just about the same time, two copies of the same two parts were found in archives in Berlin. Ever since then, *What the "Friends of the People" Are* has been included in the editions of Lenin's *Collected Works* and has been put out as a separate volume. In each case, however, including the fifth and latest edition of the *Collected Works,* the editors have pointed out that the text is incomplete because the second part has not yet been found.

What happened to the second part? Why has it not come to light?

For technical reasons and also for secrecy considerations, the various parts of *What the "Friends of the People" Are* were printed separately and in different places. Afterward, however, they were often brought together. In reminiscences by friends and associates of Lenin at that period, there is mention of all three parts as a single unit. Why, then, is just the second part lost, and is there any hope that it will be found? Some of the circumstances under which this part was printed and circulated help to provide an answer to the question.

In the spring of 1894 Alexei Ganshin, a young engineer who was closely connected with a Marxist circle in St. Petersburg led by Lenin and also with a group of revolutionaries in Moscow, came forward with the tempting proposal to set up *What the "Friends of the People" Are* in type and print it illegally. He hoped to carry out this project in Moscow with the help of two of his cousins, Alexander and Vladimir Maslennikov, both students at the Higher Technical School, who had managed to get hold of a set of type.

The proposal was enthusiastically approved, but problems developed when they started to carry it out. In Moscow Alexei Ganshin learned that the Maslennikovs had been forced to return the type to the compositor: He had suddenly become frightened of doing clandestine work.

Next, Alexei Ganshin tried to persuade a printing worker in a small provincial town to either print the book in secret or at least supply a set of type. Nothing came of this either because the worker was afraid to take the risk. He did, however, get a lithographic stone for Ganshin.

Lenin came to Moscow from St. Petersburg, met Ganshin and gave him the manuscript of all three parts of the book. For reasons of secrecy Ganshin decided to print the book at his father's estate in Vladimirskaya Guberniya, some 150 miles northeast of Moscow. He went there with a typewriter, a roller and a supply of printer's ink, taking Vladimir Maslennikov

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[1] At that time the Russian Marxists called themselves Social-Democrats.

[2] Nikolai K. Mikhailovsky (1842-1904), sociologist and literary critic, one of the editors of the magazine *Russkoye Bogatstvo* (published in St. Petersburg from 1876 to 1918). An advocate of the antiscientific subjective method in sociology and a supporter of the reactionary theory of "heroes" and the "mob."

[3] Sergei N. Yuzhakov (1849-1910), economist and sociologist, author of *Agricultural Future of Russia's Black Earth Belt, Sociological Studies, Problems of Enlightenment* and other books. An adherent of the subjective school in sociology.

[4] Sergei N. Krivenko (1847-1907), economist, one of the editors of the magazine *Russkoye Bogatstvo,* author of *Concerning Cultured Individuals* (1893), *The Needs of the Folk Industry* and other works. An advocate of reconciliation with czarism, he denied the existence of class antagonisms Like Mikhailovsky and Yuzhakov, he actively opposed Marxism and the Russian Marxists.

along to help him. But they were inexperienced, and nothing came of the venture: The copies they made were too blurred.

Returning to Moscow, Maslennikov managed to pick up a mimeograph machine for small leaflets, which he used as a model to make a machine that would be suitable for printing the book. This crude mimeograph machine made in a carpentry shop was very slow, however. Lenin, disturbed by all this, sent a member of his clandestine circle to Ganshin to get the finished copies as well as the manuscript and bring them to St. Petersburg. By this time the St. Petersburg circle had acquired a hectograph of its own on which several editions of the book were printed in a relatively short time. We know that at Lenin's request the third part was printed after the first, although we do not know why.

Yellow Notebooks

It is possible that the St. Petersburg Marxists printed the third part after the first because the second part was being printed meanwhile in Moscow. This supposition is founded, for one thing, on the fact that a confidential memorandum from the Governor of St. Petersburg dated May 27, 1894, (it was found in the police archives after 1917) said that two parts of the Marxist book about "friends of the people" had been printed in St. Petersburg and one part in Moscow. This police document is not too reliable a source, however. A study of the archives made in Soviet times shows that the czarist secret police were very poorly informed about the circulation of Marxist literature in Russia. As a matter of fact, there are several reliable indications that all three parts of the book were printed in St. Petersburg. They were bound in similar yellow covers and circulated under the name of "Yellow Notebooks." Nadezhda Krupskaya, among others, mentions this in her reminiscences.

From Alexei Ganshin we know that while he printed 100 copies of the first part at his father's estate and a certain number of copies of the second part in his father's Moscow apartment, he knew for certain that the book was "printed again in its complete form" in St. Petersburg. When Alexei Ganshin was arrested in the middle of 1905, the police confiscated his one and only copy of the third part of Lenin's book. By this time neither the first nor second parts were any longer in his possession.

There Is Hope

So many years have passed since that there would seem to be no hope of finding the lost text; yet there is hope. There are grounds for assuming that at least one copy of the second part escaped destruction. Let us look into some of the episodes of the search and make a supposition, even if it is very hypothetical.

At one point in the twenties it looked as though the scholars who were collecting Lenin's literary legacy had hit on the right track. This was after a bibliophile in Leningrad (formerly Petrograd and St. Petersburg) mentioned an interesting notebook he had come across "just a little while ago." It consisted of a bound collection of pamphlets which had been issued by the League of Struggle for the Emancipation of the Working Class, founded by Lenin. Included in the notebook was a copy of the second part of *What the "Friends of the People" Are*. The bibliophile then said that since he had no idea the notebook might have any particular value, he had turned it over to the depository of the Leningrad Public Library. He had not thought of making a note of its registry number or letters. The most painstaking search was made in the depository, but it failed to yield the unique notebook.

Another episode. A young historian named Georgi Zhuikov, knowing that

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Lenin had presented a copy of all three parts of *What the "Friends of the People" Are* to Georgi Plekhanov at a meeting in Switzerland, searched for it among Plekhanov's private papers in the Plekhanov archive in Leningrad. In a folder labeled "Unknown Manuscripts," he came across a pamphlet which had been printed by hectograph and lacked the first few pages. This turned out to be the third part of *What the "Friends of the People" Are,* which had now been found for the fourth time.

Inspired by this find, Georgi Zhuikov began to explore other avenues. In the Moscow Regional Historical Archives, among the items of evidence collected by the czarist secret police in a case against a group of revolutionary college students, he found still another copy of the third part of the book (the fifth to be found). It did not have a cover or title page, but the text was intact. In the same archives Georgi Zhuikov unearthed papers relating to Alexei Ganshin's arrest, among them a typed page which analyzed the views of Sergei N. Yuzhakov, the very same man with whom the second part of Lenin's book dealt. On this page Yuzhakov is called a "friend of the people" in quotation marks, exactly as in Lenin's book. Could this be an outline of a section of the second part? It is highly probable. All the more so since the page comments on Yuzhakov's view regarding a domestic market in Russia to promote the development of capitalism—a question that stirred up a violent controversy between the Marxists and the Narodniks. Furthermore, the page had been typed on a Remington, the make of typewriter Ganshin had bought in Moscow, and had evidently been duplicated on the mimeograph which had given Ganshin so much trouble.

After a study of the page, scholars at the Institute of Marxism-Leninism in Moscow reached the conclusion that the supposition required additional proof. Zhuikov continued the search (all of this in his spare time), and it was crowned by another valuable discovery.

Among the papers in the Central State Historical Archives in Moscow, he found an unknown letter by Lenin dated July 21, 1894—just about when Lenin was working on the second part of *What the "Friends of the People" Are.* This was evidently the work the letter refers to in veiled form, for purposes of secrecy.

The letter was found in the secret police division of the archives. The police had intercepted the letter and made a copy. They had removed it from an envelope sent by Princess Anna Kugusheva from Nizhny Novgorod (now the city of Gorky, on the Volga) to Switzerland on July 25, 1894. She had sent Lenin's letter together with her own to Lyubov Milovidova, fiancée of Leonid Krasin, member of the Marxist circle of which Lenin became the leader soon after his arrival in St. Petersburg.

At the end of her letter Princess Kugusheva wrote: "Yes, Zinaida Pavlovna sends both of you her regards. I see her often. She is a very fine person. I am sending you a letter at the request of U."

The police official who intercepted the letter wrote the surname Nevzorova in brackets next to the name Zinaida Pavlovna and the name Ulyanov (that is, Lenin) next to the initial "U."

Lenin's letter said, in part:

> I received the copy and sat down to it. The point is that you dropped the job unfinished. When we began reading the clean copy of the notebooks, there turned out to be a pile of mistakes (I saw that there are also lots of mistakes in the drawings). After reading it, our mutual friends said it was a very poor job. And so, although I was devilishly fed up with it, I had to sit down and look it over. As a result, the clean notebooks turned into a rough draft.

At the bottom of the typed copy of the letter made by the police was the signature "Ulyanov" copied in ink from the original.

Could the notebooks mentioned in this letter be the "yellow" ones?

Georgi Zhuikov started out by trying to determine who Princess Anna

Kugusheva was, and where and when Lenin had met her.

In the biographical data on Lenin in his *Collected Works*, Georgi Zhuikov found no mention of Lenin's having visited Nizhny Novgorod, where the sender of the letter might have lived, in 1894. However, in an article by Zinaida Nevzorova in a recently published volume of reminiscences of Lenin by people of Nizhny Novgorod, we find the following:

> I do not remember exactly the month—either the end of May or, more likely, the beginning of June 1894—when Vladimir Ulyanov paid a visit to Nizhny Novgorod on his way from St. Petersburg. He wanted to make contact with the Nizhny Novgorod group of Social-Democrats. A meeting to introduce him to our organization was held at the home of Anna Kugusheva, a former student of the women's courses in St. Petersburg.

It turns out that Princess Kugusheva had attended the same women's courses which Nadezhda Krupskaya (Lenin's wife), Zinaida Nevzorova and many other participants in the revolutionary movement completed. Anna Kugusheva was also an active member of the Social-Democratic movement, as was her brother Yegor, a student at the Technological Institute where the Marxist circle Lenin led had been founded. The "Review of the Main Interrogations Carried Out in the Imperial Gendarme Departments for State Crimes" stated that Princess Kugusheva and her brothers had been arrested and deported several times "for Social-Democratic propaganda among workers." Her brother Yegor knew Lenin well and helped to print the first part of *What the "Friends of the People" Are* in St. Petersburg.

The extract from Lenin's letter cited above says, "I received the copy," but it does not say what it was a copy of or why it had been sent to him. These notebooks had evidently been delivered illegally, judging by certain words Lenin underlined in the letter. Georgi Zhuikov concluded that on receiving this copy of his book, Lenin had to sit down and proofread it because the senders had "dropped the job unfinished."

Georgi Zhuikov believes that a copy of *What the "Friends of the People" Are* had been sent to Lenin and that he had corrected the mistakes in preparation for its publication abroad. Judging by the fact that the letter mentions drawings, that is, diagrams and charts, appended to the notebooks, and that their purpose could have been to refute the economic calculations of the Narodniks, what Lenin was evidently doing in this case was preparing the second part of his book for publication.

The discovery made by Georgi Zhuikov deserves serious attention, although his analysis of the contents of the letter leaves unanswered the question of whom Lenin was writing to. The fact that it was enclosed in an envelope addressed to Lyubov Milovidova does not necessarily mean it was intended for her.

The letter from Princess Kugusheva to Milovidova in the same envelope has the sentence, "Yes, Zinaida Pavlovna sends both of you her regards." Could it not follow from these words that another person, whose name we do not know, lived at the same address to which Lenin's letter was sent? On the other hand, it is possible that in the summer of 1894 Lyubov Milovidova tried to print the second part of the book secretly in Nizhny Novgorod but did not finish the job because of her departure for Switzerland. If this was the case, then Lenin's reproach that "you dropped the job unfinished" becomes clear.

In general, Lenin's correspondence, which has been far from completely brought to light and deciphered, may provide the key to the discovery of the missing second part of *What the "Friends of the People" Are* or explain its disappearance.

In the United States?

Meanwhile, the search continues. Among the many conjectures regarding the whereabouts of the second "Yellow Notebook" is this one:

In the spring of 1897 Lenin lived for a time in the Siberian town of Krasnoyarsk, waiting for the authorities to decide where he would be exiled. (They chose the village of Shushenskoye.) Here he obtained permission to use the then well-known library of a local merchant named G. V. Yudin, and he visited this library many times. Yudin was an avid collector of uncensored and banned publications and could, of course, have obtained the "Yellow Notebooks" from one of the many political exiles who in those years passed through Krasnoyarsk on their way to more remote parts of Siberia.

Yudin's library of more than 80,000 titles was sold to the Library of Congress in the United States in 1907 after the czarist government had refused to buy it "for lack of funds." For some reason this collection, which undoubtedly has considerable value, is not mentioned in the latest and most complete guide to the archives and manuscript collections in the United States, published in 1961. It is known, however, that Yudin's collection was not preserved intact in the United States. Most of it was distributed among collections of various subjects; only a fraction of the original library is left. So who knows? It could be that the second "Yellow Notebook," which searches in Russia and other places in Europe have not brought to light, is lying on a shelf somewhere in the United States.

The search for the missing part of Lenin's book would be facilitated somewhat if we had a better idea of its contents. What information we do have on that score is fragmentary. Some of the information comes from the reminiscences of readers who were familiar with the complete text. There is Alexei Ganshin, for instance, who said that the second part was longer than the first or the third.

What the Missing Part Is About

References to the contents of the second part can also be found in other writings by Lenin himself. For instance, in the epilogue to the first edition of the first part of the book, which analyzes views of Mikhailovsky, he wrote that the next two parts would deal with the views of other contributors to the magazine *Russkoye Bogatstvo*, namely, Sergei Yuzhakov and Sergei Krivenko. Since Krivenko's opinions are analyzed by Lenin in the third part, the second part should deal with Yuzhakov, whom Lenin called "the most striking exponent of the politico-economic theories of the Narodniks."

In Lenin we also find several other fragmentary indications as to the contents of the second part, from which we can conclude that here he demonstrated the insolvency of Yuzhakov's "childish idea" that capitalism in Russia did not affect the handicraft industries. In the first part of his book Lenin says:

> We shall, incidentally, see later that it is a constant and consistent tactic of the "friends of the people" to shut their eyes pharisaically to the intolerable condition of the working people in Russia.

The words "see later" undoubtedly refer to the second part of the book.

In the third part of the book we find enough direct references to the second part to give us quite a list of the questions covered. In the second part Lenin analyzed and refuted: the erroneous views of the Narodniks on the development of capitalist society, in particular, their denial of capitalist development in Russia; the exaggeration by the Narodniks of the significance of the reform of 1861 which abolished serfdom; their idealization of the role of the capitalist as a "model entrepreneur"; the failure of the Narodniks to understand the essence of home industries as a part of capitalist production; their underestimation of the hardships of Russia's working people which, they believed, could be alleviated by turning to the bourgeoisie and the czarist government for assistance.

In the opinion of scholars, the second part of Lenin's book was a reply to a long article in *Russkoye Bogatstvo* by Sergei Yuzhakov headed "Problems of Russia's Economic Development." Lenin's choice of an almost identical heading—"A Study of Russia's Economic Development"—was no doubt deliberate. Here, evidently, he refuted Yuzhakov's views with a scientific, Marxist analysis of the economic development of Russia.

ON MATERIALISM IN HISTORY

By Vladimir I. Lenin

This excerpt (the title is SOVIET LIFE's) is from Part I of Lenin's* What the "Friends of the People" Are and How They Fight the Social-Democrats, *in which he analyzes the idealist subjective views of history held by Nikolai Mikhailovsky, an ideologist of liberal Narodism (a nineteenth century movement for a peasant social revolution). Lenin contrasts the unscientific ideas of the Narodniks with the Marxist, materialist idea of history.

He presents Marx's concept that the sum total of the relations of production constitutes the economic structure of society—the real foundation upon which a legal and political superstructure rises, and to which definite forms of social consciousness correspond. He then writes:

THIS IDEA OF MATERIALISM in sociology was in itself a stroke of genius. Naturally, *for the time being* it was only a hypothesis, but one which first created the possibility of a strictly scientific approach to historical and social problems. Hitherto, not knowing how to get down the simplest primary relations such as those of production, the sociologists undertook the direct investigation and study of political and legal forms, and stumbled on the fact that these forms emerge from certain of mankind's ideas in the period in question. There they stopped; it appeared as if social relations are consciously established by men. But this conclusion, fully expressed in the idea of the *Contrat Social*[1] (traces of which are very noticeable in all systems of utopian socialism), was in complete contradiction to all historical observations. It never has been the case, nor is it so now, that the members of society conceive the sum total of the social relations in which they live as something definite, integral, pervaded by some principle. On the contrary, the mass of people adapt themselves to these relations unconsciously, and have so little conception of them as specific historical social relations that, for instance, an explanation of the exchange relations under which people have lived for centuries was found only in very recent times. Materialism removed this contradiction by carrying the analysis deeper, to the origin of man's social ideas themselves; and its conclusion that the course of ideas depends on the course of things is the only one compatible with scientific psychology. Further, and from yet another aspect, this hypothesis was the first to elevate sociology to the level of a science. Hitherto, sociologists had found it difficult to distinguish the important and the unimportant in the complex network of social phenomena (that is the root of subjectivism in sociology) and had been unable to discover any objective criterion for such a demarcation. Materialism provided an absolutely objective criterion by singling out "production relations" as the structure of society, and by making it possible to apply to these relations that general scientific criterion of recurrence whose applicability to sociology the subjectivists denied. So long as they confined themselves to ideological social relations (*i.e.*, such as, before taking shape, pass through man's consciousness)[2] they could not observe recurrence and regularity in the social phenomena of the various countries, and their science was at best only a description of these phenomena, a collection of raw material. The analysis of material social relations (*i.e.*, of those that take shape without passing through man's consciousness: when, exchanging products, men enter into production relations without even realizing that there is a social relation of production here)—the analysis of material social relations at once made it possible to observe recurrence and regularity and to generalize the systems of the various countries in the single fundamental concept: *social formation*. It was this generalization alone that made it possible to proceed from the description of social phenomena (and their evaluation from the standpoint of an ideal) to their strictly scientific analysis, which isolates, let us say by way of example, that which distinguishes one capitalist country from another and investigates that which is common to all of them.

Thirdly, and finally, another reason why this hypothesis for the first time made a *scientific* sociology possible was that only the reduction of social relations to production relations, and of the latter to the level of the productive forces, provided a firm basis for the conception that the development of formations of society is a natural process of history. And it goes without saying that without such a view there can be no social science (The subjectivists, for instance, although they admitted that historical phenomena conform to law, were incapable of regarding their evolution as a natural process of history, precisely because they confined themselves to the social ideas and aims of man and were unable to reduce them to material social relations.)

Then, however, Marx, who had expressed this hypothesis in the forties, set out to study the factual *(nota bene)* material. He took one of the social-economic formations—the system of commodity production—and on the basis of a vast mass of data (which he studied for not less than 25 years) gave a most detailed analysis of the laws governing the functioning of this formation and its development. This analysis is confined exclusively to production relations between members of society. Without ever resorting to factors outside the sphere of these production relations for an explanation, Marx makes it possible to discern how the commodity organization of social economy develops, how it becomes transformed into capitalist organization, creating antagonistic classes (antagonistic within the bounds of production relations), the bourgeoisie and the proletariat, how it develops the productivity of social labor, and thereby introduces an element that becomes irreconcilably contradictory to the foundations of this capitalist organization itself.

Such is the *skeleton* of *Capital*. The whole point, however, is that Marx did not content himself with this skeleton, that he did not confine himself to "economic theory" in the ordinary sense of the term. While *explaining* the structure and development of the given formation of society *exclusively* through production relations, he nevertheless everywhere and incessantly scrutinized the superstructure corresponding to those production relations and clothed the skeleton in flesh and blood. The reason *Capital* has enjoyed such tremendous success is that this book by a "German economist" showed the whole capitalist social formation to the reader as a living thing—with its everyday aspects, with the actual social manifestation of the class antagonism inherent in production relations, with the bourgeois political superstructure that protects the rule of the capitalist class, with the bourgeois ideas of liberty, equality and so forth, with the bourgeois family relationships. It will now be clear that the comparison with Darwin is perfectly accurate: *Capital* is nothing but "certain closely interconnected generalizing ideas crowning a veritable Mont Blanc of factual material."[3] And if anybody has read *Capital* and contrived not to notice these generalizing ideas, it is not the fault of Marx, who, as we have seen, pointed to these ideas even in the preface. And that is not all; such a comparison is correct not only from the external aspect (which for some unknown reason particularly interests Mr. Mikhailovsky), but also from the internal aspect. Just as Darwin put an end to the view that the species of animals and plants are unconnected, fortuitous, "created by God" and immutable, and was the first to put biology on an absolutely scientific basis by establishing the mutability and the succession of species, so Marx put an end to the view that society is a mechanical aggregation of individuals which allows all sorts of modification at the will of the authorities (or, if you like, at the will of society and the government) and which emerges and changes casually. He was the first to put sociology on a scientific basis by establishing the concept of the economic formation of society as the sum total of given production relations, by establishing the fact that the development of such formations is a natural process of history.

Now—since the appearance of *Capital*—the materialist conception of history is no longer a hypothesis, but a scientifically proven proposition. And until we get some other attempt to give a scientific explanation of the functioning and development of some formation of society—formation of society, mind you, and not the way of life of some country or people, or even class, etc.—another attempt just as capable of introducing order into the "pertinent facts" as materialism is, that is just as capable of presenting a living picture of a definite formation, while giving it a strictly scientific explanation—until then the materialist conception of history will be a synonym for social science. Materialism is not "primarily a scientific conception of history," as Mr. Mikhailovsky thinks, but the only scientific conception of history.

Written in the spring and summer of 1894. First printed on a hectograph, underground, that same year.

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[1] Jean-Jacques Rousseau, *Du contrat social; ou, Principes du droit politique* (Amsterdam: 1762). The book, translated into Russian in 1906, asserted that every social system should be the result of a free agreement, of a contract between people. (Footnote by SOVIET LIFE.)

[2] We are, of course, referring all the time to the consciousness of "social relations" and no others. (Footnote by Lenin.)

[3] The quotation is from Mikhailovsky's article; the reference is to Darwin's work on the origin of animal and plant species. (Footnote by SOVIET LIFE.)

Vera Dulova, harpist and teacher (on left), in the Bolshoi orchestra pit.

HER HARP HAS the sonority of a full orchestra—the quaver of the strings, the deep-throated rumble of the double bass, the tinkle of the harpsichord, and even the organ's chorale. At her touch, this instrument, created for pizzicato, takes on the mellowness of a violin or of the human voice.

Her technique is flawless. Pierre Jamet, famous French harpist, described Vera Dulova as the world's finest harp performer.

"Femininity Incarnate"

That she became a musician is hardly surprising. Her father, Georgi, was professor of violin at the Moscow Conservatory. Her mother, Maria, sang at the Royal Mariinsky Opera in St. Petersburg before becoming a concert singer in Moscow. Her grandmother was a pupil of Nikolai Rubinstein, that brilliant pianist who founded the Moscow Conservatory.

Vera was five when she took her first piano lesson. But she was drawn to the cello. Her father thought the cello was unsuitable for ladies. He offered her a choice of any other instrument. She hated scales and wanted an instrument that dispensed with them. He told her that you had to practice scales on all instruments, including drums. Since it did not matter she chose the harp. Her father approved. "That instrument," he said, "is femininity incarnate." And so she became a harpist.

If you ask Vera why, she has no answer. She was not especially taken with the sound of the harp, or with the performance of any harpist. But for music her choice was a happy one. It gave us a great harpist.

It Began with a Card Game

Chance played a large role in the history of Russian harp playing. It began with Alexander Slepushkin, a dashing hussar, who led the dissipated life of an officer until he won a harp at a card game. From sheer boredom, he took a few lessons and enjoyed them so much that he left the army and went abroad for serious study. He finished his musical education at the age of 27.

On his return to Russia, Slepushkin became a professor at Moscow Conservatory. He wrote several books on teaching the instrument and a number of his students became famous harpists. One of the most talented was Maria Korchinskaya, who graduated from the conservatory in 1915 with a gold medal.

Irina Blokha *Tatyana Tauer*





FIRST HARPIST

By Konstantin Telyatnikov
Photographs by Georgi Petrusov

Years of Study

When Dulova entered e Moscow Conservatory 1922, Professor Slepush- was no longer there; had died in 1918. She studied with Maria Korchinskaya. In 1925 she played at a concert given by conservatory students for the benefit of homeless orphans. People's Commissar of Education Anatoli Lunacharsky was there. A cultivated man, he immediately recognized the young harpist's unusual talents. When she graduated from the conservatory, Lunacharsky gave her a scholarship to continue her education in Germany. There she studied for two years with Professor Max Saal and gave a few concerts which were applauded by the German press.

Dulova returned to the Soviet Union in 1930, a mature musician with a good repertory. In 1932 and thereafter she was a soloist with the Bolshoi Theater orchestra, and in 1935 won first prize at the countrywide competition of musicians in Leningrad. Two years later she began to teach at the Ippolitov-Ivanov College of Music, and since 1944 she has been a professor at the conservatory.

Natalya Shameyeva *Emilia Moskvitina*



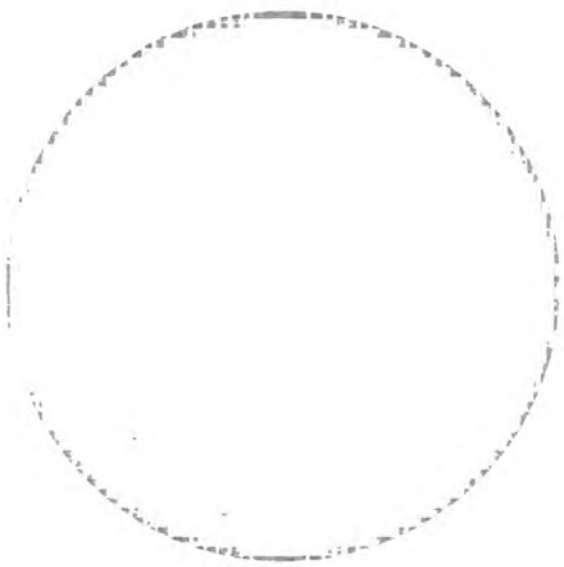
Virtuosity

A great musician always enlarges the potentialities of his instrument. It becomes part of his hands, his thoughts, his very soul. He enriches the musical language of his time no less than the composer, for it is the performer who translates the abstract laws of counterpoint into objective reality. It is not uncommon for a work to be composed for a particular performer. For Dulova, Sergei Vasilenko and Alexander Mosolov wrote harp concertos; Alexander Baltin, a sonatina; Yevgeni Golubev, a quintet (for harp and string quartet); and Georgi Kreitner, Ivan Shishov, Andrei Volkonsky and Nina Makarova, musical pieces. Dulova herself has arranged for the harp several works written for other instruments and for the orchestra.

The place in musical history of even great performers is measured, in part, by the pupils they train. Dulova's pupils are in the leading Soviet orchestras. Their solo performances are praised by audiences and critics, and many of these pupils are teachers in their own right.

In September 1965, our harpists entered their first international competition. It was held in Jerusalem and Tel Aviv. Many of their fellow contestants arrived with experience at international competitions and











The flageolet technique is demonstrated by Professor Dulova at Moscow Conservatory.



festivals. The Soviet Union was represented by Dulova's pupils Emilia Moskvitina, Natasha Shameyeva (Strebkova) and Natasha Tsekhanovskaya. Though this was their initial big test abroad, they came through with flying colors, winning the second, third and fourth prizes respectively. The first prize went to Martine Géliot, a French pupil of Professor Pierre Jamet.

Our Interview

The first international competition of harpists to be held in Connecticut has been organized by the Hartt College of Music of the University of Hartford. It will take place this month. Vera Dulova is a member of the jury.

I asked her in an interview, "What place would you say the harp has in modern music?"

"In the last two or three decades it has become a more important solo instrument. Before then, it was considered a salon instrument, on which the daughters of rich and aristocratic families strummed their 'nocturnes.' Now the repertory for the harp has been much enlarged. Prokofiev, Khachaturyan, Hindemith, Casella and many others have composed for the instrument. Paul Creston wrote an interesting rhapsody for the harp, which Khachaturyan likes very much. The famous composer once dropped into my class and heard one of my pupils playing it. 'What charming music!' he exclaimed. 'It's so new, and yet the novelty does not outshine the music.' Marcel Grandjany, American composer and harpist, composed a lovely *Fantasie on a Haydn Theme.* There are some interesting arrangements for the harp by Professor Aristid von Wurtzler of Hartt College from the work of Handel, Corelli, Vivaldi and other composers. In short, solo harpists now have a large repertory to choose from."

"I suppose the harp also has a larger place in the modern orchestra?"

"Unfortunately not. The older composers wrote far more interesting orchestra scores for the harp. This is especially true of the ballet. Take Tchaikovsky's *Swan Lake, Sleeping Beauty* and *Nutcracker,* for instance. They all have lovely solos and variations and enchanting adagios. Glazunov's ballet, *Raymonda,* and Asafyev's ballet, *Fountain of Bakhchisarai,* have brilliant scores for the harp. At one time it was traditional for a ballet to have solos for the harp, violin and cello. Unhappily, contemporary ballet composers have abandoned this tradition. I say unhappily because the harp adds a very beautiful and warm tonal effect to the orchestra score."

"Will you tell us something about the Soviet harpists who are competing?"

"Emilia Moskvitina, Natasha Shameyeva, Tatyana Tauer and Irina Blokha will be playing at Hartford. Moskvitina and Shameyeva won prizes at the contest in Israel. Tauer and Blokha are competing internationally for the first time. I'm making no forecasts; the one thing I do know is that the competition will be stiff. The program is very difficult and most of the participants are experienced. About our girls, Moskvitina is first harpist in the Moscow Philharmonic Orchestra conducted by Kondrashin. Besides, she gives a recital annually, each time with a new program. Moskvitina is a fine musician—her technique is brilliant, and she is completely at home with the harp. There are times I wish her renditions were a little less perfect, a little more spontaneous. . . . But that, of course, depends on the character of the piece she is playing."

"What is she best at—the classics or modern music?"

"She plays everything well but the classics are her forte. Her rendition of Handel's Concerto, as arranged by von Wurtzler, is simply superb."

"And Shameyeva is a different type of musician?"

"Oh, yes, Shameyeva is completely unlike Moskvitina. The two compete all the time. At the contest in Leningrad Moskvitina came out first and Shameyeva second. In Tel Aviv Moskvitina was second and Shameyeva third. She is a talented harpist, a lyricist by nature. Moskvitina is all flame, sparks and fireworks —she breaks through to her audience immediately. Shameyeva captivates you with her wonderfully deep penetration into the artistic texture of the composition, into that cherished realm of emotion to which, of all the arts, music is closest. Shameyeva finished a graduate course and is now an assistant in my department at the conservatory."

"I understand that Tatyana Tauer is something of a phenomenon."

"Yes, Tauer is amazingly talented. At 23, she is taking a graduate course, after finishing the conservatory last year. She won out over difficult competition and is now on trial in the Leningrad Philharmonic Orchestra conducted by Mravinsky. A very promising harpist, a virtuoso of great temperament and drive, she is already playing the first harp. Her temperament sometimes gets the better of her. For Tatyana, playing under a conductor like Mravinsky should be an excellent discipline. I'm hoping that Leningrad weather will cool her down a little."

"And the youngest of the lot?"

"Irina Blokha. Though only 19, she is in her third year in my class. Irina graduated from a children's ten-year music school in Kharkov. She studied with Anna Gelrot, one of our oldest teachers. Irina is really special. Moskvitina, Shameyeva and Tauer are finished harpists; Blokha is not on the same level there. But she has remarkable gifts. She gets an exquisite tone, her technique is fine, and she is very musical. In short, she has everything! It is a pleasure to work with her—you don't have to say anything twice. She understands what you want at a glance. I haven't had a pupil like her for a long time."

"At what age can a child learn to play the harp?"

"We begin training children as early as eight or nine. And they play the big concert harp from the start. There is a harp class in almost every district seven-year music school and in every secondary music school. On finishing the seven-year school, the young harpist enters a college of music, and then goes on to the conservatory. Those who have no instruments of their own practice on the school harps. The conservatory lends the student an instrument for home practice if he needs one."

"I understand that there is a big demand for harps in our country. Do we make them?"

"We do. Their production started right before my eyes. In 1937, when I began to teach at a music college, two young fellows by the names of Sergei Maikov and Alexei Kaplyuk took lessons with me. They showed no special aptitude, but they were very nice boys. They asked me out to their place in the country once. That cottage was completely automated! All they did was press buttons, and everything appeared and disappeared as though by magic. They pressed a button, and a couch came floating out of a wall. They pressed another, and the whole garden was suddenly sprayed with water.

"I told them that they were misdirecting their talents, what they ought to be doing is repairing harps. The situation with harps was simply catastrophic. We did. not manufacture them, either before the Revolution or afterward. There were many foreign harps, old French ones mostly and fewer American ones, but they were in the most deplorable condition. Nobody knew how to repair them. I gave the boys my old harp to tinker with. They took it apart and did a nice repair job, fixed a few others and then decided to try their hand at making a harp. That was no easy undertaking, let me tell you. The pedal mechanism (with seven pedals) alone, for semitones, is a very fancy affair. They had almost finished an instrument when the war broke out. The boys dropped everything, of course.

"Shortly before V-Day, Sergei Maikov came home badly battered. When he was ready to get to work again, we put our heads together. At long last, our first Russian harp was built. In my own dining room, too, which I had turned into a workshop for the duration. It was a red-letter day for all of us when, in Moscow's Beethoven Concert Hall, the harp was first put to the test. It was lined up with French, American and British instruments. The examining committee included composers Shostakovich and Khachaturyan, and conductors Pazovsky, Feiyer and Golovanov, among others. They concluded that our harp sounded fine, as good as any foreign product. And right then and there the decision was made to start the production of Soviet harps.

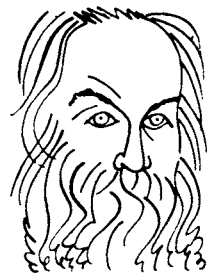
"A design office was opened at the Lunacharsky Plucking Instrument Factory in Leningrad. Just at that time Alexei Kaplyuk returned from the front—without even a scratch!—and joined in production. The factory now accounts for 600 harps, and is putting out its ninth series. It is because we are making our own instruments that we have so many harp students and that harp playing is making such headway. The American instruments are excellent, and we have quite a number of them, but they cost 5,500 dollars each. A Soviet harp is only 1,650 rubles.* Anybody who wants to study the harp seriously can buy an instrument now."

"And the last question. With what feelings are you going to America?"

"I have cordial relations with American harpists. I had a very warm reception during my last stay in the States. This will be my third visit and I shall be seeing old friends."

*One ruble equals $1.10.

Tribute to Walt Whitman on the 150th Anniversary of His Birth



IN HIS "Letter to the Russian," written in 1881 when he was well on in years, Walt Whitman addressed himself to readers across the ocean: ". . . As my dearest dream is for an internationality of poems and poets binding the lands of the earth closer than all treaties and diplomacy—as the purpose beneath the rest of my book is such hearty comradeship, for individuals to begin with, and for all nations of the world as a result—how happy I should be to get the hearing and emotional contact of the great Russian peoples."

From Turgenev to Lunacharsky

The poet's voice did not fall on deaf ears. Nine years before the "Letter to the Russian" was written, however, the famous writer Ivan Turgenev, who did so much to bring Russian and American men of letters together, had become interested in Walt Whitman. Turgenev had planned to translate that "amazing poet." He never finished the translations because of illness.

Some time ago the Paris archives of Turgenev sent us a facsimile copy of his draft translation into Russian of Walt Whitman's "Beat! Beat! Drums!" This draft, only just come to public notice, shows how carefully Turgenev was to preserve a style and form utterly different from the classical Russian poetry of his time.

In the late eighties Walt Whitman's work attracted the attention of Leo Tolstoy. The novelist's attitude to the author of *Leaves of Grass,* whom he called "an extremely original and bold poet," and to poetry as a whole was erratic and contradictory. All the same, when he read Whitman's poems, Tolstoy marked off the thoughts for which he felt a kinship. He liked the poem "I Dream'd in a Dream" for its theme of universal love and brotherhood. Three years before his death, according to his friend and physician Dr. Makovitsky, Tolstoy was reading passages from *Leaves of Grass* aloud and said about Whitman: "He is a most interesting poet, a philosophical poet who, notwithstanding a paralytic stroke retained his zest for life. In Russia he is known very little, and yet he towers above everybody."

It was then, at the turn of the century, that Whitman won a voice in the Russian language. The symbolist poet Konstantin Balmont published a volume of his translations from *Leaves of Grass* in 1905 and wrote of Whitman: "He is a poet of the present and the future. He is an important part of that future which is already being precipitated toward us and is shortly to be merged with the present." Balmont's appraisal, not free from the influence of symbolist esthetics, shows Whitman to be a poet as encompassing and infinite as the Universe. Abandoning meter and the conventional embellishments, he achieved, according to Balmont, an inner rhythm of his own that envelops his verse with "the startling melodies vibrant in the play of the waves or the rustle of the breeze."

Russian critics at the beginning of the century were unanimous in their appreciation of Walt Whitman as an innovator and titan of poetry. The impressionist critic Yuli Aikhenvald in the magazine *Russkaya Mysl (Russian Thought)* (1907) said of him: "Whitman, multigenerative, trods the earth, and from beneath his broad step rise luxuriant shoots of new life, the shoots of human grass."

The venerable Kornei Chukovsky, Whitman translator and scholar, has probably done more than anyone else to give the American poet his present large Russian audience. He first got to know Whitman, he tells us, at the turn of the century when he bought a copy of *Leaves of Grass* from a sailor in the port of Odessa for 25 kopecks, and soon was "head over heels engrossed in the book." "It was the book of a giant, far removed from our petty and hackneyed existence," he recalled afterward. "I was overwhelmed by the novelty of his perception of life; he gave everything around me a different look." This young Russian writer wanted to make Whitman the property of as many people as possible. In 1907 he published his first volume of translations. There have been 10 editions in the 60-odd years since. Chukovsky had his troubles with the Russian censorship. For translating the poem "Pioneers! O, Pioneers!" he was tried for sedition, and his volume of selections from Whitman published in 1911 was proscribed for destruction by the Court Chamber.

After the October Revolution a number of Whitman's poems —for example, "Europe"—in the revolutionary spirit of the times were dramatized as pageants. One such spectacle was staged with notable success at the new Palace of Proletarian Culture in Petrograd.

One of the first books published in the young Soviet Republic in 1918 was a volume of Whitman's poetry translated by Kornei Chukovsky. It was issued by the Parus Publishing House, headed by Maxim Gorky. The following year a second edition of this volume appeared with an introduction by Anatoli Lunacharsky, first People's Commissar of Education, who had a feeling for Whitman. Lunacharsky focused on those elements of the poetry which hailed the coming of a new epoch. "Man will awaken to the fulfillment of his joyful designation—to be

Excerpts From Kornei Chukovsky's "MY WHITMAN"

. . . If there is need to define Walt Whitman's basic, central quality, what distinguishes him from every other poet, I would say that his vitality as a writer lies in an astonishingly vivid and unfailing admiration for the boundlessness of the Universe, a feeling he carried with him throughout his life.

The essence of his personality is to be found therein, and there, too, is the source of all his inspiration and his great literary achievement.

In a way, this feeling is inherent in humanity at large. A human being plods along in his narrow and limited environment and suddenly realizes that our planet, the Earth, is but a speck in an eternally streaming Milky Way. He unexpectedly becomes aware that mankind's existence in the "cosmos" has been shrouded by billions of miles and millions of ages, and that rays reaching down from the constellation of Hercules must have swept through the mists of endless millenniums and the fierce cold of interstellar void for us to behold. This icy cold is seldom felt here. At moments, maybe, when we pay a chance visit to a planetarium or happen to find ourselves in the middle of a broad field, far from the madding crowd, in private with midnight fathomlessness.

This fleeting experience may stir one's emotions for an hour, or a single moment, and will then be forced into the shadowed recesses of the mind, gradually forgotten, buried under the more familiar strata of the daily round and the common task.

This emotion is new in the life of man. It is completely alien to the animals. It is a biological novelty which has not yet gotten more than a foothold in the human psyche.

Walt Whitman had that emotion always.

We know of no other poet who was as aware of the boundlessness of time and space. His vigorous, dynamic and tangible appreciation of this phenomenon infused all his thoughts. He visualized people and even the tiniest objects that came across his path against a background of cosmic horizons. He used the same starry panorama as a fitting environment for himself. . . .

This is the reason his poems so often give the impression of having been written by an astronomer's hand. . . .

The measure of his favorite dimensions lay among the millions and the myriads. He might be looking at you, but he would see the chain of your ancestors and descendants in which your humble personality was more than a transitory link. You might ask him what time it was and hear the word "Eternity." I have never met a man so keenly aware of the transient, swift flowing, onward speeding nature of things, or a man as sensitive to the eternally dynamic nature of cosmic space. . . .

* * *

. . . It is the accepted notion that Whitman was a poet of world democracy. If so, is there anything surprising in the fact that

POET OF THE WORLD, POET OF TIME AND SPACE

BY BORIS GILENSON
Master of Science (Philology)

the conscious and immortal finisher of the Universe's architecture. Immortal—Man is immortal. The individual alone is mortal. One who does not realize this will not understand Whitman."

Whitman and Soviet Poetry

"A prophetic figure at the entrance to the new world," as Lunacharsky called him, Whitman exerted a marked influence on such young Soviet poets as Alexei Gastev and Sergei Obradovich, who in the early twenties made up the Kuznitsa (Forgeshop) group. Their "Whitmanism" evinced itself in their free verse forms, their "cosmic" and "planetary" phrasing, and their efforts to give the individual the dimensions of class and people.

In his young days Vladimir Mayakovsky, too, had his Whitman period. Kornei Chukovsky, a close friend, says that Mayakovsky liked to recite lines from Whitman, that he was fascinated by the bold and powerful hyperbole. He was interested in the way the American poet read his work aloud and the treatment he received from critics. "It was as though he measured his own life by Whitman's." Certain aspects of Whitman's style, his exaggerations and eccentricities, appealed to the young Mayakovsky. The influence of *Leaves of Grass* can be traced in Mayakovsky's early works, his poem "Man" and the tragic "Vladimir Mayakovsky." Nevertheless, the Soviet poet, as Chukovsky testifies, "was never an imitator of Whitman. . . . At the age of 22 Mayakovsky was already a poet in his own right, with his own individual theme and singular voice. In Whitman he saw a senior confrere and collaborator rather than a mentor."

Some of our contemporary poets, too, for example, Andrei Voznesensky and especially the Lithuanian poet Eduardas Miezelaitis, suggest the Whitman tradition. As the late Alexander Makarov, a Soviet critic, put it, the "Niagara of Miezelaitis' lyric verse" has the cosmic touch and philosophical breadth of the author of *Leaves of Grass*. Miezelaitis himself has these lines in one of his poems: "And there was born upon the earth Whitman, the beginning of future beginnings." The poem "Niagara Falls, or a Stroll with Walt Whitman" was one of the products of a visit he made to the United States in the early sixties. Its concluding lines, written in English, echo Whitman: "And mind the word of the modern, the word en masse." They bring to mind these lines from Whitman's poem "One's-Self I Sing:"

> One's-self I sing—a simple separate Person;
> Yet utter the word Democratic, the word *En-masse*.

Whitman and the Soviet Critics

Beginning with the first postrevolutionary editions, Whitman was published at regular intervals in the Soviet Union. Noteworthy is the 1935 edition of *Leaves of Grass* with a foreword by the well-known Soviet critic Dmitri Mirsky, who pointed out that the "passion of Whitman is the passion for unity, equality, human dignity and progress." Incidentally, this Soviet critic's article appeared in the United States in the *Walt Whitman Handbook* (1946) and *Walt Whitman Abroad* (1955) by Gay Wilson Allen. A Whitman volume was published even during the war years, in 1944.

The centennial of the publication of *Leaves of Grass* in 1955 was widely celebrated in the Soviet Union. Fiction Publishers issued a volume of Whitman's selected poems as well as a small volume of selections from *Leaves of Grass,* this last in a printing of 150,000 copies. New editions of Chukovsky's translations of Whitman's prose and poetry and the first Soviet monograph on Whitman by Maurice Mendelson, a leading Soviet scholar of American literature, were published. Articles and essays on Whitman appeared in nationally circulated newspapers and magazines like *Pravda, Izvestia, Literaturnaya Gazeta* and *Inostrannaya Literatura* and in numerous regional periodicals.

A current translation of Whitman runs to more than 320,000 copies in six of the languages spoken in the Soviet Union.

In the sixties Soviet publication of Whitman's poetry and critical studies of the poet were very considerably supplemented. In 1965 Professor Mendelson published his new monograph, *The Life and Work of Whitman,* the most comprehensive study of the American poet in Russian. Professor Mendelson's analysis is a work of rare scholarship and offers new insights into the poet's life and work in terms of our space-age ideals. The study takes into account the latest research of American scholars.

A year later Kornei Chukovsky's *My Whitman* appeared. It includes poems and prose in translation, a biographical sketch, a critical review and notes on the reaction of the Russian reader. This book, the fruit of almost 60 years of Whitman study, was written with profound affection for the American poet. It contains many vivid and colorful touches usually shunned by the literary historian but essential to give the reader a tangible, flesh-and-blood conception of what the poet was really like. Chukovsky's distinguished mastery as a writer has made his Whitman "our Whitman."

the democratic tendencies in his poetry have so vast, so universal, so cosmic a scope?

He saw democracy as an endless chain of generations treading a thousand-year-old way. He accepted democracy in its planetary aspect:

> Lo! the darting bowling orb!
> Lo the brother orbs around! all the clustering suns and planets;
> All the dazzling days; all the mystic nights with dreams,
> Pioneers! O pioneers!
>
> These are of us, they are with us,
> All for primal needed work, while the followers there in embryo wait behind,
> We today's procession heading, we the route for travel clearing, . . .
>
> *"Pioneers! O pioneers"!*

Never did Whitman question the grandeur of ordinary people, the toilers and the creators; never did he lose his optimistic confidence that those people would ultimately establish a radiant democratic society and that this society would sooner or later spread to all countries and make mankind happy.

He never tired of appealing for a world community, a universal brotherhood of nations:

> Come, I will make the continent indissoluble;
> I will make the most splendid race the sun ever yet shone upon;
> I will make divine magnetic lands,
> With the love of comrades,
> With the lifelong love of comrades.
> *"A Song"*

His dedication to selfless democratic comradeship was not limited by national boundaries. . . . He included in the orbit of his "magnetic companionship" people living across oceans and seas: Russians, Japanese, Germans. . . .

A short while ago some of his rough drafts were found. These papers contained a page, every single line of which was about Russia, and a few Russian words scribbled by his hand. . . .

Walt Whitman saw that the aim of his poems, their mission and basic task in propagating the idea of international brotherhood, could only be achieved if people learned to love one another in a divine, tender, and passionate way. Without this indispensable condition, he said, the finest democratic society would fail.

* * *

. . . Bringing home to every person the idea that he was no less divine, great and powerful than *any other person,* Whitman, with tremendous poetical force, acclaimed the spiritual dignity of the human personality and of Man. . . .

. . . This magnificent theme can be traced throughout his writings. From it he drew his inspiration. . . .

The new content he introduced into world poetry required new forms. Walt Whitman was a daring literary innovator. . . .

. . . I remember my first acquaintance with his poems in my early youth. His short genre sketches, drawn from nature and perceived against the background of cosmic heights and millions of ages, fascinated and overwhelmed me by their freshness. I could not free myself of their spell for a long time. The American bard used his favorite method of chaotically piling up events and facts and illuminating them with broad philosophical ideas—forever present in his poems—with particular success in the thirty-third fragment of his "Song of Myself." This long "catalogue" of unexpected, cleverly devised images was tinctured with meditations on the illusory nature of Space and Time. The images were most vivid illustrations to the radiant quality of his talent. There was something of sheer magic or witchery about them. They seemed to have been written in a trance or ecstasy. At the same time, I could not help sensing an ideal, perfect order in their seemingly chaotic conglomeration, an order suggested by the unerring instinct of a great master.

Try, as an experiment, to shuffle the images in the thirty-third fragment and alter their places. The entire structure will immediately collapse. Because, even though the author referred to these pages as "dotage" ("I dote on myself"), the entire composition complies with the strictest canons of versification.

THIS IS THE THIRD TIME since the founding of the Soviet Union that the front pages of our newspapers have carried the headline "Economic Reform." The first such announcement was in 1921, when the country was reconstructing an economy devastated by a world war and a civil war. Lenin had initiated the New Economic Policy (NEP) to rebuild the relations between town and country on the basis of free trade and to reorganize state-owned industry. "Trust," "Syndicate" and other such designations appeared on signboards. Trusts were combinations of several enterprises engaged in the same production process. The trusts formed syndicates on a joint-stock arrangement, which purchased their supplies and marketed their produce. The profit made by the syndicate was distributed among the shareholding trusts, which also covered any losses.

Lenin's Idea

The principle of complete economic accounting was first applied in 1921. Trusts and syndicates were taken off state supply and budget subsidies. They now had to find customers for their goods and suppliers of raw and other materials on the free market. Moreover, some trusts were authorized to look for not only domestic but foreign customers.

"Communists must learn to trade!" was the idea that motivated this first economic reform. Economists and newspapermen in the West were certain that "Russia has started getting back to capitalism!" They were altogether wrong, of course.

The 1921-1923 reform served its purpose. The war-ravaged economy was quickly rehabilitated. Trading was brisk and there was even a certain abundance of foodstuffs and consumer goods. In 1929 the country launched its First Five-Year Plan for industrialization and with it the second economic reform. Trusts and syndicates were abolished. The enterprises themselves became the basic economic link, while People's Commissariats (ministries), top administrative agencies and supply, research, design and other agencies existed independently. They were all financed out of the state budget and responsible only to the state.

Economic accounting was limited to current expenditures for the production and sale of goods. The state gave the plants and factories their equipment, machines and, of course, their premises free of charge. Enterprises took no part in financing the training of specialists and paid nothing for the technical research they applied. On the other hand, the state could at any time appropriate any portion of the plant profits, redistribute its assets and change its production assignment. Economic accounting among the production units themselves was also discontinued. Since the enterprises had no significant measure of independence either from other production units or from the state, their efficiency could not be measured objectively, through economic indicators. Profits did not serve as a criterion for measuring the contribution of an enterprise to the national wealth.

Foreign economists said of the second economic reform that it violated basic managerial principles. They predicted failure for the five-year plans and the collapse of the Soviet economy. But nothing of the sort happened. In the course of its three prewar five-year plans (the last one was not even completed), the Soviet Union created a heavy industry and a defense industry that had taken the major capitalist countries almost a century to build. The essence of the 1929-1932 reform was a stepped-up rate of industrial development.

The elimination of complete economic accounting in the thirties was not due to incompetence or to someone's evil design. It was a deliberate measure. Even back in the thirties the departure from economic accounting principles was considered a temporary phenomenon. In 1936 Sergo Orjonikidze, who headed heavy industry, wrote an article for *Pravda* proposing that the authority of enterprises be extended, that they be required to operate by standard economic accounting principles, and that they be allowed more initiative. He was anticipating some of the fundamental principles behind the present, the third, economic reform.

New Stage

This new reform began in 1966, when the first 40 enterprises changed over to a new system of economic management. By 1967 the number had increased to over 700. And in 1968 the transition of the three key sectors of the national economy—industry, building construction and transport—to the new managerial system was complete. This added up to several tens of thousands of enterprises. By the end of the present five-year-plan period (1970) all state farms, trade and public food-catering enterprises, municipal services and research and design institutions will be operating by the new managerial principles. The third economic reform will be in effect throughout the country.

The present reform was due to the expanding scale of production and to changes in the production structure, as well as to the new demands which the scientific and technological revolution makes upon economic management methods. Commodity-money relations are now used to expedite scientific and technological progress. The connection between the first and third reforms is clear. What we have here is the further development of the managerial principles applied by Lenin, principles that had undergone practical testing as early as the twenties.

ECONOMIC REFORM: PROGRESS REPORT

By Leonid S. Blyakhman
Doctor of Science (Economics)

Foreign observers are sometimes at a loss to understand why the present economic reform in the USSR differs in many respects from the economic reforms now being carried through in other socialist countries, though they all have the same content and the same goal. The difference is explained by the objective differences in managerial conditions and the differences in the national economies of the several countries.

In the first place, the branch structure of industry is not the same. In the Soviet Union radio engineering, electronics, aircraft building, shipbuilding and heavy machine building, distinguished for complex technical preparation of production, play the leading role. The interval between the beginning of research and the production of the first machine or instrument can be months, sometimes years. Most of the goods produced by these industries are not intended for the general market but are manufactured to fill orders placed by the state for the country's defense needs or its scientific institutions. For the enterprises that manufacture these goods, changes in market conditions and current investigations of demand have no marked significance. Long-term plans that foresee developments in their various branches of science and technology are much more important to them. These factors would, of course, affect the nature of the reform in the Soviet Union.

Our country covers a vast territory. The geographic factor alone has an immediate effect on the economic management mechanism. For instance, the cost of a kilowatt-hour of electricity in one part of our immense country may turn out to be 100 times higher than in another, the cost of a ton of oil 30 times higher, of a ton of coal or cement 10 times higher. If the production cost of a factory in Khabarovsk (the Soviet Far East) is double that of a plant in Leningrad, this obviously does not mean that the personnel of the latter plant should be rewarded and that of the former penalized. Variations in profitability may be even less reason for closing down an enterprise. The several thousand miles' transportation cost to ship an item to a distant area may be much higher than the cost of produc-

ing it on the spot. The distribution of the production program among hundreds of plants scattered over the great expanses of our country is decisive for us. These problems worry the economic planners of small countries—the socialist countries of Eastern Europe—much less than they do us.

In our country the identical item can be manufactured by dozens and even hundreds of enterprises from Kaliningrad (the westernmost part of the USSR) to Khabarovsk. How are we to coordinate the operation of, for instance, the 500 enterprises required to build a modern ship, or of the 300 plants required to manufacture an automobile? That is why it is so much more difficult to put through economic reforms in our country than in the other socialist countries of Europe.

Further. Soviet enterprises manufacture the bulk of their products for the home market. Let us assume that the construction of a new refrigerator manufacturing plant is being planned. To make using up-to-date production processes worthwhile, the enterprise must turn out no less than three or four million refrigerators a year. No European socialist country can build such a plant without looking into the possibilities of selling its refrigerators on the foreign, including the capitalist, market. But our home market can take care of the output of several such plants without any difficulty.

All of which leads us to the conclusion that socialist countries must study each other's experience but must not mechanically copy another country's practice. If something works well in small countries, we have no guarantee that it will work for us. At the same time, the failure of one or another experiment elsewhere is no reason for us to reject it.

Our present economic reform stirred up the same kind of talk abroad as NEP once did, that we are "returning to capitalism," especially since we have allegedly resurrected the profit motive. But since we have no privately owned means of production, the only similarity between our profit and capitalist profit is the word itself. This is a new wine in the old wineskin. In a socialist economy profit does not come from profiteering on prices, exploiting dependent countries, cutting pay rates, and the like. Profit in our country plays a fundamentally different role; it becomes the property of society and not of private individuals. No one in our country can use his personal income, no matter how large, as capital, *i.e.,* as a source for getting another, and this time unearned, income. There is nothing parasitic in our profits.

Initial Results

Among the first real results of the reform is a sharp reduction in the number of centrally planned indicators. There used to be 40 of them; now there are nine. The plants and factories themselves estimate how many workers they need, what their average wages will be, and the cost of production. One idea behind the reform is that enterprises have the authority, within the limits of their former payroll, to raise wages by reducing the number of workers. And here is the result: In 1967 the productivity of labor increased by seven per cent, while in the years from 1961 through 1965 it had been increasing at an annual rate of no more than five per cent. In the period from 1959 through 1965 the employment of new labor power accounted for more than a third of the total production increment in industry, whereas in the years from 1966 to 1968 only a fifth of the increment was due to new labor power. Expanded production now comes more and more from higher efficiency rather than from a greater number of workers.

And here is another result of the reform: The criteria for estimating the efficiency of enterprises have changed. Previously only overfulfillment of the plan assignment was considered a good showing. This criterion had its merits also; it promoted plan discipline. Today we use three efficiency criteria. One of them is the dynamics of economic activity, *i.e.,* better production showings than last year. For the first time in their business careers, executives want larger plans, not smaller ones. Another new criterion is level of economic activity, the comparison of the actual results with a standard that is uniform for all and stable for a number of years. This was a first step in stimulating our enterprises to compete. But factories within the same industry have proved to differ so markedly in their operation that no uniform standards could be fixed. However, that problem will be solved in the near future. The overfulfillment of the plan is the third and least ponderable criterion of efficiency.

As a result of these new criteria for judging their efficiency enterprises have stepped up the rate of growth of profits and the marketing of goods. The annual increment in profit under the new managerial conditions comes to 20-25 per cent, more than double the average growth rate in the period from 1962 through 1965.

The third product of the reform is that the nature of the stimuli has changed. Formerly the tail wind of bonuses used to push the enterprise toward three reference points: gross output, commodity output and cutting production costs. However, these points often made the enterprise swerve off the fairway. They paid very little attention to the extent to which the goods met consumer needs. There was a time when this wasn't so serious because the scarcity of goods automatically meant that everything would be sold. But now things are entirely different in our country, and we are thankful that they are.

Neither was there any account kept of the assets plants and factories received from the state budget. Enterprises competed with each other to get as much as possible from the state. The more machines they had, the more goods they could manufacture and the lower their cost of production would be. Managing executives were always maneuvering between production cost and quality. Economic considerations called for cutting costs at any price, while conscience appealed for a better quality of goods, even if it involved additional outlays. The new criteria for stimuli—marketing, profitability and profit—have done away with many of these contradictions. Every surplus ruble received from the state leads to lower profitability. The Procrustean bed of cost does not interfere with the enterprise's improving the quality of its goods. And the result? In 1967 the drop in output per ruble of fixed assets, which had for a decade and a half been undermining the foundation of our economy, was stopped. The sale of goods started growing faster than output.

The reform brought another important advantage. A portion of the wage fund is now paid out of the profits made by the enterprise itself. In 1967 this part topped the billion-ruble mark. The result is that the rate of the annual increase of earnings has doubled, from three per cent a year to six per cent a year.

Pandora's Box

In the first two years of the reform we have been able to solve many important problems. But new ones keep cropping up. Professor Yevsei G. Liberman, the prominent economics expert, suggests this grouping: those problems that derive from the unfinished character of the reform itself; those that derive from the conservative management and thinking of some executives, planners and financiers; and those that derive from the shortcomings of the reform mechanism per se. This classification is probably the most convenient for analysis.

In 1967 funds for production development, for social and cultural measures and for housing construction which, the reform says, come from the profits of an enterprise and belong to that enterprise, added up to about a billion rubles. The enterprise may spend these funds to purchase equipment and build new shops and housing. However, less than half these funds were actually used. The reason was that there were no contractors to do the job. Builders still operate along old lines. For them a new contract means nothing but additional worries. Supply agencies also operate much as they used to: A customer's solvency does not interest them. The only thing important to them is whether the customer was able to get the required materials allocated to him. The research and design agencies, which were not held financially responsible for low-quality projects and recommendations until now, also used to put spokes in the wheels of enterprises that had changed over to the new managerial system. All this affected efficiency. These problems will be solved when all sectors of the national economy have changed over to the new system.

Repatterning the style and mentality of some executives and breaking deeply rooted habits will take much more time than did the alteration of bonus indicators or account forms.

Some elements of the managerial mechanism programmed in the course of the reform have not stood the test of time either. Some things that looked smooth on paper have proved much less so in practice. One concerns the relations between enterprises and higher-level economic managing bodies. Till now the top administrative agencies and ministries enjoyed the right of command only but had no financial resources of their own and were responsible to no one for the economic results of their work. Today we already have about a dozen top administrative agencies operating on an economic-accounting basis, and now they are not just distant and formidable commanders to their subordinated enterprises, but financial headquarters with their own funds. It will obviously be necessary to get all top administrative agencies and then the ministries operating by economic-accounting principles. It is not orders, but a system of scientifically substantiated economic norms that must serve as their main instrument.

No less acute are the problems involved in relations among the enterprises. The supplying of materials and equipment is still our economy's vulnerable spot. How can this chronic weakness be treated? We have not found an adequate answer yet.

No radical changes have taken place in setting output norms and pay rates. It is only once a year, when the workers get their thirteenth month's pay, that most of them realize the material advantages of the new system. The absence of precise methods for appraising the contribution every shop, section, team and individual worker makes to the factory's general profits is to blame for that. This is a problem of cost accounting within the plant.

Another important experiment was carried out in 1968 to modernize a most vulnerable component of the new economic mechanism—the new principle of distributing profits between the enterprise and the state. The collective of the enterprise retains the entire profit minus the payments into the state budget stipulated by law.

All the problems of the reform are closely interconnected. To introduce a new system of profit distribution, we need economic norms with a long term of validity. Let the personnel know that today, tomorrow and a year from now they will have at their disposal, say, a third of the profits regardless of their size—be it one million rubles or five million. But this principle cannot be applied to small enterprises, and we still have a great number of those. Their profits vary sharply from year to year; the purely superficial reason for that—a change in their output assortment or a change in geographical market relations—affects the results of the staff's work to a much greater extent than do the efforts of the staff itself. The only way out is to amalgamate small factories.

The reform has given rise to many problems. Our economists still have to write the fundamental work treating all these problems in their unity and interconnection.

Courtesy of the magazine Neva

CHESS ROBOT VS. GRANDMASTERS

By Mikhail Botvinnik
Doctor of Science (Technology)
Former World Chess Champion

THE EFFORT to create a chess robot has a history. First the mathematicians tackled the problem. They tried to design an artificial chess player that did not resemble man at all. They devised methods to simulate a chess player's thinking and programmed them.

That approach was not especially successful though it was a step forward. In view of the game that the machine played against the readers of the newspaper *Uralsky Rabochy,* which it lost in quick order, we would appraise the machine as a second category player at the best, or a strong third category player at the least. That level of play by a robot is not high enough, obviously.

Why were not mathematicians able to create a stronger chess player? Because their so-called tree of selection method formed the basis of all the programs.

To explain: White analyzes his first move, to which Black has, let us say, 30 replies. This means that 30 "branches" spring up at once on the "trunk." Then it is White's turn to move, and again on each branch appear 30 "branches," and so on almost endlessly. Thus, one would have to work through an infinite number of variations to pick the best move. This method is called "tree of selection" in mathematics. But keep in mind that this is not the only tree. A certain position may produce 30 trees simultaneously with a tremendous number of branches —a whole forest! That was the kind of dense forest mathematicians had to deal with in drawing up chess programs. Although numerous clever solutions were used to limit the number of combinations, most of the programs tried to cover in all the branches.

But as a matter of fact any chess player knows that he does not consider all the possible variations. He singles out the important moves. Therefore, if we want the artificial chess player to play like a master, a fundamentally different solution than the mathematician's has to be found.

First of all we have to formulate the method man uses. For good or bad, thus far only man plays chess. Most chess fanciers believe that our grandmasters play a good game. What we must do then is build into the machine the same method of play a grandmaster follows.

Until now only mathematicians have worked at the problem, and they did not know nor could they be expected to, how a grandmaster plays chess. What is new about my approach is that it is a chess expert's rather than a mathematician's. But before I make my point, I want to pose a question:

"What is the purpose of 'unprecise play' in chess?"

Everyone knows that the purpose of precise play is to maneuver the opponent's King into a hopeless position to checkmate him. But on the way to that long-range goal the chess player tries for some short-range goals. These more immediate goals are the purpose of what I call "unprecise play." This purpose has been defined by mathematicians in different ways, but the definitions were always too vague and indefinite.

My very simple assumption is that the purpose of "unprecise play" is to gain ground. But this should not be oversimplified to mean that ground must be won immediately. What we must do is create the conditions for winning ground in the future.

If my assumption is correct, if the purpose of "unprecise play" is to gain ground, then everything in chess begins with an attack. This attack (or, to be more exact, its path) is the trunk of the tree we shall call "the tree of paths."

Therefore, before occupying ourselves with the "tree of selection," or to be more exact, before creating a forest of "trees of selection," we must create the "tree of paths" or even a whole forest of "trees of paths."

When man plays chess, first he considers the closest attacks that require the least number of moves. Each attack is that very chief trunk of the "tree of paths." But the player also takes into account the supporting attack by other pieces, as well as the path of the defense (negation). These are already branches of the "tree of paths."

But if very distant attacks are to be contemplated, there is the danger that the "tree of paths" will sprout and become infinitely big and branchy. I suggest, therefore, that the "tree of paths" be limited to a definite number of "half-moves" or advances made by the attacking chessman to destroy the one attacked. In this case the "tree of paths" becomes finite, and the variations something that man, and especially the machine, can cope with. When, however, in erecting the "tree of paths" we limit the range of attack, something happens which all mathematicians are familiar with—the "tree of selection" is erected, and the problem turns out to be usual, assuming the evaluation of the position is overlooked.

As distinct from previous efforts, I propose to make an assessment of the position on the basis of the "tree of paths." What does this mean? In the process of play the "tree of paths" changes its form continuously. New chessmen and new squares appear in its sphere of influence, while some of the men and squares drop out of the game. The evaluation of the position depends on this question: In whose favor does the mathematical reflection of the forest of the "trees of paths" change?

In programs based exclusively on the "tree of selection" it is sufficient to know only the rules for the moves of the chessmen (and, of course, their comparative values) given in a textbook. Because if all the movements are to be considered, it is sufficient to know how one or another chessman moves.

In the creation of the "tree of paths," however, the playing machine has to raise its qualifications. It must be capable of more than "shifting" the chessmen; it must move them intelligently, as a chess master does.

For instance, the Knight is to be moved from the QKt1-square to KB7-square. When a novice learns to play chess, he considers all the routes until he finds the shortest. But the chess master does not waste time on this senseless work. After all, in every game that the Knight is shifted from the QKt1-square to the KB7-square, the route is the same. It is true, of course, that other chessmen may block the Knight's movement, but the method of finding the shortest path is invariable. For the master this is simply a standard operation. And these standard operations have to be elaborated also for the chess robot.

I recall a discussion several years ago at which programmers claimed that the machine is incapable of shifting chessmen over the board the way man does. That is when I understood what Professor Max Euwe, ex-champion of the world, had in mind when he declared that the machine would never be able to play a really good game. The Dutch grandmaster explained it in this way: "Man sees the entire board, while the machine can only consider the moves one by one."

But the programmers, including my friend Euwe, were mistaken. It turned out that it was not very difficult to teach the machine to shift the chessmen, *i.e.,* to carry out standard operations. And it can do that much better than the player:

For instance, we set the machine the question: "What is the shortest path for the King to shift from the QR4-square to the KR4-square?" In one-tenth of a second the machine indicated 393 ways. Man cannot hope to match speeds like that.

Thus the selection of the route, the creation of the "tree of paths," and the calculation of the squares' functions are all standard operations playing an auxiliary role and designed to serve only one aim—the creation of a mathematical reflection of the position.

The solution of this problem —the creation of a mathematical reflection of the "tree of paths"—was tackled by V. Butenko, a young and capable scientist of the Siberian Branch of the USSR Academy of Sciences. But it turned out to be a hard nut to crack. When we teach the machine to move only one chessman while all the rest remain in their places on the board and play a passive role, with only the one being shifted active, then it is comparatively easy to draw up this program. And Butenko disposed of that fairly quickly.

But the mathematical reflection of the "trees of paths" should take into account all the chessmen getting into play on the given horizon (the set range of the attack), all the squares which the chessmen pass without stopping or with a stopover, and all the assessments of the local battle on each of these squares on the path. If to all this we add the fact that in every position there can be several "trees of paths" and that all of them interconnect, we can see how much more difficult the programmer's task becomes. We can say now that the most difficult part of the entire program is the mathematical reflection of the "tree of paths."

Butenko toiled over it for several months. Not surprising, for no such problem had ever been posed to a programmer.

Then he came to Moscow. Now he is adjusting the ready program at the computer center of our institute. If everything goes well, we should have our program in action soon. I count on our machine's playing at a master's level in less than a year.

Creating an artificial chess player is not an end in itself. The experiments in modeling man's mental activities will help develop cybernetics. The conclusions will be useful in economic planning and management and in many other areas of human activity.

Courtesy of the newspaper
Moskovsky Komsomolets

PYOTR KONCHALOVSKY



Self-portrait.

LIFE-ASSERTING ARTIST

By Vasili Rakitin
Art Critic

PYOTR KONCHALOVSKY commands the respect of even the most carping of his critics; his works have come to set standards for painting. They are not only a joy to behold, they have much to teach us. This Russian artist mastered the lessons of Van Gogh and Cézanne. He went abroad frequently from 1910 well into the 1920s, showing in the most important exhibitions of those years. He was a friend of Matisse, Picasso, Le Fauconnier and of Emile Bernard, who wrote the famous book on Cézanne. Emile Bernard admired his paintings.

What Konchalovsky learned from contemporary masters he blended with what he knew of the traditional Russian painters and the old classics. Russian toys and the colorful signboards of Moscow shops and inns also influenced his work. As though to provoke those people in Konchalovsky's country who labeled him the Russian Cézanne, the French talked of the "Slavic soul" of his art.

Born in 1876, he was schooled in an atmosphere of heated controversy on art. As a youth he saw many great Russian masters at work: Mikhail Vrubel, Konstantin Korovin, Valentin Serov and others. He studied hard, stubbornly, made inordinate demands on himself and began to exhibit regularly only from 1907. He traveled through France and Spain with his wife and her father, the well-known painter of historical canvases Vasili Surikov. Spain particularly attracted Konchalovsky, and it was there he did the first pictures that brought him to public attention: landscapes and bullfight scenes.

Russian painting of the 1910s and after was like nothing so much as weird mosaic: It was constituted of painters who were poles apart—from the huge solemn canvases of the academicians to the cool geometric suprematist compositions of Kasimir Malevich. Konchalovsky and his friends were the first to precipitate "a revolution in painting," to launch an "attack upon old conventions." They gave their group the frivolous name "Jack of Diamonds" and showed the work of Ilya Mashkov, Robert Falk, Aristarkh Lentulov, Mikhail Larionov, Natalia Goncharova, most of the original painters of the period.

Their pictures were striking and their techniques unusual. In 1911, for instance, Konchalovsky showed a portrait of the artist Georgi Yakulov at an exhibition in St. Petersburg, a loud and solid portrait reminiscent of a signboard. Though many liked it, no one would hang his own work alongside; it made any neighboring canvas look pallid.

Konchalovsky painted still lifes that were both sensitive and sensuous. Here one could see the flesh and soul of things and rejoice in this augmented world created by an artist.

Prior to the 1917 Revolution Konchalovsky held a leading place among the artists of Russia. The Revolution and the Civil War did not frighten him, as it did so many others. He accepted the new times, for he liked to work freely without obligation to a Maecenas. Great things were happening and art could not stand by. Konchalovsky scrutinized the new life and the character of the people under these altered conditions. Searching for simplicity and clarity, he went back to the classics. Some of his canvases of the time are unique paraphrases of Rubens and Rembrandt.

For three years he worked hard near the ancient Russian city of Novgorod. It was there he did his series of paintings and landscapes of that legendary area. Everything in those works was simple, strong, austere. Exhibited in Paris and partly in New York in 1929, they were received with interest by the foreign critics.

Responding to accusations of hedonism leveled by critics in the 1930s, he tried large thematic canvases. Though not always successful, he felt that there would be something missing in his work without them. He tried to portray life in all its ample proportions, though such prolixity often worked to his detriment. In those years, however, he painted many fine canvases, among them his cycle of lilacs (the last was finished shortly before his death in 1956). It was a series dedicated to the intricate and palpitating life of nature.

Konchalovsky had the faculty of seeing deeply into ordinary things. One of the best of his later paintings, "The Floor Polisher" (1946), depicts a man whose bronze body is stripped to the waist. Wearing wide green trousers, he is polishing a floor with his foot on a brush. What caught Konchalovsky's interest? Any other artist would have been satisfied with a rough sketch, if the figure had caught his eye at all. It was the sheer pleasure of physical work Korchalovsky was trying to picture. The canvas is gaily beautiful. The floor polisher seems to be doing a mad, joyous dance. This note of courage, this love of life is what is so fascinating about this artist.

He trusted his medium. "The chief thing in painting," he said, "is to paint, for that is how the idea, the thought, the theme is brought home to the viewer."

Konchalovsky was a born painter. Painting was his reason for existence. In the course of his long life he produced



Palette and Oils. Still life. 1912.

1,700 paintings—5,000 works in all, if one adds his drawings, water colors and sketches for theater sets. Many of his contemporaries thought he worked easily, almost casually. But he never approached his easel unless he had a clear idea of his future picture in mind. Nor did he ever treat an interesting thought with dry precision. An impulsive and emotional man, he improvised as he went along. That is what gives



Portrait of the Artist's Daughter

Fish Market, Novgorod. 1928.



the impression that his pictures came easily, that they were born without effort.

You cannot trace the history of events in his works. They tell the emotional rather than the factual story of his epoch; they chronicle the feelings of his contemporaries. The words of Eugene Delacroix aptly fit his canvases: "Bold relief—powerful vitality!" The power of his painting, its almost intangible abundance of color convey the intensity of his feeling for life.



Portrait of Producer Meyerhold. 1938.





Meat, Game and Vegetables *Still life, 1937*

DO THEY SPEAK YIDDISH HERE?

Solomon Rabinovich's notes on his trip with a group of Jewish tourists from the United States are reprinted from Sovetish Heimland, a literary monthly published in Yiddish in Moscow.

MOSCOW is always full of visitors. In every hotel you hear the hubbub of a dozen different languages.

I was standing in the lobby of the Ukraina Hotel when I heard someone say in Yiddish, "Joseph, where did you put that valise?" It was the group of Jewish tourists from New York, Miami, Chicago, Los Angeles, Montreal and Toronto that I had been waiting for.

I hardly had time for a few words of greeting when I was showered with questions:

"Can we see our relatives?"

"Will we get a chance to meet the editors of *Sovetish Heimland?*"

"Do you speak Yiddish here?" asked one of the visitors in English.

"Listen to him! He doesn't know a word of Yiddish himself. . ."

"That doesn't make any difference. I'm interested in the problem."

"He just stepped over the threshold, and he already has a problem."

"Leave him alone. Because a man limps, does that mean he isn't interested in walking? He may not speak Yiddish himself, but should that prevent him from putting in a word for the study of Yiddish in the Soviet Union?"

Everyone burst out laughing.

This was my first meeting with the Jewish tourists. I spent 10 days with them in Moscow, Vilnius and Kiev. Here are some of the notes I made.

An Interview with a House Painter

Vilnius. One of the narrow streets in the old part of the city. The visitors are looking around, exchanging impressions.

"I saw streets like this in Rome," says one.

A passer-by comments, "Don't be in a hurry to make comparisons. Rome is not Vilnius."

"Are you a native?"

"What do I look like?"

The group surrounds him.

"So you live in Vilnius?"

"Yes, I've been living here for 20 years. But I come from Kaunas. My name is Nohem Brener."

"And how are things?"

"I'm thankful that I have nothing to complain about. I'm a house painter. I make 160 to 170 rubles a month. I get along."

"What sort of apartment do you have?"

"Two rooms and a kitchen."

"How much rent do you pay?"

"Eight rubles and 50 kopecks a month. About nine dollars and 35 cents in your money."

"Nine dollars?!"

"I live not far from here. Would you like to drop in for a minute?"

A Talking Letter

Late one night engineer Ernie Rymer from New York called me.

"Come to my room; they're here."

Rymer introduced us.

"Jonas Ruzgys," said the man.

"Stase Ruzgiene," said the woman.

They had come to inquire about Liza Eisenberg, who moved to America after the war.

"How is she getting on there?"

"Listen to her letter," said Rymer and switched on the tape recorder.

"My very dear friends, I send you my love from my very heart. I embrace you and kiss you many times. Ritochka sends her regards. She will be a mother soon. Your Liza."

The tape recorder stopped. It was very quiet in the room. Stase wiped away a tear. Her husband put his arm around her shoulder.

"Now, now," he said, "calm yourself."

But his voice showed that he was moved too.

"You see," said Jonas Ruzgys, "we get letters from Liza every so often, but this is the first time in 20 years that we've heard her voice."

And he told me this touching and tragic story.

It happened in 1942. The Nazi hangmen were clearing out the ghetto. They were picking up the children to send them to Paneriai to be killed. Liza Eisenberg met Stase Ruzgiene then. They had only a few minutes to talk, but enough so that the Lithuanian woman left the ghetto with Liza's child. Little Rita was only two and a half years old at the time. Later Liza joined her. They went through many trials. If they were found out, it meant death for everyone concerned. Jonas made a secret hiding place for Liza and her child. They shared their last piece of bread, trembled together every time there was a knock at the door. The waiting was long and painful. At last they were liberated.

I learned that Jonas and Stase had saved several other Jewish children as well. Marik Petuhauskas was only 11 at the time. For a long time they racked their brains how to get him out. Stase got this note to people in the ghetto: "Put him in a child's coffin as if he had just died, and after dark carry the coffin to the Jewish cemetery. I'll be waiting at the grave." She took the boy home, kept him there for two days and then Jonas brought him to a relative in the country.

"And where is Petuhauskas now?" I asked.

"He's a father himself now and lives in Vilnius. He's a theater critic, with a Master of Arts degree."

"Thank you for your kind heart!" said the engineer from New York and kissed Stase.

"It was nothing extraordinary. There are Lithuanians who saved many more people than we did."

The tape recorder was switched on again. Jonas and Stase sent a letter to Liza and Rita, an invitation for them to visit their native Vilnius.

Eduardas Miezelaitis

Before flying from Moscow to Vilnius, the Americans had asked me to arrange a meeting for them with Eduardas Miezelaitis.

"I'll try. But why do you want to see him so much?"

"We read his moving foreword to the diary of Masha Rolnikaite *I Must Tell About This.* And then we've heard that he's a great admirer of Jewish literature."

The meeting took place at the Neringas Hotel. The famous Lithuanian poet brought a friend with him, the well-known Jewish poet Hirsh Osherovich. There were no official speeches, just talk about literature and peace and the Vilnius Jewish folk theater.

Eduardas Miezelaitis said:

"Jewish literature has always been very close to me personally. I've always felt a kinship with its humanistic and progressive emphasis. Many of the Jewish writers in old Lithuania were my friends, and I have many friends among the Jewish writers of today's Lithuania. Together we are building our Soviet international culture."

Writers Club

At the Writers Club in Kiev the American guests had dinner with Ukrainian, Jewish and Russian writers. Abraham Lekhovitsky, leader of the tourist group, said that before coming to the club they had been to the Shalom Aleichem house in Krasnoarmeyskaya Street.

Yuri Smolich, a Ukrainian writer, told them that four volumes of Shalom Aleichem's selected works in Ukrainian translation with a foreword by Nikola Bazhan, a prominent Ukrainian writer, were being used by the Kiev Khudozhestvennaya Literatura Publishing House. Three of the volumes have already been published.

"We cherish Shalom Aleichem's legacy," he said. "It is one of the treasures of world culture."

Zinovi Tolkachev, who has done a series of Shalom Aleichem drawings, was also at the Writers Club dinner. He told the visitors that he had made some new illustrations.

That same day the Iskusstvo (Art) bookshop on Kreshchatik Street sold out all the copies it had of an album of Tolkachev's illustrations, as well as Grigori Muravin's book on Shalom Aleichem. They were bought up by the American tourists.

The Witness

Early in the morning we visited Babi Yar and laid flowers on the graves of the Jews who were tortured to death there.

On the way back to the city I thought of Dina Pronicheva. At the end of 1967 when the trial of the 11 hangmen of Babi Yar began in Darmstadt (West Germany), the local paper wrote: "Among the hundred witnesses invited to the trial, there will probably be no one who actually saw the tragic events of 1941 in Kiev. The eyewitnesses are probably all dead."

But one witness was alive. Dina Pronicheva, with all the other Jews of Kiev, was led along the road to the terrible pit in Babi Yar. She lost consciousness and fell in. When she came to, she crawled out. It is hard to find words to describe the years of suffering she went through. Many times her life hung by a thread. But she survived. She is alive. And we were going to see her.

When we arrived at apartment 17, house 41 in Vorovsky Street, we were met by a short woman with a pleasant face and dark hair. She was having company—her daughter Lida had come to visit from the city of Kalinin. When Dina struggled to keep Lida alive in 1941, the girl was not yet four. Now Lida is the mother of two children—Natasha, four, and Victor, seven. Lida's husband, a research worker, also joined us.

Dina Pronicheva had recently returned from Darmstadt. We asked her to tell us about the trial. Her face changed. Lines appeared on her high forehead.

"What can I tell you? It was not pleasant living through those blood-stained days again."

Pronicheva's story took five hours to tell. Each word she said could have made stones weep.

"Can one forget the crimes of the fascist hangmen? And can one forgive?" she asked when she was through.

And everyone agreed that such things could neither be forgotten nor forgiven.

Some Impressions

We held a kind of press conference before the group left Kiev. The subject was "Your Impressions." This is what I wrote down in my notebook:

Etta Yasker *(Florida): I was deeply moved by the country and its people.*
Sylvia Rymer *(New York): I discovered a new world for myself.*
Max Seidel *(Pittsburgh): I have seen a country that fights for peace and justice.*
Abraham Lekhovitsky: *I liked the creative atmosphere around the magazine* Sovetish Heimland *and the fact that you publish the literatures of the different nations.*

A meeting in Vilnius (left to right): Solomon Rabinovich, group leader Abraham Lekhovitsky, and poets Eduardas Miezelaitis and Hirsh Osherovich.



THE DECLINING BIRTH RATE: WHAT DOES IT MEAN?

By Boris Rakitsky
Senior Research Worker, Institute of Economics, USSR Academy of Sciences

IN THE SPRING OF 1969 the 240 millionth citizen of the USSR was born. Since 1963 the country's population has been growing at the rate of 7,000 a day, an average of 2.7 million a year.

Generally over the past 50 years the increment has been modest—a mere 71 million. And it took all of 42 years for the population to increase from 163 million in 1917 to 209 million in 1959. The three wars intervening—World War I, the Civil War and World War II—were largely responsible. In World War II alone the Soviet Union lost 20 million lives.

In the postwar period the natural increment has averaged 10 million per three-year period.

The high rate of population growth is due primarily to the low mortality. The Soviet death rate over the past five years averaged 73 per 10,000, a record surpassed only in Japan, where it was 71 per 10,000. As for its birth rate, the Soviet Union lags behind a number of the other economically developed countries. The birth rate has been falling in the postwar years.

Births per 10,000

1940	*1950*	*1960*	*1967*
312	267	249	174

These figures came in for close scrutiny by demographers and sparked a lively discussion on the causes and possible consequences.

Most demographers and economists note that the birth rate goes down as living and cultural standards go up. It is very hard to take account of all the complex interconnections of these processes. But some of the major ones are obvious.

Leisure Time

Equal rights for women is a basic principle in the Soviet Union. We believe that for real equality you must have equality in work and in payment for that work. Most women hold jobs and are therefore economically independent members of the family. Their intellectual and social interests are much broader than those of the nonworking housewife. Many demographers and sociologists agree that the modern woman values her social and intellectual activities so much that she looks on motherhood as a personal sacrifice. And, indeed, pregnancy and nursing do change the usual course of a woman's life. Care of the child takes up most of the time the mother used to spend on her studies, interesting work, meeting people.

The wife's changed position has affected the husband, who now finds himself sharing the chores, although not yet equally. Within the family a tussle goes on for leisure time free of household chores and care of the children. Although the husband is still ahead, he is losing ground fast. His share in housework and in raising children is steadily rising. Another child means that the man, too, will have to give up time he could otherwise use for education, recreation, travel and creative work. So the husband is not inclined to be enthusiastic about more babies.

Some demographers believe that the additional strain of another child on the family budget seriously affects the birth rate. Analysis has shown, however, that the cost of raising children is a minor consideration in deciding how many to have. The birth of a child does, of course, mean additional expense. Part of the burden is shouldered by the state, which spends large sums on grants to women during pregnancy and childbirth, covers from 25 to 100 per cent of the bill for nursery and kindergarten care, and provides free education and health service. However, a child does consume a considerable part of the family budget until the age of 20. Formerly, when parents looked on their children as old age insurance, as future breadwinners, these expenses were an economic necessity. But now most old people look to their old age pension for security, not to their children. Social security for the aged has freed young people of the need to raise their future breadwinners, and the old folks of their traditional duty of keeping house for their children and looking after their grandchildren.

The declining birth rate cannot be attributed to the cost of raising children. Between 1950 and 1967 the real income per person gainfully employed doubled for wage earners and tripled for farmers. The figures are even more impressive in terms of family income, because the average size of the family has decreased while the number of working members of the family has grown. Yet in the same period the birth rate dropped by 35 per cent. Statistics show that births are lowest in those cities and regions where living standards are highest.

Is Extinction a Real Threat?

Opinions also vary as to the consequences. Some demographers see a continuing trend and say that the falling birth rate poses the threat of extinction. This, of course, is juggling with figures, not scientific prediction. Every economist knows that present conditions cannot continue indefinitely.

There are other demographers who say that the results will be apparent in some 20 to 30 years' time in the shape of labor shortages, relative "aging" of the population, weakening of defense capacity, and the like. These fears are ground-

less. There is no evidence that the wealth and power of a country, its ability to tackle economic and political problems, depend directly on the size of its population. Some demographers simply take it for granted that population must increase, and the faster the better. And to give their thesis a semblance of plausibility, they indulge in all sorts of unfounded predictions of future difficulties from a manpower shortage.

Whether the currently observed drop in the birth rate is a danger or not is of great practical importance. Those Soviet demographers who think the drop is a socially dangerous symptom recommend a new demographic policy. They propose special state grants to help families meet the increased expense of an addition to the family. They suggest that raising children be recognized as social labor and that mothers be paid for it. Most economists—I include myself among them—think all these things are quite unnecessary. I do not believe the drop in the birth rate is a socially dangerous phenomenon.

Socialism has for its goal the fullest satisfaction of the needs of the people and the rounded development of each individual. This goal has no relation to population size. It can only be reached by increasing labor productivity. There is no reason, therefore, why the socialist state should try to accelerate or slow down population growth. All that it need concern itself with—and it has been doing that all along—is creating the socioeconomic conditions which make it possible for every family to have as many children as it chooses.

Babies and Politics

In our time we have seen political regimes with an active demographic policy intended to increase their population and its share in the population of the continent. Those were the regimes which espoused the ideologies of racism, chauvinism or extreme nationalism. Witness Hitler Germany with its monstrous ideology of the "Aryan race," its genocide and its claims to world domination. Socialism condemns all such views on the problem of population growth. We put anyone who preaches racial discrimination behind prison bars. Socialism is opposed to aggression and colonial slavery. That is why increasing the ratio of its citizens in the populations of Europe, Asia or the world has never been among the Soviet Union's political goals. For us the problem is simply nonexistent.

Thus, we have no reason, domestic or foreign, to seek to increase our population, to stimulate our birth rate by any means available. Our only problem related to the birth rate is the problem of leisure. We must have a searching examination as to whether people really choose between having a child or satisfying their interests and desire for personal growth. To prevent such an alternative from arising, we must invest large state and cooperative funds to develop public services, above all for catering, recreational facilities and child care institutions. All of which would reduce the time men and, especially, women spend on household chores, so that the birth of a child would not drastically change the family's habitual mode of life, the mother's and father's usual occupations, hobbies and intellectual interests.

To sum up, then: The problem is not that the birth of a child knocks a hole in the family budget, which is seldom the case. Surveys show that a new dependent is not looked upon as an economic burden. The problem is that the child claims the parents' time. We must seek to create conditions in which a baby does not become a burden in terms of time, a hindrance to the personal development of the mother and father.

NEXT ISSUE

Andrei Tupolev, the patriarch of Soviet aviation, recently provided new confirmation for his right to that title when the design office he heads developed the TU-144, the world's first supersonic airliner. In an interview with our magazine's correspondent, Tupolev tells how the plane was developed and makes forecasts about the future of civil aviation. In a companion piece one of Tupolev's closest associates gives some highlights of the designer's life and discusses the planes produced by him. The 11 pages on Tupolev in the July issue contain photographs of the first Soviet aircraft, the planes in which Soviet pilots, including Valeri Chkalov, flew to the USA, the planes that bombed Berlin—the entire TU family, headed by the TU-144.



Animated cartoons are no longer for children only. Soviet artists started out by imitating Walt Disney, but after a while they began adding touches that were uniquely their own, and new trends in this genre were soon evident. The cartoons for adults usually combine imaginative, topical material wth satires on everyday life. A richly illustrated photo story in color deals with the methods of work of the people who produce animated cartoons in the Soviet Union.



A cultural revolution in backward Russia? Impossible! Yet before a decade had passed, illiteracy had been all but wiped out, a system of public education set up, and a mass-based art founded. A famous historian describes how, inspired by Lenin's plan to bring culture to the people, a war-torn country carried out a successful cultural revolution.

The Sovremennik Theater in Moscow is presenting *Decembrists*, *Narodovoltsi* and *Bolsheviks*, a trilogy about three generations of Russian revolutionaries, the last of whom brought socialism to Russia in 1917.

A literary critic analyzes why Hemingway is so popular in the USSR.

What kind of clothes do young people in the Soviet Union wear? What are their favorite dances? What music is most popular? A young-at-heart journalist writes about teenagers in the land of socialism.

An article on Victor Saneyev describes the training methods of the hop, skip and jump champion and tells about the views and habits of the man.

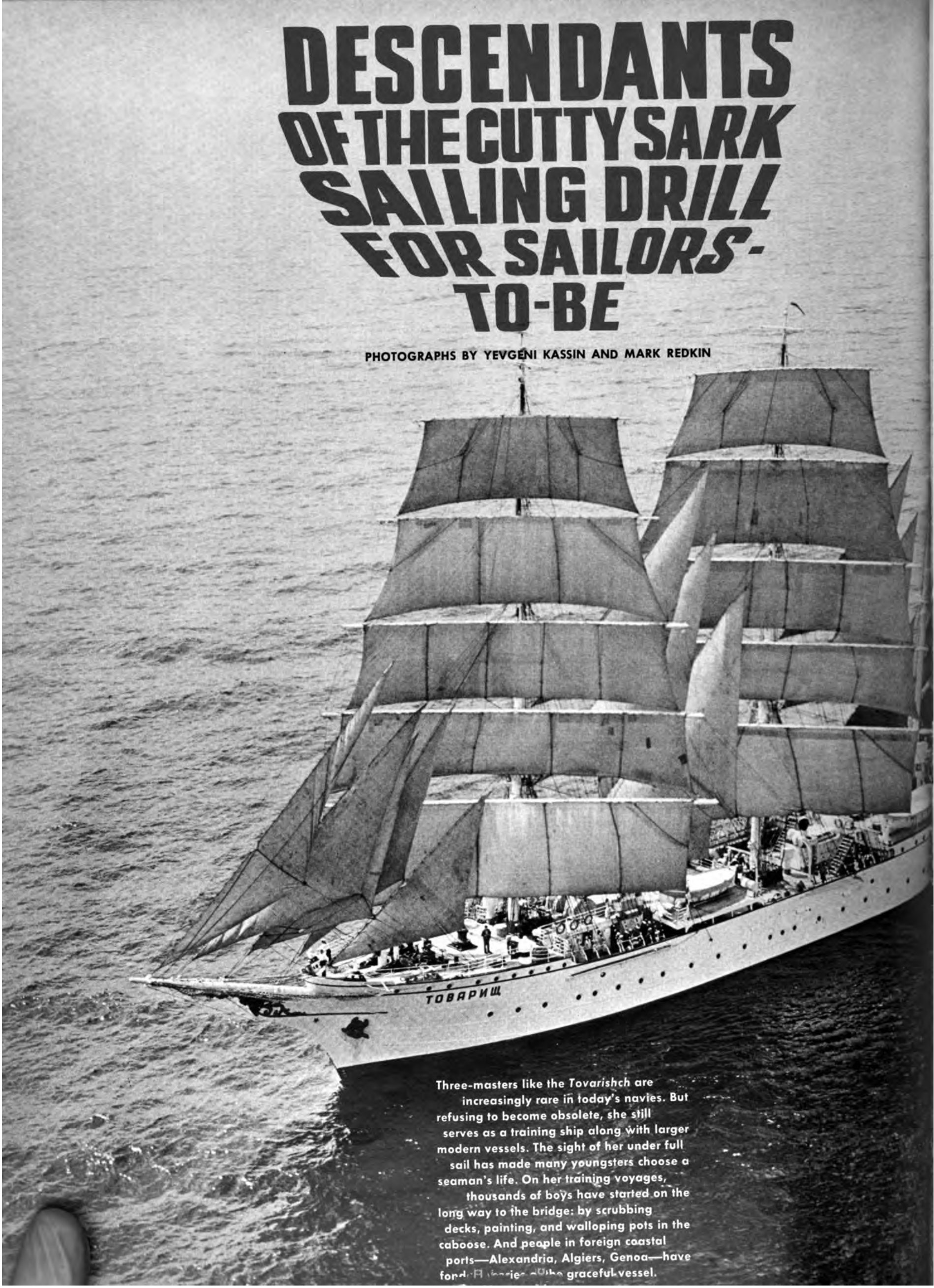
A photo story about a rather unusual profession for a woman, especially a young one. The moral of the article about a criminal investigator is that analyzing crime, tracking down criminals and searching for convincing evidence to convict them need not rob a woman of femininity.

COMING SOON

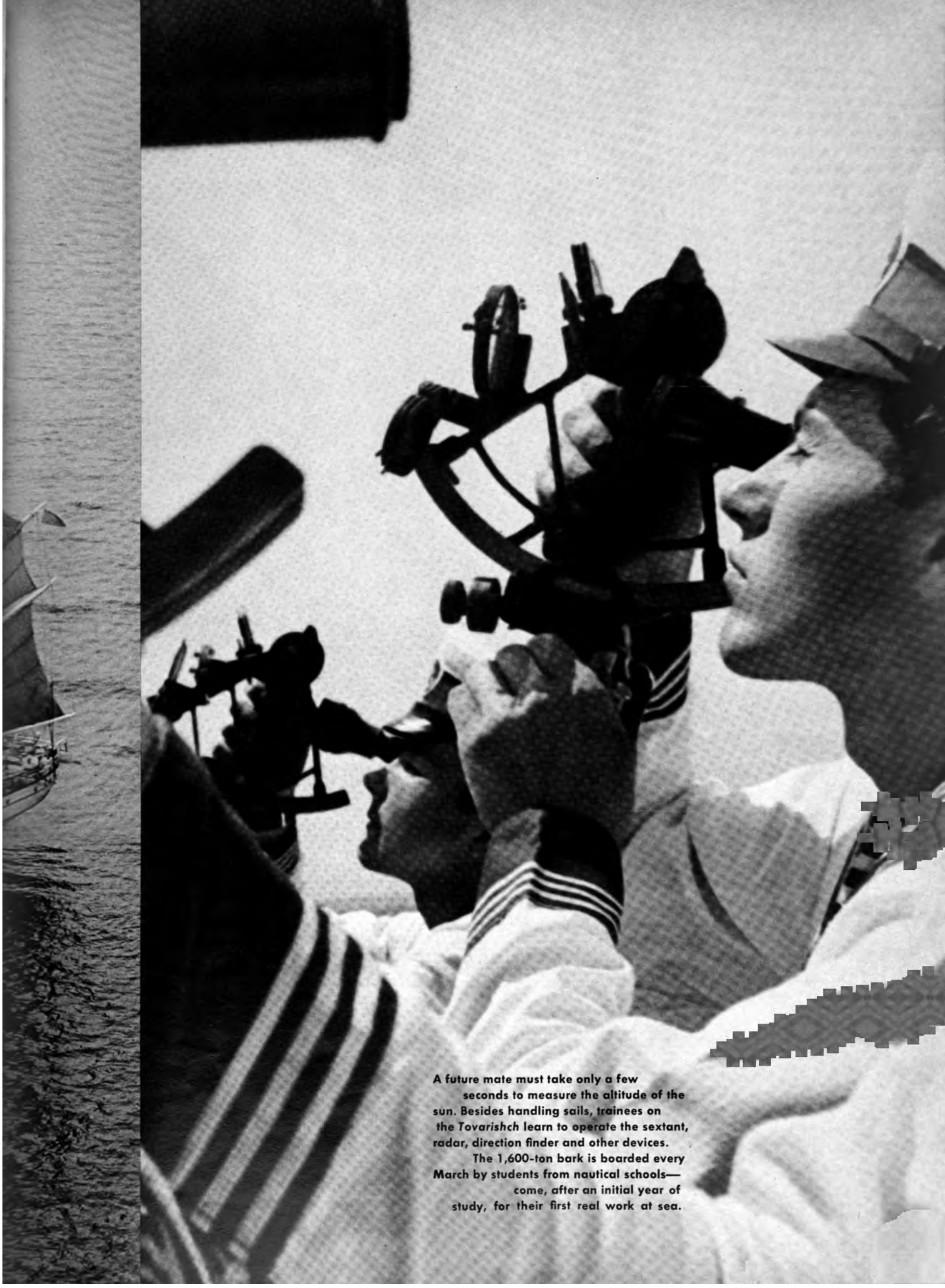
Samarkand, the gem of Central Asian architecture.

DESCENDANTS OF THE CUTTY SARK SAILING DRILL FOR SAILORS-TO-BE

PHOTOGRAPHS BY YEVGENI KASSIN AND MARK REDKIN



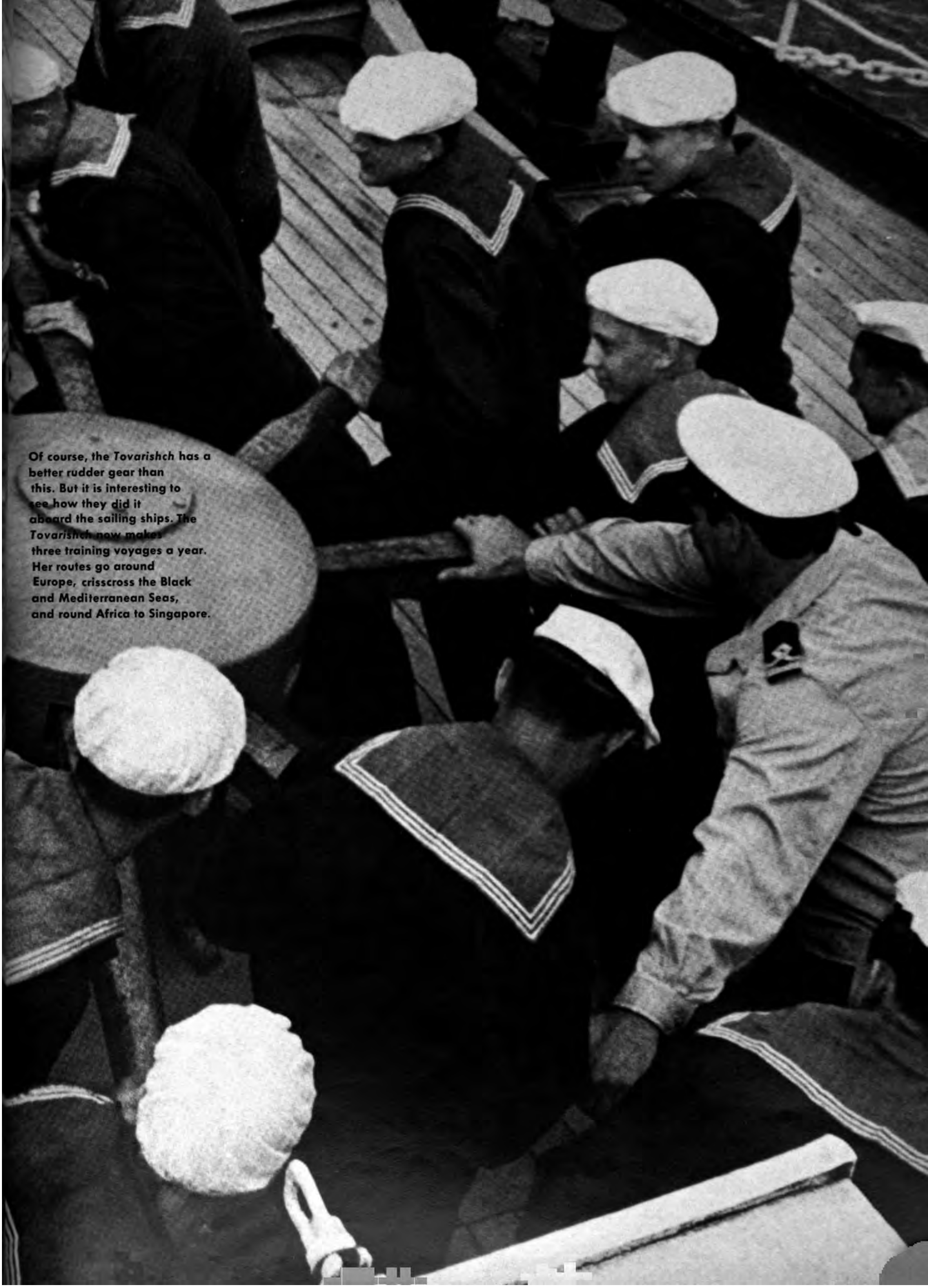
Three-masters like the *Tovarishch* are increasingly rare in today's navies. But refusing to become obsolete, she still serves as a training ship along with larger modern vessels. The sight of her under full sail has made many youngsters choose a seaman's life. On her training voyages, thousands of boys have started on the long way to the bridge: by scrubbing decks, painting, and walloping pots in the caboose. And people in foreign coastal ports—Alexandria, Algiers, Genoa—have fond memories of the graceful vessel.



A future mate must take only a few seconds to measure the altitude of the sun. Besides handling sails, trainees on the *Tovarishch* learn to operate the sextant, radar, direction finder and other devices.

The 1,600-ton bark is boarded every March by students from nautical schools—come, after an initial year of study, for their first real work at sea.





Of course, the *Tovarishch* has a better rudder gear than this. But it is interesting to see how they did it aboard the sailing ships. The *Tovarishch* now makes three training voyages a year. Her routes go around Europe, crisscross the Black and Mediterranean Seas, and round Africa to Singapore.



You rarely meet a large three-master nowadays. The sailing-ship era is long gone, and the few that remain afloat can already be counted on the fingers of one hand: the American *Eagle*, Poland's *Dar Pomorze* and the Soviet *Sedov*, *Krusenstern* and *Tovarishch*.

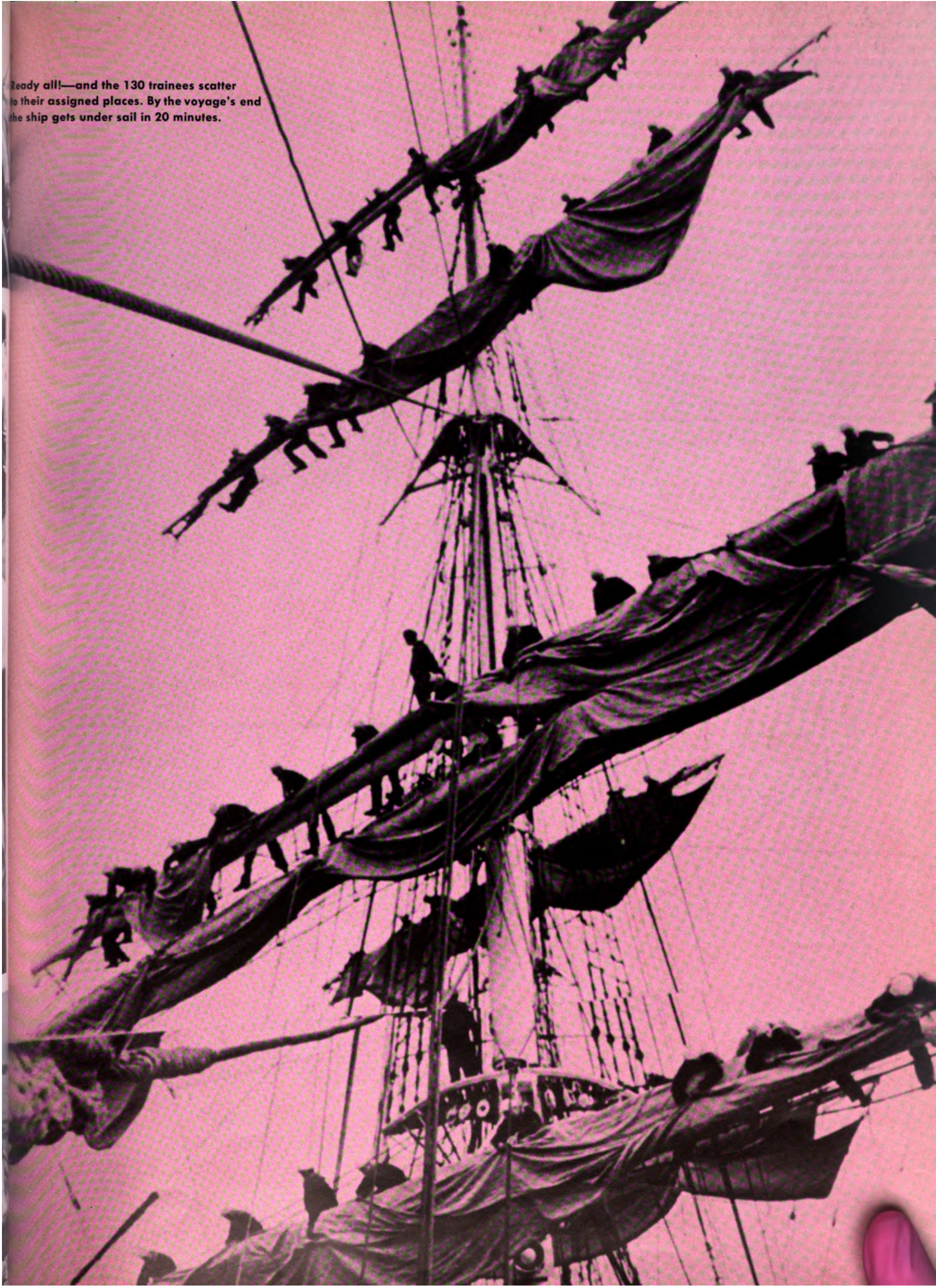
The *Tovarishch* was the first ship onto whose deck many a veteran naval officer of today stepped as a 16- or 17-year-old boy. Every March several hundred nautical school students board her for a year's training. For the first two weeks the ship is berthed in a Dnieper estuary near Kherson, the port of call. The "old hands" there —real martinets—teach the boys to climb the ropes. Each is assigned "his" mast, "his" sail. And it is here, in the estuary, that the knowledge and courage of these future sailors get the first test.

Boat races on the smooth Dnieper (below) are also part of initial training. Once at sea, the boys may be forced by a practice alert or an accident to lower their boats in a storm. The sea has its moods, some of them turbulent. The *Tovarishch* has been caught in bad weather that lasted for weeks. A cyclone in the Indian Ocean tore away her sails, and building-size waves pounded her deck in that "cemetery of ships," the Bay of Biscay. Some of the boys must have wondered then whether they had made the right choice. But once met, there is no easy parting with the sea: Only the weak retreat; the strong grow hardened and stay.

Aboard the *Tovarishch*, a traditional offering (right) is made by the ship's cook as each new training group puts out to sea: a "Happy Voyage" cake. Having left port, the boys soon find that the *Tovarishch* under sail presents more problems than a modern ship. Above, a future quartermaster joins his trainer at the wheel and comes to respect "old hands" who can run the three-master doing 18 knots. But such difficulties are apparently relished by boys like these, who come to the *Tovarishch* each year to test the vitality of a youthful dream of seafaring and the captain's bridge.







Ready all!—and the 130 trainees scatter to their assigned places. By the voyage's end the ship gets under sail in 20 minutes.



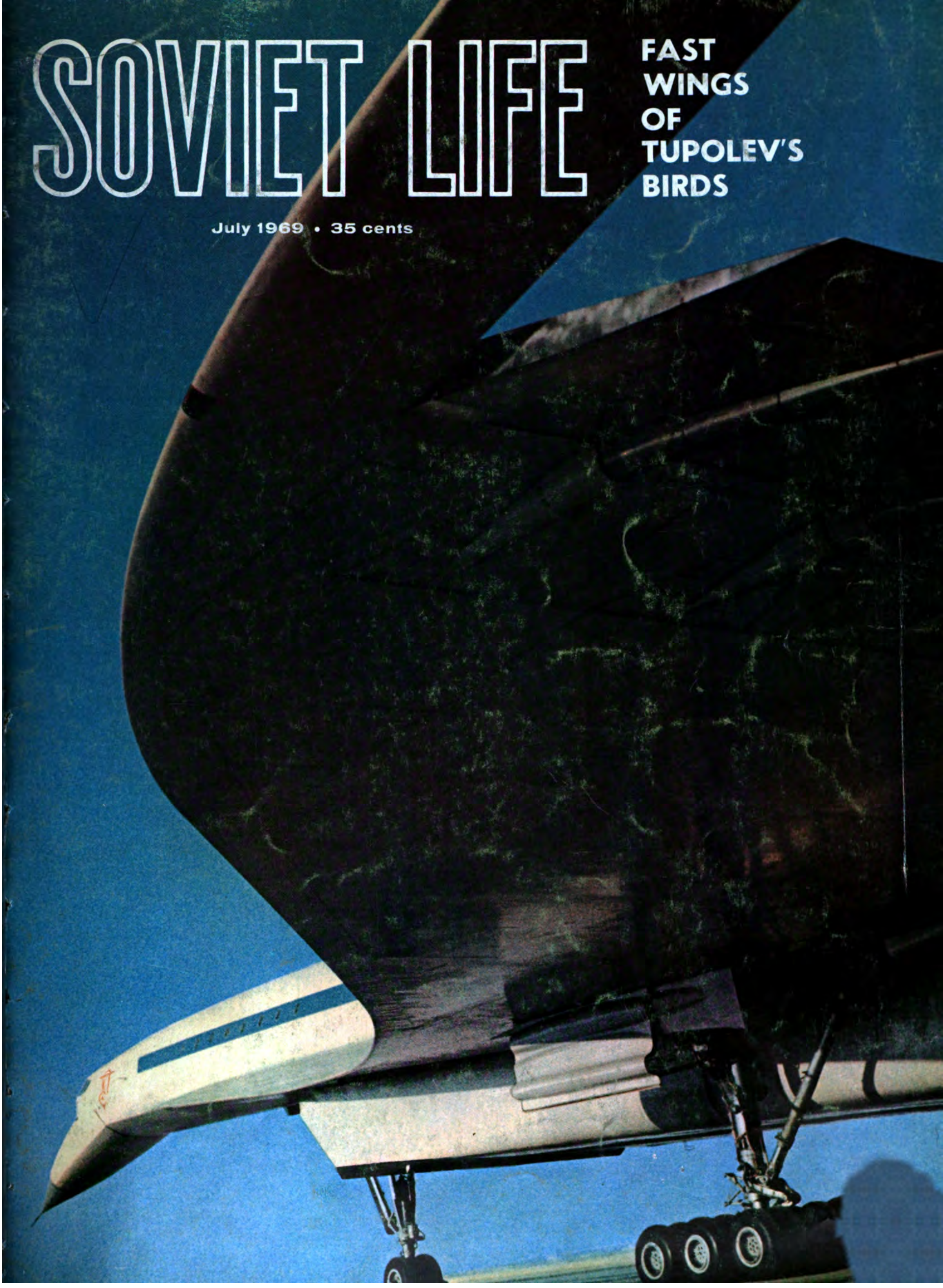
Volga River Landscap

Photograph by Stanislav Golub

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FRONT COVER: The TU-14 before taking off on maiden flight. Photo by Yevgeni Umnov

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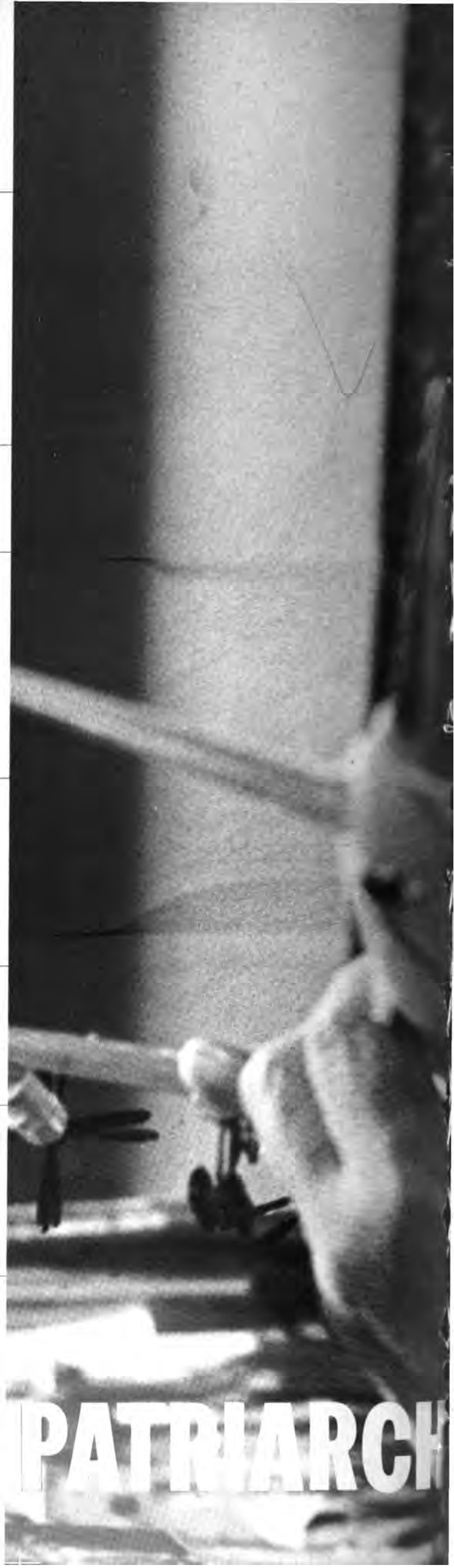
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OF SOVIET AVIATION



Andrei Nikolayevich Tupolev is something more than chief designer for one of the biggest aircraft design offices in the Soviet Union. His name is associated with the living history of Soviet aviation: ANT-2, the country's first all-metal plane; ANT-6, the forerunner of the classical multiengine plane, which brought a research expedition to the North Pole in 1937; ANT-25, the plane which made the first nonstop flight from Moscow to the USA via the North Pole (1937); TU-104, the world's first jet airliner; TU-114, the turboprop airliner whose record-setting range and speed of flight is on a par with jet planes; and many others. And now TU-144, the world's first airliner with a speed of flight twice as great as the speed of sound.

That is why Tupolev's every word is both aviation history and a landmark in present scientific and technical progress. Vladimir Brodetsky, a SOVIET LIFE correspondent, asked Academician Tupolev to answer some questions.

QUESTION: How is a new airplane conceived?
ANSWER: The designer assesses the progress made in science and technology, and the possibility of producing on this foundation a machine which will cater to the country's economic requirements as long as possible.

The designer's task is complicated by the length of time required to produce an aircraft: three to five years between the beginning of design and the completion of manufacture. Consequently, the designer should foresee the country's requirements at least five or ten years ahead, and develop a machine in keeping with these requirements.

QUESTION: What are the main stages of your work as chief designer of a new plane?
ANSWER: Initially, a chief designer should define the craft's salient feature. When the idea has shaped in his mind, a small number of his close associates join in the work, concretizing the idea in blueprints which they thoroughly check against estimates and experiments. Gradually an increasing number of specialists is drawn into the job, and these help to develop the elements of the plane and determine its specifications.

The chief designer continually takes part in the work of the team of designers. He sees to it that the initial idea of the machine is developed properly, and helps resolve problems as they appear.

At a certain juncture the rest of the designers join the job. Working blueprints are produced, and then the experimental model builders get to work.

Next the experimental models are tested, shortcomings eliminated, and the machine is put in serial production.

At all these stages it is important that the chief designer have close contact with the team producing the aircraft. Mutual support and trust determine the success of the whole undertaking.

QUESTION: What is the common feature of all the planes developed by your design office?
ANSWER: The planes of any designer always have features in common, for the experience acquired in the development of a single plane is reflected in the development of the next one. In my life I have worked on various types of planes, including fighters and giant craft, seaplanes, high-speed and long-range machines with their own distinguishing features. Yet, in spite of their diversity, they all have something in common.

QUESTION: You have originated more than 120 types of planes. Which model is your favorite?
ANSWER: It is difficult for me to single out one model. I'd prefer to name several. First, naturally, ANT-2, my first-born and the country's first all-metal plane. Even in spite of some of its handicaps, the machine is precious to me as the first incarnation of my idea for developing metal aircraft engineering in the Soviet Union.

There is no doubt that a landmark model was ANT-25. With it in the thirties our pilots set several world records in the range of flight. Among these was the transcontinental nonstop flight from the Soviet Union to the USA. The development of ANT-25 was a big technical leap for it required the manufacture of a new type of engine, along with a new type of fuel and new building materials. This fact and the graceful shape of ANT-25 make this model memorable to me.

I hold very dear TU-114, the turboprop airliner with the world's greatest range of flight.

I am very fond of TU-104, the pioneering plane of our jet airliner fleet. Yet, one considers most precious the thing that one works on at the given moment. And now, naturally, much of my time is devoted to TU-144.

QUESTION: How are the new ideas appearing in your design office discussed? How are decisions adopted?
ANSWER: We provide vast opportunities for all the employees to use their initiative. Yet, the chief designer always has the final say. In this connection I would like to make comparison with the organization of an orches-

Past 80, Andrei Tupolev (above) is still the top Soviet plane designer. He has now designed the first supersonic airliner.

(Right) His son Alexei, also a leading designer, worked with him on the new craft, which flies twice as fast as sound.

Tupolev's grandson Andrei receives some expert advice on assembling a model plane.



An Interview with Andrei Tupolev

tra. You know there were attempts in the thirties to organize orchestras without conductors, but this did not lead to anything. In a design office, too, the last say should be with a single person. Then, apart from assuming responsibility, he can make the entire team confident of the soundness of decisions and ready it to fulfill the assignment.

QUESTION: What is your principle in selecting pilots for testing your machines?
ANSWER: Training a test pilot is a big and lengthy job. The pilot must become familiar with many branches of knowledge, must study aerodynamic and stress properties of the plane to be tested, make ground testings and training flights in planes approximating the new model's flying specifications. The test pilot in effect becomes a member of the design office; he is a member of the dummy commission which endorses the future plane. At the dummy stage the remarks of pilots are taken into account by the designers, who make changes in the model accordingly.

Though all our pilots are very skilled in their profession, each one has his own style. And before the testing of each plane, I take these individual traits into account to select a style most suitable for the model in question.

Model planes are tested not by a single flier but by a whole crew. Therefore in the selection of the crew it is important to keep harmony in mind. Each member should fit in properly with the entire group.

QUESTION: The supersonic speed of such a liner as TU-144 is associated by many people with great overloads and highly unusual conditions of flight. Will any person be able to fly in a supersonic liner, regardless of the state of his health?
ANSWER: During flight in a supersonic airliner man will not have any unusual sensations. It is not speed but acceleration that produces overload on the human body. With







(Upper right) In 1910 Tupolev, then a Moscow technical school student, built his first aircraft, a sailplane, and made his first flight. "I went up," he says, "30 to 50 feet." In 1923 he built his first plane, the ANT-1 (right). The photo shows him standing alongside the plane, his hand on the fuselage. His ANT-4, completed in 1925, (above) was one of the first all-metal craft. That is Tupolev posed on the wing.



TU-144 acceleration will be the same as with subsonic airliners, and the conditions of flight in it will be even more comfortable. Supersonic speed will completely relieve passengers from engine noise, which will lag behind the plane. Flight at the altitude of up to 65,600 feet with practically no overcast will be calm, and the plane will not be subject to glaciation; there will also be less chance of getting into thunderstorms and lightning discharge areas.

QUESTION: How soon can one expect the appearance of TU-144 on regular passenger routes?
ANSWER: I've never given anyone answers to such questions, and I would like you to allow me not to depart from this rule now.

QUESTION: What is the theoretical speed ceiling of future air transport?
ANSWER: To my mind, supersonic planes going at 1,550 miles an hour will reduce distances on the globe sufficiently. There is hardly any need to fly faster. Even for a very busy businessman it will hardly be important whether he reaches Moscow from New York in three or two hours whereas the hour in this case may mean a whole technical revolution. Moreover, the till now insurmountable obstacles to increasing speed on the ground will become even more noticeable, and one will feel acutely this disparity with speeds on highways connecting airports and cities. Flight in such a supersonic airliner as TU-144 is too short to interfere with man's vital cycle. Even if you have to cross the ocean, you will be relieved of the need to sleep in an airplane seat.

Yet, these are current problems, and with the progress of science and technology man will apparently revise even more radically the relationships between his conceptions of time and distance.

In 1922 Andrei Tupolev designed his first plane, the ANT-1, a single-seater sports craft. Since then he has designed and built more than 120 types of aircraft—military and civil, small, medium and heavy. Each of them had unique characteristics; many were ahead of their time. Tupolev, more than any other designer, is responsible for the Soviet Union's pre-eminence as an air power.

FROM ANT-1 TO TU-144

BY ALEXANDER ARKHANGELSKY
Aircraft Designer
Lenin Prize Winner



In 1934 a new record was set by the ANT-25, when it flew 75,000 miles in 75 hours.

An ANT-9 at the London airport. In 1929 Mikhail Gromov test flew this nine-seat craft on the Moscow - Berlin - Paris - Rome - London - Warsaw - Moscow run, and passenger service followed.



The progenitor of Soviet all-metal planes, the ANT-2 monoplane, was built in 1924. As a test of its duralumin strength, it was put through its paces in winter as well, on skis.

An ANT-6, the leading plane of the first Soviet expedition to the Arctic, landed at the North Pole May 21, 1937. It was followed by three more ANT-6s in the next two weeks. Tupolev planes were proved anew on this tough Arctic hop.





This flying "aircraft carrier" was tested in December 1931. The role of the mother ship was played by a craft designed by Tupolev: an ANT-6 he adapted to carry two fighters.





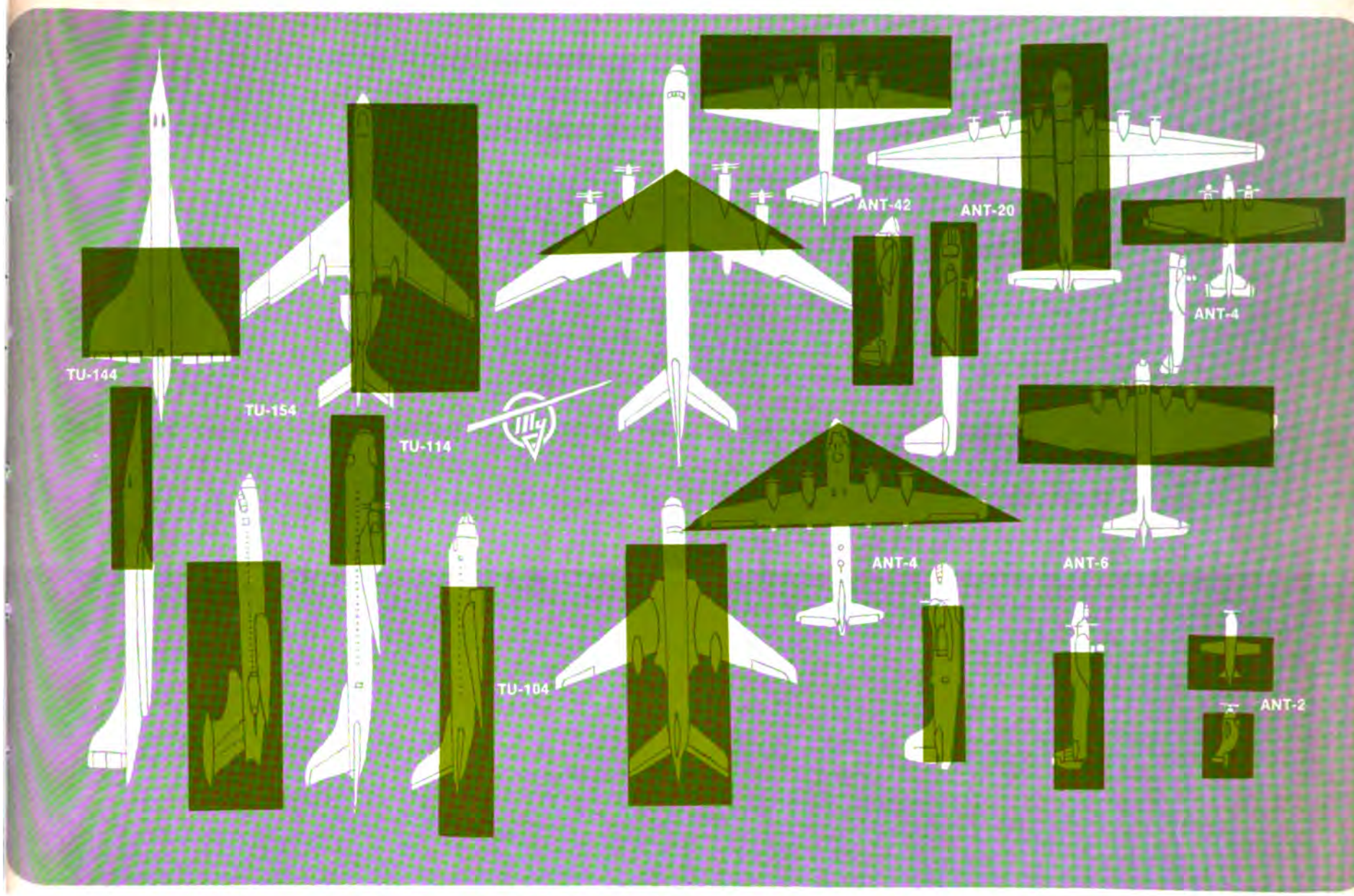
This upcoming aircraft, as the designers conceive it, will combine the IL-18's range, the TU-104's speed, and the landing and takeoff features of the ANT-10 with a large thrust margin.



It was not until 1934, 16 years after graduation from the Moscow Higher Technical School, that he built the seaplane (MK-1) he had designed for his diploma project.



At the end of 1936 the TB-7 (ANT-42) heavy bomber took to the air. Its range and altitude enabled it to bomb Berlin during World War II almost at will.



ANDREI TUPOLEV was born in the village of Pustomazovo, former Tver Gubernia (now Kalinin Region), in central Russia. His father was a notary.

When they sent their son to school, his parents had to sign an official document. One of its provisions was a promise that their boy would never have firearms in his possession. Another stipulated that the tuition fee was to be paid in advance, every half year, on pain of expulsion.

On August 8, 1900, Tupolev was enrolled in the first grade. But in September of that same year his mother had to "ask humbly to be permitted to defer the payment of the tuition fee for my son Andrei Tupolev, first grade pupil, till early December of this year." The headmaster wrote across the application: "Denied."

A document has come down to us which describes Andrei's father as "having seven children and being of an advanced age and in poor health. He suffers great want and poverty and is unable to support his family by his labors, not to speak of paying school fees for his children."

However, despite all these handicaps, Andrei graduated from secondary school on June 23, 1908.

While in school, he showed an aptitude for the exact sciences. He was much taken with astronomy and mechanics, and devised his own laboratory equipment for physics classes.

In 1908 he was admitted to the Moscow Higher Technical School, where Nikolai Zhukovsky, the founder of Russian aviation, was then teaching. It marked a new stage in his life, interrupted in 1910 when he was exiled to his native region for participating in student disorders. He was placed under secret police surveillance.

After his term of exile, Tupolev returned to the Moscow Higher Technical School and his studies. He became interested in aviation. The origin of this interest we learn from his own recollections:

"I happened to go to an exhibition of aircraft models sponsored by Nikolai Zhukovsky. He asked me to pull an air glider rope, the first thing I ever did in aviation. I started attending an aeronautics circle."

The circle decided his future. I was a member of that circle also. I remember that even then he showed a characteristic quality: a stubborn desire to understand everything and to apply everything he learned.

In 1916 Nikolai Zhukovsky organized a designing and testing division at the Moscow Higher Technical School and asked Tupolev to head the department of aerodynamic design. Two years later the department graduated its first engineers, specialists in aircraft construction.

On December 1, 1918, the Central Aerohydrodynamic Institute (Russian abbreviation TSAGI) was founded by government resolution. It was headed by Nikolai Zhukovsky, with Tupolev his assistant. And in 1922 an aircraft design bureau, with Tupolev the chief, was set up at the institute.

This was the beginning of his distinguished career as scientist and designer. A great many aspects of his activity to this very day show the influence of Nikolai Zhukovsky's personality and style. Close contact with this brilliant Russian scientist, who charted new directions in science and technology, gave engineer Tupolev an almost instinctive sense for relating theory and practice.

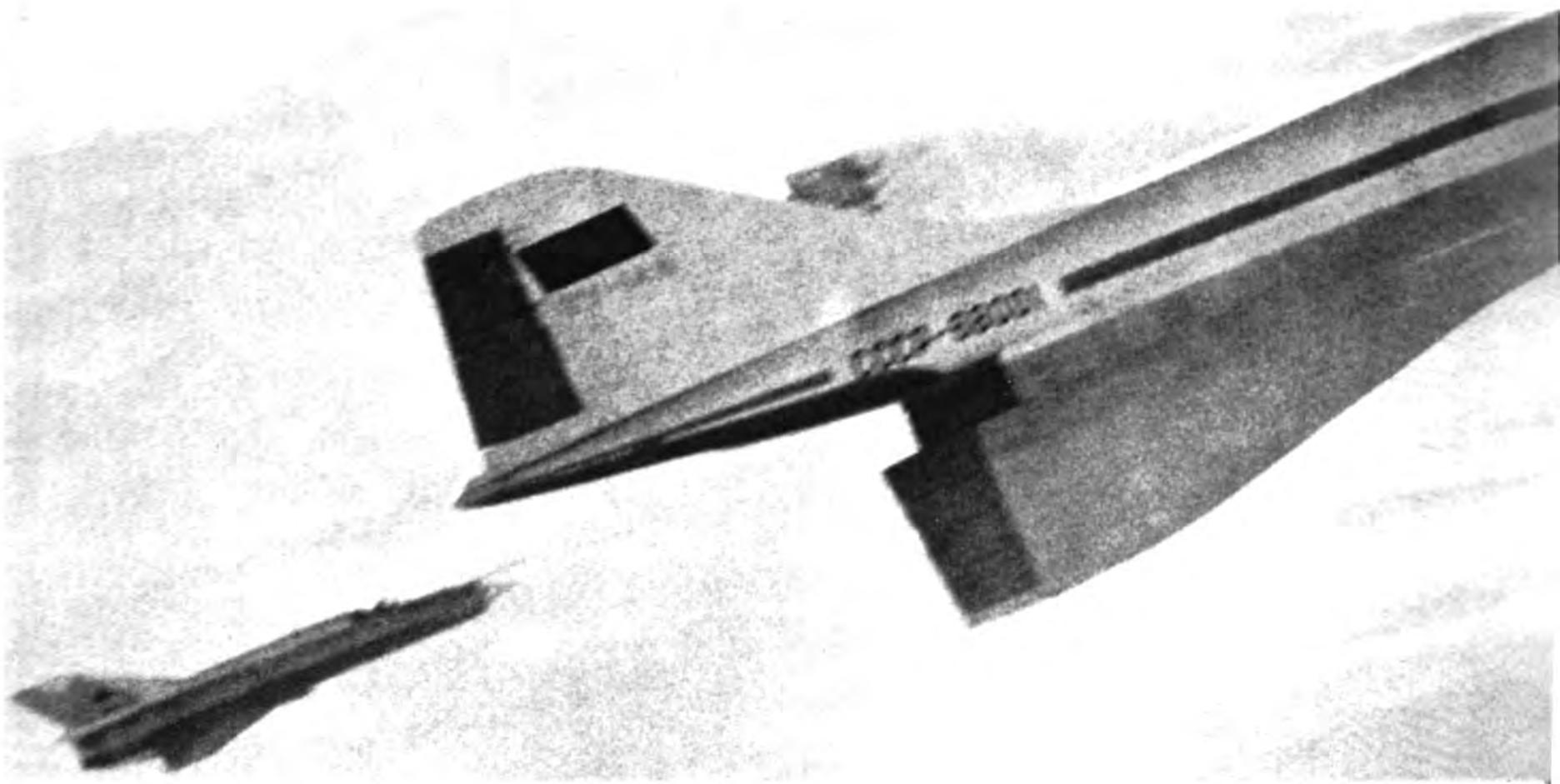
In addition to his research Tupolev had to deal with practical problems of aircraft and glider construction. He selected a small group of people, just as young and just as enthusiastic about aviation as he was, to work with him.

He started out with designs for a small sports plane and a small experimental glider.

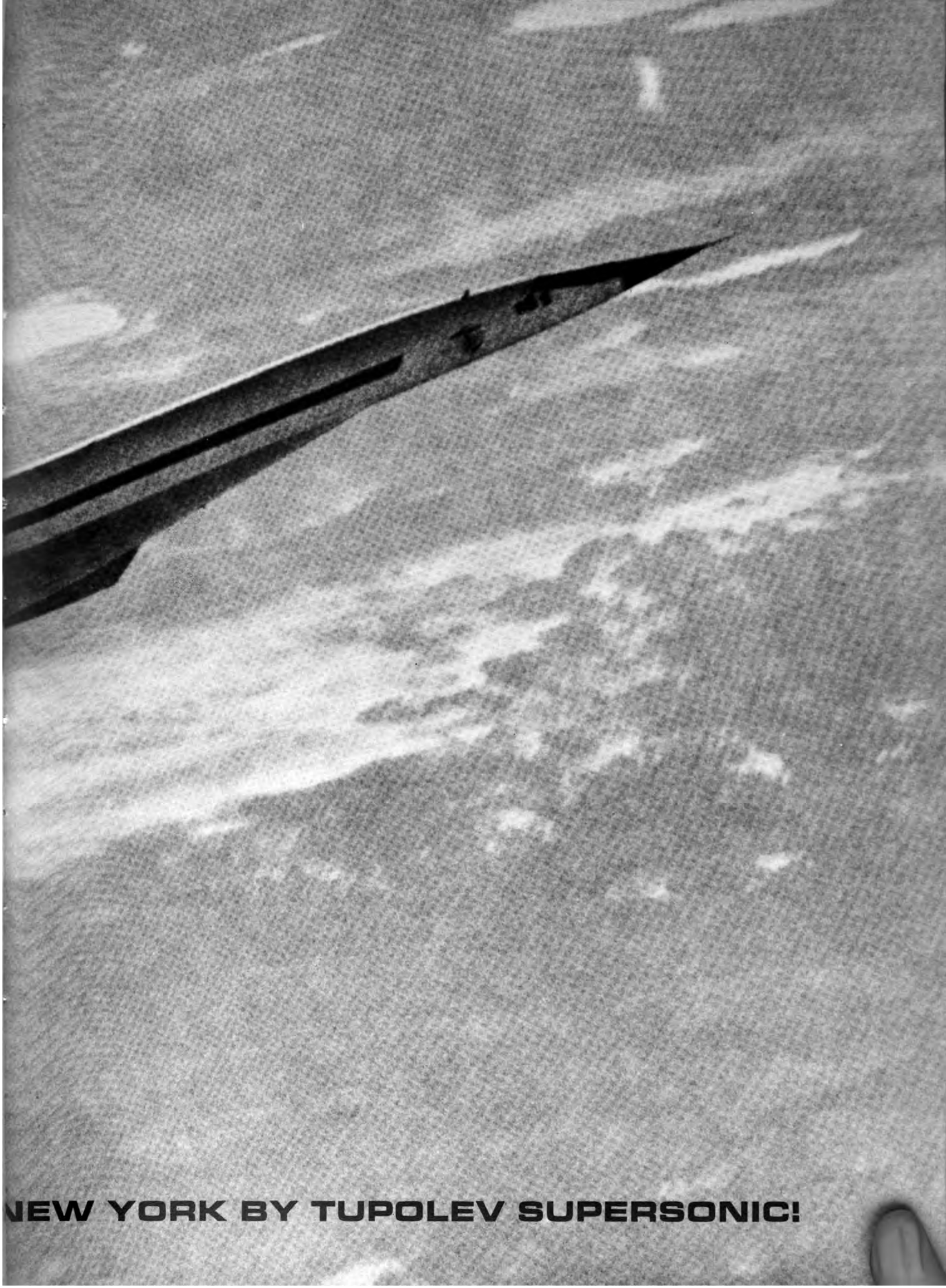
Even in these first projects he had begun to combine research and laboratory work with practical engineering.

The first-born ANT (Tupolev's initials) soon rose into the sky. It was the wooden

Continued on page 10



THREE HOURS FROM MOSCOW T


NEW YORK BY TUPOLEV SUPERSONIC!







(Top left) TU-144's Captain Edward Elyan is greeted by Tupolev before the first test.

(Top center) Daily overhauling of the liner.

(Right) The test crew is set for the flight.

(Far right) Finishing touches for the takeoff.





ANDREI TUPOLEV, the patriarch of Soviet aircraft designers, has figured prominently in nearly every stage of aviation development. He worked on a veneer-percale plane, designed the first Soviet all-metal plane and the first heavy aircraft. His liners launched the era of jet transport. And now he has built the first transport plane to break through the sound barrier.

If we were to measure his career in terms of the evolution of sea transport, it would mean that one man built the first sailing vessel, the first steamer and then the first nuclear-powered ship. Aviation has squeezed the centuries into decades, which is why a single man could have contributed to nearly every stage of aeronautic progress.

On the eve of 1969 the world's first supersonic passenger plane made its maiden flight.

This liner, designed by Andrei Tupolev, represents the junction of two eras. It crowns the great era aviation has gone through and ushers in the new era of supersonic passenger traffic.

Why Speed?

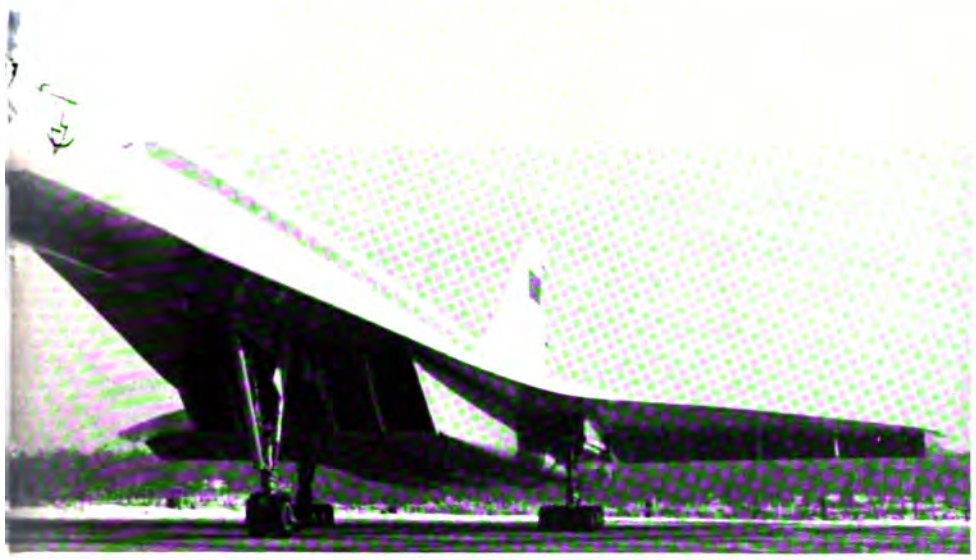
Why do we all rush? Why does this hurry to get there push not only pilots, servicemen and daring record holders but also vacationers and those who fly on business?

A great surgeon gets to a dying man in time—that alone morally justifies all the effort it took to build a supersonic transport. Besides, scientific, engineering and economic calculations have shown that in the long run the TU-144 will bring a profit. It has a greater capacity, and although it is more expensive to run, it can make three flights in the time the usual jet plane makes one.

Finally, there is this intangible but decisive consideration: man's striving for progress. This explains the first efforts to fly, the constant push for higher altitudes and for greater distances and speeds. It explains the first sputniks, the pioneering flight of Yuri Gagarin and the flight of three courageous American astronauts to the Moon. This is why scientists and designers labor to make the achievements of individuals the property of all mankind.

In 1956 when the TU-104 jetliner was placed in service, there were some who asked: "Why all the rush? We're flying fast enough now." Offer some of these same people a seven-hour Moscow to Tbilisi flight today, and they will raise strong objection: "Why seven when it's possible to get there in two and a half?"

Modern man does not like to spend any more time than he has to getting somewhere. It is lost time as far as he is concerned. The supersonic TU-144 will take him a lot farther than from Moscow to Tbilisi in two and a half hours. It will fly him from Moscow







(Above) Awaiting the all clear to take off on its first test flight.

(Center right) Alexei Tupolev finds verbal reports as interesting as the instrument data.

(Bottom right) Silent engines and calmer flying than in subsonic liners.

SUPERSONIC AIRLINER

By Anatoli Agranovsky
Izvestia Special Correspondent

to Delhi in 2 hours 20 minutes, and from Moscow to Khabarovsk in the Far East in 3 hours 20 minutes. "Why 11 hours," he will ask, "when it's possible to get there in three and a half?" He will grow accustomed to moving faster than sound—keeping ahead of the changes in time zones. He will take off from Moscow at 12 noon, land in Montreal at nine that same morning and say, "A normal flight, nothing special."

Speeds that high are a little frightening, but only until we get used to them. Leo Tolstoy, in "A Tale of an Aeronaut," based on fact, says, "The first moment I was so afraid it made my flesh creep, and then suddenly I felt a kind of elation and I forgot to be afraid." All of us will forget to be afraid. It has happened before, many times.

From the very outset supersonic transport has been thought of not simply as a speedier aircraft but as a new vehicle. The speeds of vehicles always grow—from locomotive to locomotive, from car to car, from airplane to airplane—by an average of 10 to 15 per cent. This is a usual evolutionary cycle, a gradual accumulation of qualities. In these cases a great many of the old components, tested in service for many years and modified, are used in new models and this makes for confidence.

But the first passenger jet planes increased speeds not by the usual 10 to 15 per cent, but by 250 to 300 per cent. As for the TU-144, it almost triples the speed—from 500-550 to 1,550 miles per hour. This has required a radical change in the aerodynamic scheme, design, materials, technology and most of the systems.

A 400 Per Cent Reliability

The cruising speed of the TU-144 is 1,550 miles per hour and the ceiling 12 miles. It is noteworthy that its takeoff run and landing run are not greater than for the TU-104. Such speed, altitude and range have long been exceeded by military aircraft, but it was done by stages: Speed was surpassed by one plane, lift capacity by another, range by still another. But now a single plane has made the breakthrough all at once. Besides, the new liner is uniquely reliable. And this is one of the major considerations. Maximum flight safety is basic for passenger aircraft construction. When grandmother and granddaughter are airlifted, there is no room for errors and risk. Up to now only professional pilots have broken through the sonic barrier. They made a breakthrough in the name of technological progress. Now we witness the advance of all of aviation, and this is a qualitative leap.

As far as technology is concerned, thousands of problems had to be solved to make it possible to carry passengers at supersonic speeds, safely and at low cost. In this case the amount of re-

SUPERSONIC AIRLINER

search was 10 times greater than usual. Special simulators and laboratories were set up, sophisticated machine tools with programed control designed. All this took the aircraft industry not a year or two, but five. Hundreds of factories, tens of thousands of workers, engineers and scientists contributed to create the TU-144. It could not have been done without the new alloys and new kinds of rolled stock developed by metallurgists; without the work of chemists—it has 10,000 plastic parts; without instrument makers and radioelectronics experts. The cost of its electronic equipment accounts for nearly half the cost of the entire plane.

Marking a first time in world practice, all the rescue equipment for the TU-144 crew was tested in an experimental model. Catapult devices, pressure suits and special hatches were made specially for tests. It was expensive, but designers thought it necessary. Of course, in ordinary supersonic liners there will be no catapult devices and pressure suits. How then will safety be guaranteed?

The giant plane was built in several copies. One of them is a victim, consisting of the entire fuselage, seats, and dummy passengers radiating heat like real people. It was tested at vibration stands and was subjected to overloads in a static test laboratory. To perfect the airconditioning system, the fuselage was blasted outside with hot air; inside, room temperature was maintained. This ground simulator has "flown" more than six million miles.

What else guarantees safety? In this airliner all major systems are not only redundant, but quadruply redundant. One malfunction is no real problem; even two malfunctions do not create an emergency situation. There is a built-in control system. If the pilot forgets something, not only does a lamp flash on and an inscription appear on a display board, but a voice is heard, "Switch on the radio beacon!" or "Extend the landing gear!" or "You are deviating from the landing strip."

The TU-144 will have a long life: 30,000 flight hours, 10 years. The design strength and all the details of construction assure that.

In its passenger-carrying service there are firmly established rules, a kind of sound conservatism. A leader plane, an exact replica, does thousands more flying hours than the other planes and never carries passengers. If an emergency situation arises the leader is the first to meet it. By the way, the leader of the TU-104 jetliners is still in the air, after more than 12 years.

With the TU-144 flying at supersonic speeds we should reasonably be describing all other passenger airliners as subsonic.

Courtesy of the newspaper *Izvestia*

FROM ANT-1 TO TU-144

Continued from page 5

ANT-1, the forefather of the "Tupolev family." Since no trained mechanics were available, the designers assembled the craft themselves. One of them did the test flying. The craft was assembled in the Moscow building which now houses the Zhukovsky Museum.

The point at issue in the 1923-1924 period was what direction Soviet aircraft construction should take. Up to the twenties the favored structural material was wood. As aviation developed, wood was being displaced by lightweight metals. Authorities differed, however. Many aircraft specialists thought we should stick to wood. "We are a forest country, and our aircraft must be of wood. We have no aluminum; metal planes would be an exotic luxury for us," they said. But the view Tupolev shared won out: that there would have to be a changeover to all-metal craft if we were to have reliable planes flying.

A commission chaired by Tupolev was set up for metal plane construction and a detailed plan for introducing metal into the aircraft industry worked out. But the production of metal planes did not begin right off. The initial effort involved studies of material properties and metal-working processes, and the manufacture of individual parts. An aerosleigh and water glider of metal were then built and their performance served as a basis for studying the strength and corrosion properties of metal. Our first metal ANT-2 plane was designed and built only after all that preliminary work. When construction started, there was no suitable workshop. An empty building was used. A section of the wall had to be broken through to get the plane out.

The first metal plane appeared over Moscow on May 26, 1924.

The ANT-2 was followed in 1925 by Tupolev's first combat reconnaissance plane—the ANT-3, or R-3. It was all metal and was adopted by our Air Force.

The achievements of the Soviet aircraft industry put the capitalist world on guard. The British Journal *Airplane* wrote in 1925 that Russia had developed an air force which the countries of the West had to reckon with.

From August 31 to September 2, 1926, Mikhail Gromov, in an ANT-3 called *Proletary,* made a trans-European flight, with stops in Königsberg (now Kaliningrad), Berlin, Paris, Rome, Vienna, Prague and Warsaw. The flight created a sensation.

Another ANT-3, called *Our Answer,* made a Moscow-Tokyo-Moscow flight in August 1927, covering 14,000 miles in 153 flying hours.

At the May Day celebration in 1929, Muscovites and foreign guests saw the ANT-9 aircraft, which became famous later. It was on view in Red Square near St. Basil Cathedral, its corrugated metal facing agleam. In this craft, called the *Wings of Soviets,* Mikhail Gromov was to fly over Berlin, Paris, Rome, London and Warsaw, earning praises from the Soviet and world press for the designer, the pilot and the craft.

In the autumn of 1929 the ANT-4 *Land of Soviets,* with a crew led by Semyon Shestakov, made a Moscow to New York flight. Five thousand of the 13,198 miles were flown over the Pacific Ocean. The plane had to battle snowstorm, blizzard and fog, but it stood the test.

In May 1937 Tupolev's ANT-6 flew Ivan Papanin's expedition to the North Pole.

An important part was played in aviation development by the *Maxim Gorky,* an eight-engine, 80-seat giant. The fighters that escorted the craft pointed up its size; the *Maxim Gorky* was the world's largest ground-based aircraft until 1950.

In 1935-1936 Tupolev was appointed chief engineer of the Chief Board of the Aircraft Industry. He was responsible for the heavy aircraft industry, for the development and production of heavy-duty planes, and for the reconstruction of old aircraft plants and the construction of new ones.

In 1932 he was asked to design and build a special long-range plane. In the construction of this craft interesting solutions were worked out for several important technical problems (retractable undercarriage, layout of fuel tanks, etc.). The ANT-25 made its first flight on June 22, 1933, and in September 1934 Mikhail Gromov set a new world record in the craft, 7,711 miles in 75 hours.

It was in this plane that Valeri Chkalov and his crew made their 5,283-mile flight to the USA via the North Pole in June 1937. This was soon followed by Gromov's flight across the North Pole to the USA, in which he covered a distance of 6,306 miles.

In the World War II years, Tupolev and his coworkers designed a series of medium and heavy bombers that provided good support for our ground forces. They built the TB-7, the first long-range high-altitude high-speed bomber. It was used to bomb Berlin from distant bases and set the line of development for this class of combat planes for many years to come.

In the war and postwar period our Air Force added the long-range TU-4 bomber to its arsenal. It was Tupolev's last craft with piston engines. He then designed a series of jet airliners for passenger service. The first was the famous TU-104, which made its debut over Moscow in 1955 on Aviation Day. Tupolev's TU-114, TU-124 and TU-134 are equally famous now.

For his TU-104 and TU-114 he was awarded the Grand Gold Medal at the 1959 Air Show in Paris, and for his TU-114 the Grand Prix, the highest award of the Brussels Fair.

Academician Andrei Tupolev, aircraft designer, twice Hero of Socialist Labor, turned 80 in November 1968. Despite his years, he is still hard at work.

Courtesy of the magazine *Ogonyok*



TRACK and FIELD: HOPES and HEADACHES

BY VICTOR KUPRIANOV

IN MID-MARCH the coaches and public got a preview of what to expect in track and field this summer. It boiled down to hopes and headaches.

A two-day international tournament in Moscow attracted a capacity crowd to the Sports Palace, and the 30 American athletes present added zest to the contest.

U.S. Coach Les Wallach said of the tournament: "The organization is the best I've ever seen. The athletes were magnificent and the competition tremendous. I'd like to see most of the athletes come to the United States this summer. It's going to be a tremendous summer meet with the best of both countries taking part. It'll be wonderful!"

Coach Wallach added that the results were very good. "I was amazed at the 1,500-meter race and the high jump. Those were world-class performances."

The high jump was won by Anatoli Moroz, from Berdichev in the Ukraine, who cleared 6 feet 11¼ inches . However it wasn't Moroz who took the limelight, but Valeri Brumel.

The vertical takeoff wizard was eyeing performances critically and keeping correspondents at arm's length.

"When do you think your world record will be broken?"

"You'll find out as soon as I do."

"Will you be competing soon?"

"I hope so, but hardly this season. I won't be in good enough shape."

Brumel already clears 6 feet 6⅝ inches at his training sessions and had the entire American team watching and applauding. A modern miracle: The doctors were thinking of amputating after he splintered his leg in an accident.

How soon will Brumel's record be broken? And who will do it? These are questions everyone's asking. Brumel doesn't see any one of his teammates doing it.

"The thing to do is train the 16-year-olds. That's the answer," he says.

I agree, but who is to do the training?

More Solutions Than One to the Problem

At the indoor meet in Moscow two leading high jumpers, Valeri Skvortsov and Valentin Gavrilov, were stranded at the roadside. Brumel explains it by the surfacing of the jumping apron. Both men have fast run-ups and powerful kickoffs that displace the rubberized surfacing. But outdoors they should be good.

And that leads us to a major problem. What to do about training in the Soviet Union, where long winters in most areas force athletes indoors for long periods?

Coach Gavriil Korobkov sees the solution in popularizing track and field in parts of the country where spring comes early—some places in February. The officials tried this out and held the February national cross-country championships in Central Asia.

The irony of it all is that boys and girls in areas ideal for track and field prefer other sports. Popularizing track and field is becoming a problem of prime magnitude.

The officials are trying various solutions. Fans at the Moscow meet saw one of them applied. During one of the intervals the track was turned over to the teenagers. These youngsters competed in one of the numerous contests held here to interest the younger generation. It was an inspiring performance as the girls raced down the track with pigtails flying. Said one official, "We're watching the future of Soviet track and field."

There is much discussion of how best to train. Some argue



Peter Chen cleared the plank, but he lost to Bliznetsov.

for indoor tournaments like the one in Moscow. Others want stadiums roofed over so that athletes can run and jump in outdoor conditions but shielded from weather. Since soccer officials are also interested in a roofed stadium, Moscow may be getting one soon.

Another big problem is the track events. At the Moscow meet the American athletes made a clean sweep of the sprints. Student Ludmila Zharkova managed to sandwich into second place after Mattaline Render: the Soviet team's brightest moment.

The 1,500-meter race in the male sector was balm after that. With three American runners in the final, fans settled down to watch the tactical pattern of victory. The home athletes immediately took the lead and the Americans seemed quite content to let them. The Americans' tactic was obvious—wait it out and romp home to victory on a last lap spurt.

Lap after lap the Soviet athletes took turns pacing the field —the Americans seemed quite happy to trail behind. But then a Minsk undergraduate, Mikhail Zhelobovsky, pulled ahead, and his teammates formed a solid phalanx behind him. Tom Von Ruden sensed something was brewing and he tried to work his way up, but the home runners left no gap for him to fill in. His only alternative was to describe a big arc—which he did. It cost him about five seconds—the margin that lost him the race. Zhelobovsky won, and the feeling is that he will join the under-four-minute-mile set.

It is a long time since we here have seen tactical maturity in distance running. This may be the harbinger of future headline performances.

Old-timers still recall the days when Soviet runners could dream of Olympic medals in distance running. What has happened? Have our athletes forgotten the secret of speed? The coaches explain it as poor training methods and want runners developed at an earlier age.

Records are improving steadily, not only here but all over the world. Coaches have to take that into consideration. The officials plan a long list of contests this season to give the runners the priming they need.

The sprints at the Moscow meet were a heartbreak for Soviet fans. The Americans seemed to be playing—they would let their opponents pull up with them and then speed away to finish first. In other cases they would lead all the way by margins that made the Soviet sprinters look as though they were standing still.

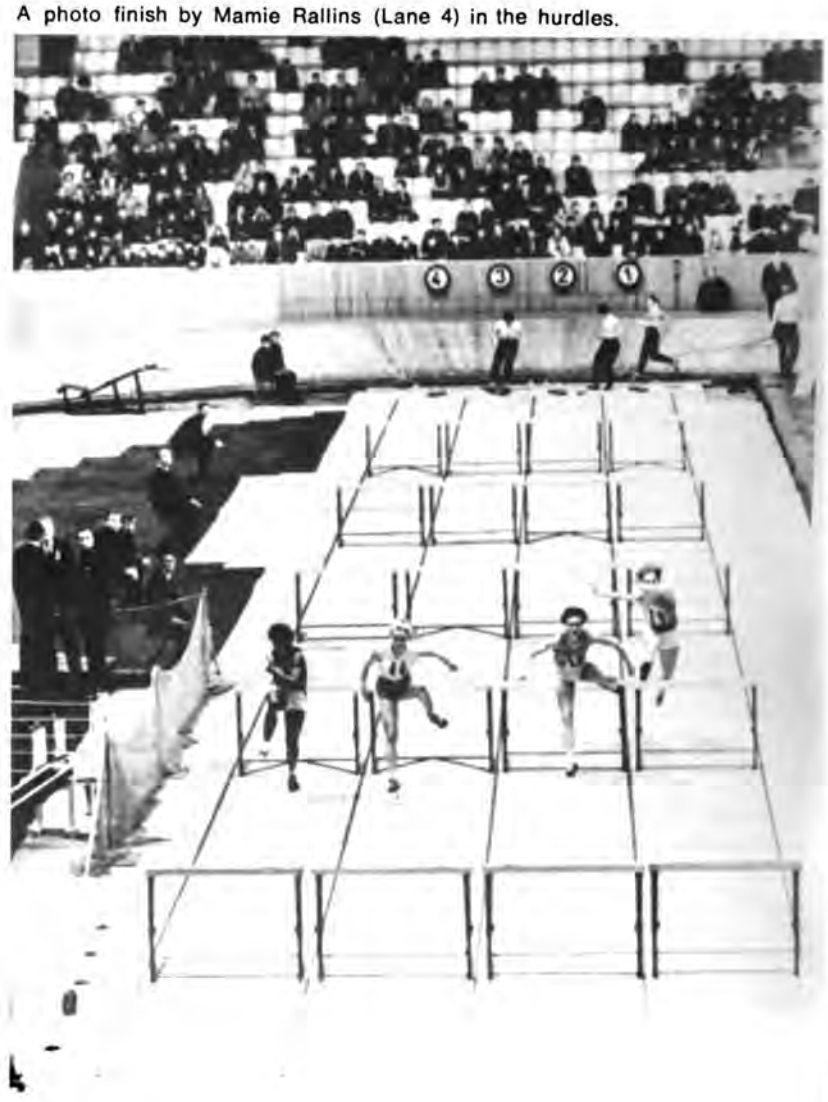
Jim Kemp won a special prize for best performance. In the 400-meter final he led by such a big margin it was embarrassing. He crossed the finish line in record time and looked back as if asking, "Is anyone else in this race?"

Hot Summer

Fans inquire how it is that the Soviet relay team rates second or third, yet the individual sprinters never even qualify for the finals. One of the answers is—slow start. It's rarely that the Soviet contestants get off their starting blocks with the shot. What's more, in the initial stages they seem to be rocking as though they were running on board a ship in a heaving sea.



A photo finish by Mamie Rallins (Lane 4) in the hurdles.



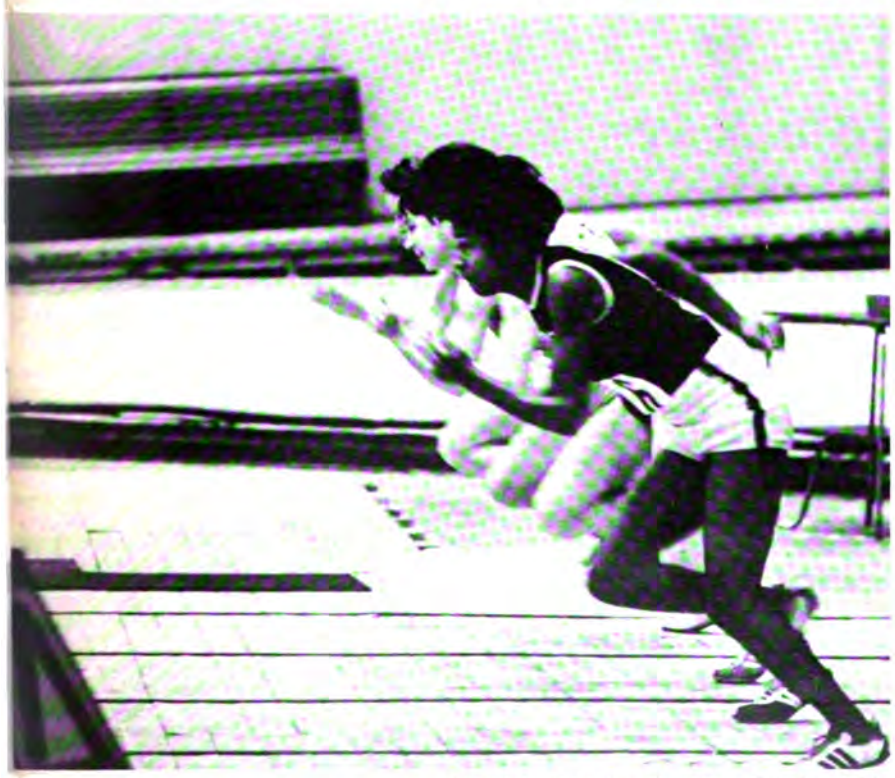
Bill Gaines and Charlie Greene outpace our sprinters.

Last lap: The autograph hunters catch up.



Diane Waters drops out.





A quick start by Mattaline Render, USA.

And still more, it takes them a long time to get keyed up. These are all things we can, and hope to, learn about from the Americans.

An event which should generate excitement in the July meeting is the pole vault. Gennadi Bliznetsov, Ukrainian engineer, who hopes for a record, cleared 16 feet 7⅝ inches at the Moscow tournament for Europe's best indoor performance. Peter Chen of the U.S. dropped out at 15 feet 8⅛ inches.

While Bliznetsov's showing may be nothing to write home about, it is a heartening point for Soviet athletics. The Americans were first to go over to the new poles. Athletes here were slower, and perhaps a bit reluctant, to try new techniques. So that we view Bliznetsov's performance as a sign that his teammates will soon be jumping with the new poles.

Some time ago Coach Korobkov complained that the modern woman will spend hours at the hairdresser's but will not devote two or three hours to training. The fair sex complained that wasn't so and blamed it all on coaches who do not keep up with modern methods. Whatever it was, Soviet women athletes have lost their grip. From now on they will have an uphill climb regaining lost positions.

The Soviet program for this year envisages peak form by September, in time for the European Championship. By July athletes should be in tiptop shape and performing at the best of their ability.

One item that has sparked considerable debate in the sports columns is psychological priming. Experts are unhappy that the national team does not yet include a psychologist, who, they maintain, is now as important as the coach.

In the sprints many of our men lose the race even before the starter's gun goes off. They develop that false start complex when competing against the United States and wait it out on their blocks until everyone else is off.

The solution, I think, is a new generation of athletes, young men and women who will put their all and more into the few seconds or minutes they run.

These are some of the problems Soviet coaches face. On the eve of their trip to the USA they are hopeful, but, warns one official, the solution won't come overnight. By Olympic time they hope to have many of the answers. They see the USA-USSR contests as steppingstones.

This should be an unusually hot summer for USA-USSR athletics.





GIRL DETECTIVE AT THE STATION AND AT HOME

KEEPING AN EYE ON EVERYTHIN





Militia Lieutenant Nina Demchenko turned out to be a pretty good marksman—or markswoman, should we say? Not surprising since this fair lady is really sportsminded. Before joining the criminal investigation division of the Moscow militia, she was good enough to figure skate professionally with the company of the ice ballet.

Nina thought figure skating was a nice hobby but hardly a career. She had been a secretary in a law court and became interested in why some people take to crime. So she enrolled in the USSR Correspondence Law Institute and graduated last year. This 25-year-old blonde has been doing criminal investigation for three years now and already has quite a reputation for the way she handles cases.

Hers are no bloodcurdling whodunits. Investigation of the more dangerous crimes does not fall to district sleuths. But Nina's job is no picnic. Every day she has to meet people you and I would not particularly care to associate with. She has her headaches figuring out what really did happen and battling with doubts. The day's work done, Nina goes off to the skating rink, where she has only the ice to contend with.

Photographs by Yuri Abramochkin



Militia personnel are required to know a great many things, including judo, although thus far Nina has not had to grapple with bandits. Outside the office she leads very much of a humdrum existence. Had she stayed with the ice ballet, her life would have been more hectic. The touring would have interfered with marriage and family plans. She's engaged.





Nina's chief, Major Valentin Perov, says she will make a top-notch investigator. She has all the ingredients—she is a logical thinker, has admirable persistence and is a glutton for criminology, spending hours in the laboratories. However, he thinks she is too softhearted. "I do pity offenders," she says, "if I see they are victims of circumstances or their emotions. On the other hand, what can one do? A crime is a crime, after all."







AROUND the COUNTRY



KIROVABAD RUGS

Five years ago a rug factory was built in the city of Kirovabad, in the Azerbaijan Republic. Its present capacity is 2,400,000 feet of rugs a year. The products of this factory are outstanding for their quality, color and original design, touched with tradition. Kirovabad rugs are admired all over the country and have been frequently displayed at international exhibitions.



THE LAST KAMUSIN WOMAN

A century ago, the Kamusins, and several other now extinct nationalities, lived in the mountainous Sayan country of Eastern Siberia.

The Kamusin language has been preserved only in the records of researchers. There were no people left, as far as anyone knew. But recently, an instructor at a university in the Urals, philologist Alexander Matveyev, found a Kamusin woman.

Klavdia Plotnikova, 75, is a living source of information on the language, legends, customs and habits of this native people of the Sayans.

MICROCLIMATE ON PLANTATIONS

Georgian scientists have created a device to protect citrus and other warmth-loving plants from frost. The device is placed in the center of the plantation at a height of from 6 to 8 feet. It rotates continually about a vertical axis, generates 25 to 30 million kilocalories of heat an hour, and raises the temperature of the air to 39-41°F. within a radius of 980 feet.

FIVE SECONDS TO DISASTER

An unexploded German bomb weighing 1,100 pounds was discovered in the very center of Sarny, a small town in the Ukraine. Sappers rushed to Sarny were presented with a very ticklish assignment. The high-explosive bomb was fitted with an unusual detonating fuse: It had a delayed-action clock mechanism and a trap which would spring when the detonator was being unscrewed from the bomb. The sappers knew that the clock mechanism was working, but for some reason or other the clock itself had stopped, and that even the lightest tap might set the clock going.

Under the direction of Junior Lieutenant Ivan Kryuk the sappers began to dig the bomb out. The plan was to melt the bottom cover with incandescent steam and get the several hundred pounds of explosive out that way. It was much too dangerous to move the bomb.

Suddenly Ivan Kryuk heard the clear, dull tick of the clock mechanism. He gave the danger signal and his men rushed for cover. But there were still people in the danger zone, so Kryuk kept trying to defuse the bomb. He managed to get the mechanism unscrewed and threw it as far away from the bomb as he could. It was not a second too soon. The mechanism exploded even before it touched the ground.

In the opinion of specialists, the clock, which had not worked for so long, had stopped when the spring of the winding mechanism straightened out. When the dirt was removed and the bomb exposed to the sun for almost half a day, the mechanism warmed up, expanded slightly, and the clock began to work. Five seconds more, they said, and the bomb would have gone off.



NEW TYPE OF LEMON

Zainutdin Fakhrutdinov was awarded the title Honored Agronomist of the Uzbek Republic for growing a new type of lemon. The first 10 lemons of the new type that reporters happened to pick up weighed a total of more than 18 pounds. In one year this agronomist obtained 15,000 lemons from only 50 shrubs.



MOSCOW KREMLIN RESTORATION

The palaces and cathedrals enclosed by the Moscow Kremlin constitute one of the most beautiful ensembles of Russian architecture extant. They represent the labor not only of the masters of the past, but also of our contemporaries who for many years have been restoring these structures, inside and outside. The difficulty of the task that faced the architects, builders, gilders and painters was increased tenfold by the fact that they had to preserve the unique monuments exactly. The restored Granovitaya Palace and the Grand Kremlin Palace have recently been opened to visitors again.

IRRIGATION SYSTEMS MODELED

Designers in the Southern Research Institute for Hydraulic Engineering and Land Reclamation of Novocherkassk, a city near Rostov, are working on several projects. The irrigation facilities on our southern rivers are enlarged from year to year. The well-equipped hydraulic laboratory makes working models of the projected systems to see how effectively they will operate under given conditions.

A THERMOMETER FOR TREES

This electronic device was designed by scientists in Petrozavodsk (in the northwestern part of the country). It is intended to measure the microtemperature of the trunks and cells of conifers to within a fraction of a degree. The microtemperature of the trunk tells whether a tree is on its final stretch or is still young. With this information selective timbering can be done with the assurance that growing trees are not chopped down.

TV FOR FIREFIGHTING

An experimental TV installation to spot forest fires, the second of its kind in the country, is operating from one of the observation towers of the Riga Forest Preserve in Latvia.

A smoke pot was hurled five miles from the observer during the tests. The man on duty was told the direction, but he could not establish the exact spot of the "fire." On the TV screen, however, the small puff of smoke deep in the forest was unmistakable.

The TV anti-fire installation is convenient and reliable. It comes equipped with a rotating optical device and a system for determining the coordinates of forest fires. Its radius of observation is six to eight miles.



MECHANICAL SPARRING PARTNER

For a sparring partner wrestlers use a cloth dummy the size of a man, which meekly puts up with throws and grips. But wrestling with a dummy is a one-sided affair —the dummy can't put up a fight.

Stanislav Suryakhin, senior instructor at the Physical Education Department of the Bauman Higher Technical School in Moscow, and Master of Sports Vyacheslav Tsyrulnikov have made a dummy that goes on the offensive.

Hinges at the hip joints make it possible to bend the upper part of the dummy in any direction. Below the hips run two hollow pipes, one inside the other. The outer pipe is covered with a cloth called porolon. Inside the inner pipe is a weight, a heavy dumbbell.

A lever mechanism keeps the weight above the hinge and the center of gravity slightly lower than the hinge. But when the wrestler begins to work out and pulls his sparring partner off the floor, the weight drops down and the dummy "comes to life." Instead of smashing down for a fall, it wriggles out, and the wrestler finds himself on the floor. When the wrestler grabs the lower part of the dummy, the weight shifts upward and the center of gravity changes again.

Suryakhin and Tsyrulnikov received an inventor's certificate for their dummy. Specialists say the "living" puppet should be a great help in training wrestlers.

TRANSCONTINENTAL CABLE

Telegraph communication between Europe and Japan, set up 96 years ago, has depended until now on a thin twin-core cable laid from Vladivostok to Nagasaki along the bottom of the sea. The line was installed by Russian and Danish signalmen, who have been working together for almost a hundred years, ever since the organization of the Danish Great Northern Telegraph Society.

In 1921 Lenin signed the first concession agreement with this society for a telegraph line between Japan and Scandinavia across Soviet Russia. Although the line has functioned reliably, it does not meet present-day needs and was not planned for telephone.

In August 1968 the Ministry of Communications of the USSR and the Great Northern Telegraph Society signed a new agreement for cable telephone and telegraph ties between Japan and Europe across the USSR.

A deep-sea cable will stretch from the Japanese port of Naoetsu along the bottom of the Sea of Japan to the Soviet port of Nakhodka, and then across Soviet territory. From Moscow one end of the cable will extend to Scandinavia, and in the future it may possibly link up with North and South America. The other end of the cable will cross the territory of Poland and the Federal Republic of Germany, and extend to Copenhagen.

The total length of the line will be more than 8,000 miles.



SELF-DOCKING PASSENGER SHIP

A new air-cushion passenger ship has been launched in Gorky (Central Volga). Although it is more than 70 feet long and 13 feet wide, a crew of two—pilot and mechanic—can handle the ship. Unlike most craft of comparable dimensions and capacity—it can accommodate 48 passengers—this river "streetcar" requires no docking facilities: The bow is so constructed that the ship can dock right at the shore.

NEW MULTIPURPOSE BUS

The Riga Auto Plant, which makes urban minibuses, needed more room and moved out of town. It is revamping its products: The new Yunost minibus is to replace the old Festival. The Yunost incorporates several improvements: larger side doors, easier access to the baggage compartment and better seating arrangements. The vehicle can also be used as a mobile TV station and as transport in underground galleries of potassium plants.



FUTURE MOSCOW IN MODEL

The Council of Ministers of the USSR has approved an over-all construction plan for the Soviet capital. It is now up to the architects to translate the figures and plans into concrete, steel and plastics. To avoid architectural miscalculations, it was decided to make a large model of this future Moscow.

The model will be striking not only for its dimensions, although they are most impressive: The city, reduced to one five-hundredth of its size, will be displayed in a 320-foot-long pavilion.

Professor Vsevolod Predtechensky, author of the model, wants the pavilion equipped with suspension crane tracks. Cranes able to raise loads of five tons will move along these tracks. The cranes will move whole districts. They will transport 30 spectators at a time in a special cabin.

An optical device, a periscope directed downward, will be suspended from one of the crane girders. Its optical characteristics will be similar to those of the human eye. As a spectator looks through the eyepiece and the periscope is lowered "inside" the model, to pedestrian eye-level, a motor will be switched on to move the crane girder. The visitor will feel as though he were strolling through the city, looking at the future buildings, squares and streets. If the height of the lens is changed slightly, he will see the city as though he were looking through the window of a car or bus. A camera attachment will shoot stills and landscape films to provide a film about a city not yet built. Not only the architects, but everyone else interested will be able to contribute to the discussion on the future capital.

NOISE STOPPERS

An otolaryngologist in the clinic of a Leningrad metal plant, Dr. Pavel Alai, had frequent cases of partial and complete loss of hearing. The ear flaps in present use, he knew, were not sufficient insulation against noise. He worked out a simple and effective technique any physician can use. In five minutes he models, right on the patient's ears, high-quality plastic noise stoppers. To show how well they work: A cotton plug lowers the noise level by one-two decibels; the plastic stopper lowers it by 30 decibels. It can hardly be seen or felt when worn.

Its minisize and lightness make the device useful to many others besides factory workers—people who live in large, noisy cities; sick people, and writers and scientists who have to concentrate.

BOOK SEARCHERS

For 20 years now the Leningrad Institute of Russian Literature has been sending expeditions to the northern regions of the country to search for old books and manuscripts. Last year alone more than 150 fifteenth to nineteenth century manuscripts were found in settlements along the banks of the Pechora, Northern Dvina and Pinega Rivers. They are displayed at the institute.

One massive volume entitled *Prologue*, which dates from the early seventeenth century, is made up of some thousand sheets written by hand and ornamented with quaint designs. The *Prologue* has tales and maxims for each day of the year. This book for home reading was in the library of the famous Solovetski Monastery, located on an island in the White Sea.

In the museum's collection of 4,000 books are calendars no larger than a matchbox, with narratives of voyages to the Near East made by Russians in the twelfth to sixteenth centuries.





GOLDEN CANE TO SOVIET CAPTAINS

The captain of the first ship to reach Montreal after the new year is presented on arrival with a golden cane. This is an old tradition. This year the golden cane went to Mikhail Siskov, captain of the Soviet motorship *Grumant*.

The ship had a difficult time reaching this distant port. Carrying 1,900 tons of shipping, it left the West German port of Hamburg on December 20, 1968 for Canada. Every captain knows what a difficult route that is in winter. For the entire journey the ship is either wrapped in fog or is battered by storm.

The *Grumant* had especially difficult sailing from Quebec to Montreal. There was no clear water on the entire journey and the ice was 16 inches thick. Great ice blocks formed. But Mikhail Siskov's experience on Arctic trips won him the prize. Other Soviet captains won golden canes in 1966 and 1967.

STONE REPLACES STEEL

Great furnaces like those used for open hearth steelmaking have been installed in the pegmatite plant of the city of Kondopoga, Karelia. The raw material they use is rock—diabase. This is the first stone casting shop in the country. It turns out stone pipes in diameters from 6 to 16 inches that are expected to have wide application in industry. They are much more resistant to the action of acids and alkalis than are steel or iron pipes.

CLIMATE-TESTED LATHE

Will a lathe manufactured under the climatic conditions of the middle belt of Russia stand up in the moist, hot climate of India? To get the answer, the people at the Chistopol Clock Factory on the Volga created an artificial Indian climate—assisted by a pressure chamber—and kept a combined universal milling machine going in it for a long period. The lathe stood up well in all kinds of "weather."

MATRYOSHKA CALENDARS

The Russian wooden toy, the Matryoshka, known the whole world over, has been put to work. Artists in Perm, a city in the northwestern part of the Urals, have converted 12 nesting dolls into a calendar. For 1969 almost a million of these Matryoshka calendars were made.

MINIATURE LATHE

The plant in Kirovakan, Armenia, which makes precision lathes is manufacturing an unusually precise miniature table model for amateur craftsmen, inventors and mobile shops. The new lathe has won high praise. Firms in about 20 countries of Europe, Asia and Africa have already placed orders.



SEA TIDE GENERATES POWER

This winter the Kislogub experimental tidal power plant in a gulf of the Barents Sea, not far from Murmansk, the first power plant of its kind in the Soviet Union, generated electricity. Not only is the plant itself unique, with its turbine rotated by sea tides, but the way the station was built. The reinforced concrete building was constructed on Cape Prityk not far from Murmansk, where it was relatively easy to transport materials. Then the building was lowered into the water. The 5,000-ton structure was towed like a huge ship by two tugboats, for 60 miles, until it arrived at the reinforced concrete foundation that had been prepared for it.

The capacity of this power plant is not great, only 400 kilowatts. But in time, when a second turbine is installed, its generating capacity will double.

The Kislogub tidal plant is the brain child of the staffs of 34 research institutes, laboratories and design offices. It is serving as a school for a new type of hydroenergetics. Specialists have begun to study the station's complex working regime, planned with the aid of computers.

A similar plant, with a capacity of 3,200 kilowatts, is now being designed for the Lumbov Gulf of the Barents Sea, and others with even greater capacity are planned.



WEATHER REPORTS FOR DRIVERS

A three-sided reinforced concrete pillar more than 30 feet high has been installed on the Echmiadzin Highway in Armenia. The pillar is a mammoth thermometer with figures that drivers can read from a distance. Every 15 minutes a loudspeaker in the pillar broadcasts a detailed weather report.

ARCTIC MUSEUM OF ARCHITECTURE

Landmark wooden structures, typical of old Russia, are to be moved to a projected museum on the Kola Peninsula and there restored.

A northernmost reserve of this type was prompted by the fact that most of the historical and cultural monuments of the Arctic region are in places difficult of access to tourists.

Visitors to the museum will see the seventeenth century wooden Church of the Assumption, from the village of Varzuga (on the southern shore of the Kola Peninsula), a Saam dwelling, unique coastal huts from the southern shore of the peninsula, and a so-called labyrinth which, scientists believe, is a Stone Age religious structure.

The museum will be located some 30 miles south of Murmansk on the bank of the Tuloma River, in landscape characteristic of the Murmansk Region: beautiful lakes, great boulder ridges, turbulent rivers and virgin forest. The country is ideal for winter sports and within easy reach. Soviet and foreign tourists are welcome.

TOURIST SOUVENIRS

Artists and designers of the Moscow Color Casting Studio have prepared over 25 different kinds of souvenirs. Original candlesticks, wall panels and decorative boxes based on old Russian motifs are now available to Soviet and foreign guests of the capital.

FIRST ANNIVERSARY OF MOSCOW—NEW YORK AEROFLOT SERVICE

10,000 passengers

July 15, 1969, will mark the first anniversary of regular flight service between Moscow and New York. On that date exactly a year ago a giant IL-62 airliner made its first landing at the Kennedy International Airport in New York. In connection with this the Editors of SOVIET LIFE magazine addressed some questions to Vladimir Samoroukov, the general representative of Aeroflot Soviet Airlines in the United States.

Question: *What changes have occurred on the Moscow—New York airline during its first year?*
Answer: *To begin with, the number of flights has doubled. Last summer and winter seasons Aeroflot and Pan American each made one flight a week. As of May 1969 till the end of September both companies make two flights a week.*

Aeroflot scheduled flights are on Tuesdays and Thursdays from New York to Moscow and on Mondays and Wednesdays from Moscow to New York. The time of departure from New York is 2:55 P.M. local time; the time of arrival in Moscow next day is 9:30 A.M. Moscow time.

Pan American flights are on Mondays and Fridays from New York.

Question: *How many passengers did Aeroflot carry on this route during that period?*
Answer: *It flew 10,000 passengers, including 4,000 from New York to Moscow.*

Question: *What is the percentage of American and Soviet passengers on Aeroflot flights?*
Answer: *Approximately 40 to 45 per cent are American tourists, businessmen, scientists and other American citizens.*

Question: *What are the figures for Pan American Airways?*
Answer: *Pan American had 5,000 passengers during the same period.*

Question: *How and where can one book a passage or buy a ticket for an Aeroflot flight?*
Answer: *Under the agreement on mutual services between Aeroflot and Pan American, the latter is our general sales agent in the United States. That means that all tickets for Aeroflot flights in the United States are sold and reserved by Pan American agencies. For any further information write to Aeroflot Information Office, 45 East 49 Street, New York 10017, or telephone 212-752-3030.*

Question: *Has Aeroflot similar agreements with other American airlines?*
Answer: *Aeroflot has commercial agreements with TWA, United Airlines, American Airlines, Seaboard World Airlines, Eastern Airlines, to mention only a few.*

Question: *What can you say about the American tourist market?*
Answer: *It is big and complicated. SAS, KLM, Sabena, Air France, Air Canada, Air India and other airlines fly planes from the United States via Europe to the Soviet Union. They are commercially experienced and closely cooperate with many American tourist agencies. Since the American tourist market is new to us, we are doing our best to establish contacts with American tourist agencies. Last year we successfully cooperated with Afron Tours, Embassy—Bon Vista Holidays, ASTRO Tours and International Travel and Documentation Tours.*

Aeroflot and Intourist (USSR company for foreign travel) in cooperation with the above American agencies worked out a number of special tours around the Soviet Union, for example, a tour of places connected with the life and activities of Vladimir Lenin, whose one-hundredth birth anniversary will be celebrated next year, and tours called "A Great Siberian Route" and "Fly and Drive."

We are most hopeful that Aeroflot will in time occupy as worthy a place in the American tourist market as it does in Europe, Asia and Africa.

Question: *What in your opinion are the prospects of the Moscow—New York airline?*
Answer: *Perhaps Aeroflot will make nonstop flights between New York and Moscow in the future.*

Question: *Will the supersonic TU-144 jet operate on the Moscow—New York route?*
Answer: *It is quite possible that Aeroflot will use the TU-144 on this run when it begins flying commercially in 1970. Flying time between New York and Sheremetyevo Airport in Moscow would be shortened considerably.*

In conclusion I would like to say the Moscow—New York arline is of great importance for enhancing peaceful cooperation between the Soviet Union and the United States and for facilitating wider economic and cultural ties between our peoples.



CAN WE HELP YOU WITH YOUR RUSSIAN?

Dear Readers!

Would you like a course in basic grammar, or would you rather have lists of idiomatic words and phrases?

Do you prefer reading selections from contemporary works or excerpts from the classics? In the original, of course!

So many people seem to be studying foreign languages these days that SOVIET LIFE decided to add a "Learning Russian" column to its other feature articles.

Let us know the type of lessons you want, and we'll work it out so that you get them.

Editors

QUERIES FROM READERS

QUESTION: How many years will it take till the rest of your population will move into new houses? (Harry Feldstein, Los Angeles, California)

ANSWER: It is difficult to say exactly; there are too many factors involved. But we do know that the rate of housing construction has increased markedly. In the past 10 years almost half the population has moved to new or to better housing. This means that some 115 to 120 million people still live in old houses. However, some of these families have fairly good housing; there is no urgent need for them to move. As far as the others are concerned, they are allocated new housing as soon as it is built. Some 10 to 11 million people annually move to new houses. For the 1966-1970 period 45 billion rubles were budgeted nationally for housing and municipal construction.

QUESTION: Are all collective farms electrified? Are there still villages in the USSR without electric light? (Harry Feldstein)

ANSWER: About 97 per cent of all the collective farms now have electricity. To appreciate the figure, compare it with the situation 20 years ago when only 15 per cent of the collective farms used electricity. There are still remote corners of our big country without electricity, but they won't be for long.

QUESTION: What is the percentage of the urban population in the USSR? How many cities have a population of over 100,000? What is the population of such cities as Kazan, Tbilisi, Chelyabinsk, Donetsk, Odessa, Perm? (Harry Feldstein)

ANSWER: Today 55 per cent of the country's population lives in cities and towns. We have 204 cities with a population of more than 100,000, including eight with over one million. Kazan, the capital of the Tatar Autonomous Republic, has a population of 837,000; Tbilisi, the capital of Georgia, 866,000; Chelyabinsk, a major industrial center in the Southern Urals, 851,000; Donetsk, a coal and steel center in the Ukraine, 855,000; Odessa, a Black Sea port, 797,000; and Perm, an industiral city in the Western Urals, 811,000.

QUESTION: I would like some information on the men who first explored Alaska. (Karl Matthew, Mt. Morris, Michigan)

ANSWER: In 1648 three Russian *kochas* from the north sailed into the straits separating Asia and America. These were single-masted ships some 65 feet in length, with sails made of reindeer skin. When there was no wind, the crew took to the oars. Semyon Dezhnev, a Cossack and seafarer, decided to skirt the northeastern extremity of Siberia in one of the ships. As a result of this trip Dezhnev became certain these were straits, but he never reached the other continent. There is some conjecture, with no verification, that several of the men who participated in the expeditions and whose fate remains unknown managed to get to Alaska. After Dezhnev others were reported to have reached the mysterious continent. However, the first authentic information about Alaska came only in the eighteenth century. The source was the Great Northern Expedition which lasted from 1733 to 1743. The 13 ships with a complement of 600, excluding the families of the crew, were commanded by Vitus Bering, a Russianized Dane. The Russian seafarers provided a detailed description of the coastline of northeastern Siberia and the strait between the two continents, later named for Bering. Cartographers used their data for two centuries.

Bering was also commissioned to reach the American coast. In the summer of 1741 two packet boats—*Saint Peter*, with Bering commanding, and *Saint Paul*, with Alexei Chirikov, Bering's closest associate, commanding —left the Avachinsk inlet and headed for Alaska. The *Saint Paul* was in the lead, but the ships lost each other in a storm. Bering reached the North American coast at Kayak. On the return trip he discovered several islands, including part of the Aleutians. On November 5, 1741, his packet boat reached islands which were then unknown, the Komandorsky Islands, where the crew was forced to spend the winter. There Bering and many of the crew died from scurvy.

Chirikov got to Alaska before his chief and then returned to Russia. His report to the Admiralty was the first factual description of America's northwestern coastline and the first description of the Aleutians. One of the islands in the Gulf of Alaska is named after Chirikov.

Subsequently other Russian expeditions explored Alaska. In 1784 Grigori Shelikhov, a trader, founded the first Russian settlement on Kodiak Island. His primary interests were fur and hunting, but he also did some exploration and taught the natives handicrafts and farming. Shelikhov's report was published in St. Petersburg. Other traders followed him, and in 1799 the Russo-American Trading Company was set up and authorized to explore and develop land not occupied by other countries.

QUESTION: Is it possible and, if so, what is the proper procedure in ordering jewelry or other items from the USSR? (John L. Crow, Raleigh, North Carolina)

ANSWER: Write to V/O Vneshposyltorg, 32/34 Smolenskaya-Sennaya Ploshchad, Moscow, G-200, USSR. Vneshposyltorg will ship jewelry, but the minimum order must be 50 dollars. Both Russian and English books are handled by Mezhkniga, but may be ordered directly from these bookstores in the United States:

Four Continent Book Corp.
156 Fifth Avenue
New York, N.Y. 10010

Victor Kamkin Book Store
1410 Columbia Road, N.W.
Washington, D.C. 20009

QUESTION: I am interested in Siberian huskies and would appreciate any information concerning their history. (Robert Sutcliffe, Stony Brook, New York)

ANSWER: There are West Siberian and East Siberian huskies; the East Siberians are larger. The several varieties of this breed all have common features: erect pointed ears, upturned tail, wedge-shaped head and thick fur. The coloring varies. Height runs as much as two feet.

Huskies are smart dogs with unusual strength and endurance. They are superb hunters, especially for wood grouse (a cautious but overcurious bird that pokes out its head to see what the dog looks like and forgets about man) and for squirrel, marten and sable, which take cover in trees. Nor is the dog afraid of big animals. It will even force a bear to stand up on its hind legs. In Siberia the husky is always used to hunt the master of the taiga.

Its direct ancestors are the primitive dog, known as the peat spitz, and the tamed wolf. The breed was improved in the course of many centuries by ordinary selection and by Siberian hunting tribes. Scientific breeding of huskies is relatively recent, since the first All-Russia conference of dog specialists held in 1947. Husky kennel farms were set up then to raise pure-bred dogs. Trappers now get their pups from these farms.

Far North reindeer dogs and sled dogs are sometimes confused with huskies. The breeds are similar, but the husky is smaller, not as strong and requires more attention.

QUESTION: I would like to get some information on coal mining in the USSR. The types of machines used and the amount of coal produced per man, also the hours worked per week and the pay received. At what age do miners retire and what is the amount of pension they receive? (W. L. Craucher, Vandergrift, Pennsylvania)

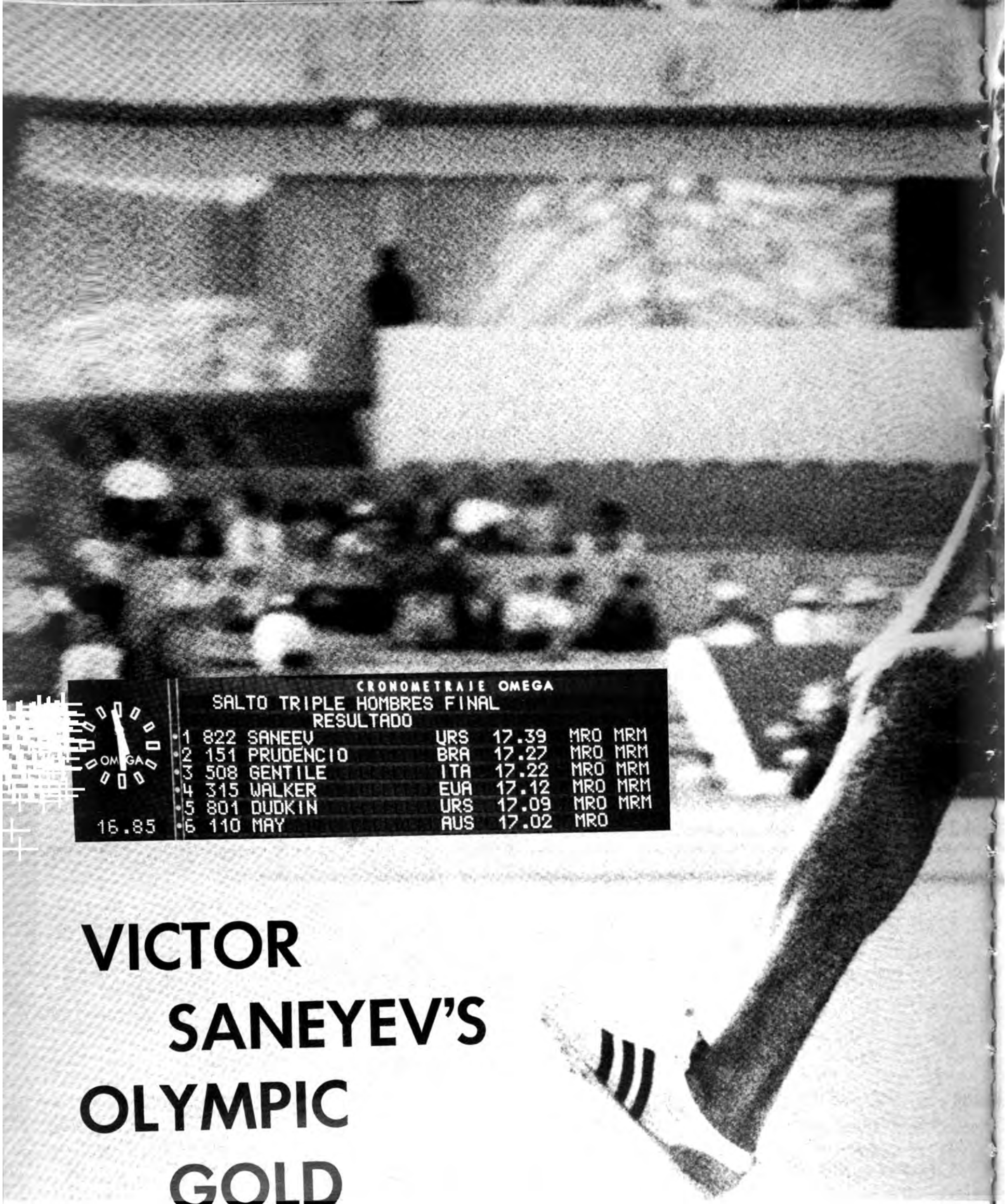
ANSWER: We use coal stoping combines, coal cutters, tunneling combines, loading machines, scraper and ribbon conveyors and electric locomotives. Our coal mining is almost entirely mechanized. Hauling and railway loading is fully mechanized, loading in the stopes is 74.1 per cent mechanized, and loading coal and rock in horizontal drifting is 81.3 per cent mechanized.

Our mines extract almost 600 million tons annually and employ one million people, which means an output of approximately 600 tons of coal per employee.

Workers in the industry put in a 38-hour week on the average, and almost 60 per cent put in a 36-hour week in line with the law reducing the workday on underground jobs. The average wage in the coal industry is 200 rubles a month, but some miners earn considerably more. A tunneler or a coal combine operator, for instance, makes 300 to 400 rubles a month.

Other privileges include medical treatment in sanatoriums and at resorts at a discount or free of charge at the expense of the trade unions, rent averaging some seven per cent of a miner's earnings and free medical services.

Miners retire on pension at 50. The size of pensions varies, the maximum being 120 rubles a month.

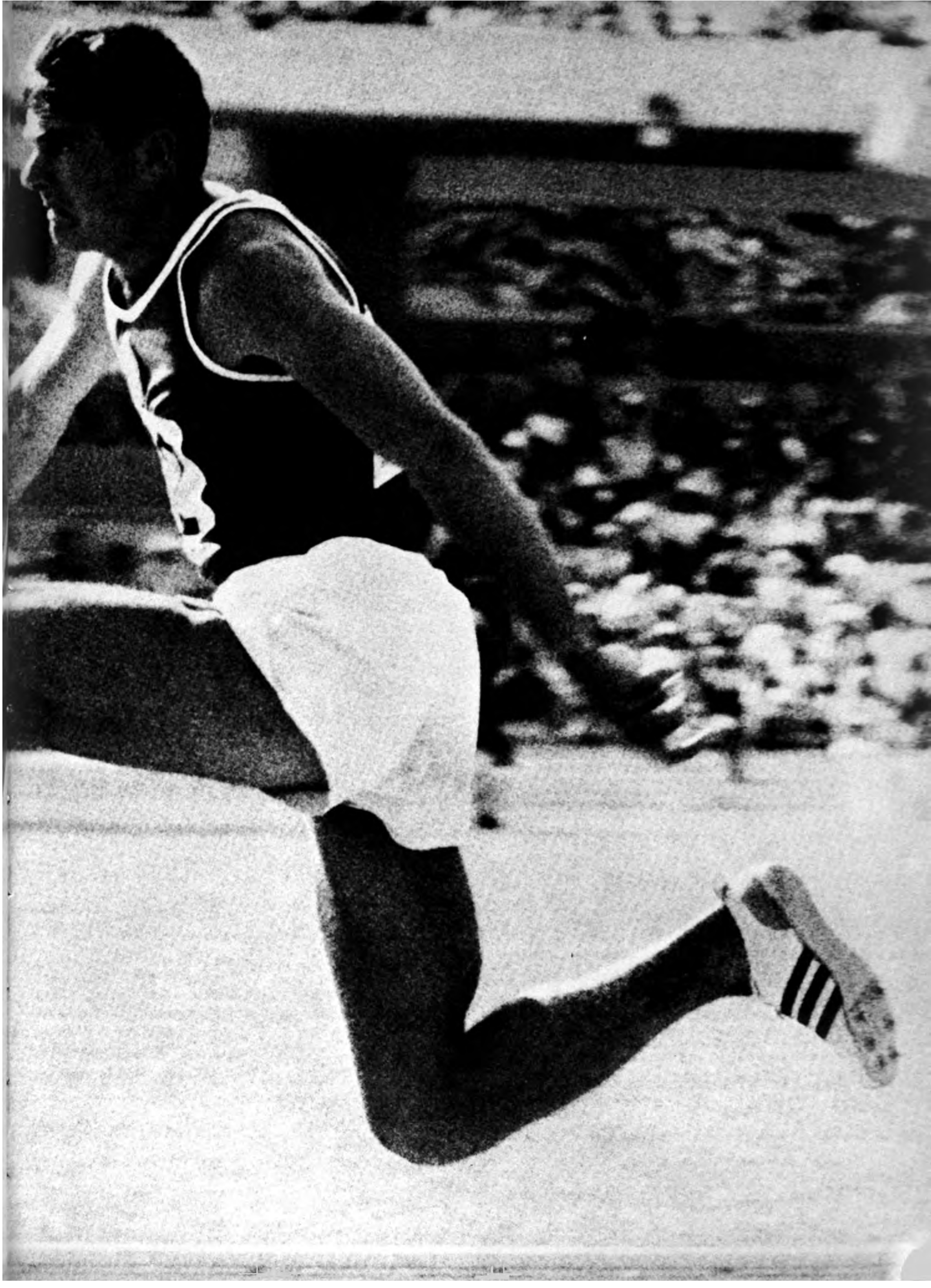


VICTOR SANEYEV'S OLYMPIC GOLD

By Alexei Srebnitsky

Sports Commentator

Photographs by Lev Borodulin



VICTOR SANEYEV, an agronomist from the Georgian city of Sukhumi, was very pleasantly surprised when Soviet sports writers pronounced him Sportsman No. 1 for 1968. The "Sukhumi Kangaroo" was frank to admit that he believed figure skaters Ludmila Belousova and Oleg Protopopov would share the title. His own place on the list, he thought, would be much more modest.

This 23-year-old athlete, who won the triple jump in Mexico City with a new world record, had been neither an Olympic nor a world record holder, not even the national record holder. He did have a weighty enough win to his credit in the European Cup, but at the European winter games held in the Olympic season Saneyev lost first place by ¾ of an inch to another Soviet jumper, Nikolai Dudkin. Still, in their pre-Olympic forecasts, sports commentators were practically unanimous in naming him the triple-jump champion.

What was there about Saneyev they liked so much? Stable showings? His series of wins in the pre-Olympic summer? At times it seemed that he was wearing himself thin. The Olympics were still ahead; you were supposed to make haste slowly, spare yourself. But in every contest he went all out for a record, getting closer and closer, winning the contest and sadly waving aside congratulations, for there was still no record.

Of course, there is something appealing in such a spirit. But there is this other thing about Saneyev that won people: The first time you see him, you know that you are looking at a sportsman, a real sportsman, the kind even people far removed from sports picture to themselves. Tall (6 feet 2 inches), slim, strong.

A whole year before the Games he had decided to become an Olympic champion. Outsize ambition! It was only in 1967 that Victor cleared 52 feet 5¾ inches, when the current world record was 55 feet 10¾ inches.

Then came Mexico City. His last attempt. A powerful run, good landing, arms thrown up. The new champion can't tear his eyes away from the giant flickering figures "17.39" (57 feet). He sees no one, not even his trainers who have invaded the sector through the barrier of judges.

Saneyev on Himself

"How did it happen? I suppose the same way it does to everybody else. School, track and field competitions. I did better than anyone else in the long jump; I was springy in general. A tall stranger approached me: 'Do you want to train? But seriously!' That's how I met Akop Kerselyan, my present trainer.

"I live in Sukhumi, as I did then. The local papers still get my name wrong, turning it into the Georgian Sanaya. But I'm a Kuban Cossack by descent. In 1929 my parents moved from the Kuban to Georgia.

"Soon after meeting Kerselyan I won my first sports certificate for the long jump in a municipal children's competition. The result wasn't too bad: 14 feet 1⅛ inches. Then I parted with my trainer for a long time. We moved to the small town of Gantiadi on the Black Sea coast. I lived there for six years, went to a boarding school.

"Not far from Gantiadi is the village of Leselidze, where many athletes come to train. They hold trial competitions there too. That's where I saw Valeri Brumel and Igor Ter-Ovanesyan. Igor and I are friends now, but then he was a god to me. Imitating the gods, I began training: gymnastics, dashes, cross-country running. I worked up so much enthusiasm that my studies began to suffer. Up to the ninth grade all my marks were excellent.

"At first, track and field athletics and I did not take to each other. I was growing too fast. In one year, from 1959 to 1960, I stretched up 4½ inches. So I tried basketball. It seemed to be coming along. But here my old acquaintance, Kerselyan, suggested I take up jumping seriously. I agreed.

"On finishing school, I went to Moscow and enrolled in the Power Engineering Institute. I flunked my composition and returned to Sukhumi. So as not to waste a year, I took a job as a grinder in a foundry. In the meantime I competed in the school spartakiad of Georgia."

Making a Choice

This 1963 spartakiad started Victor Saneyev on his career as a triple jumper. He won three first places by doing the 100-meter dash in 10.9 seconds, clearing 22 feet 8¾ inches in the long jump and 48 feet 9⅝ inches in the triple jump.

His showing in the triple jump was even more unusual considering that he had racked up a not too promising 43 feet 7½ inches in his first official competition. And now a whole 5 feet 2 inches more. No other jumper anywhere had ever shown such progress after only half a year of training.

How did he do it? Hard work? Of course. Modern training methods? No question. Akop Kerselyan knows all the secrets; no wonder nearly all Georgian record holders in the last 15 years have been his trainees. But another, probably the most important, element in Saneyev's success is that by character he belongs with that breed of champions which includes Valeri Brumel, Bob Beamon and Igor Ter-Ovanesyan.

But for a long time Victor was not sure he wanted to specialize in the triple jump.

"The triple jump," he says, "though I hate to admit it, is not the most popular track and field event by far. Why, I don't know. We have many outstanding performers: Leonid Shcherbakov, Oleg Ryakhovsky, Vitold Kreer, Vladimir Goryayev, Oleg Fedoseyev. . . . We've brought back Olympic medals, both silver and bronze, from Rome and Tokyo. And still young and gifted jumpers are more attracted by the fame of Brumel and Ter-Ovanesyan.

"Why? Maybe it's because for so long none of us could get anywhere near the world record set by the Pole Jozef Schmidt. He topped the 17-meter (55-foot 9⅛-inch) mark and stayed the triple jump record holder for years. In the meantime, both Europe and America developed a large group of very good jumpers. American Arthur Walker, an experienced and serious competitor, I thought was one of the most













likely gold medal winners, and I was surprised when he made his remarkable jump of 56 feet 1⅞ inches only on his last attempt.

"That was in Mexico. But then, before the Olympics, we were all treading water just short of the 17-meter mark, as if afraid of overstepping it. This did nothing to promote the popularity of our event. It was obvious that the triple jump record was lagging behind the times, behind the records in other track and field events.

"At first I concentrated on the high jump. Kerselyan did not object. And I was already clearing 6 feet 2¾ inches, when I injured my knee—something that happens to so many high jumpers—and that left me with only two choices: the long jump or the triple jump.

"In May 1967 at the track and field competition of the Transcaucasian republics, I won not only the triple jump, with 53 feet 9½ inches, but also the long jump, with a pretty good showing for those days of 25 feet 10⅞ inches. At the Spartakiad of the Peoples of the USSR held in the summer of the same year, I took second place after Ter-Ovanesyan in the long jump and only fourth place in the triple. All the scoldings I had to take, both oral and written! I was on the verge of giving up the triple jump altogether, especially since Ter-Ovanesyan—we were friends by then—could give me a lot of valuable advice if I decided to be his stand-in."

A Reserve to the Last Minute

"Still I was included in the national team for the 1967 European Cup. True, as a reserve. And that was fair enough: Though I did win several major competitions in the summer, Alexander Zolotaryov's showing was better. He had just set a new USSR record of 55 feet 6 inches. To the last minute, national team trainer Vitold Kreer kept it a secret which of us would compete. In Kiev, on the eve of the finals, he joked around: Consider yourselves cosmonauts—the one who has a better night's sleep will compete. We both showed up at the stadium in our training suits. It was already time to board the bus for the grounds. Only then did Kreer say: Get ready, Victor. Alexander won't be jumping; an old injury of his is acting up.' I was already beyond the point where I could be glad for the chance. Then suddenly I got angry, and won, even though I was up against the best triple jumpers of the continent. Well, now one thing was clear: I would compete in the triple jump in Mexico.

"True, I was also moved by purely practical considerations. I thought: Well, what can I expect to do in the long jump in one year? Eight meters (26 feet 2⅞ inches)? Not enough against Ter-Ovanesyan, Beamon, Boston, Davies. But in the triple jump I could compete for a medal. Even a gold medal."



(Top) An athlete's big moment. Brazil's contestant was No. 2 and Italy's No. 3.

(Center left) At a Moscow reception for the USSR team. Victor, who is the picture of an athlete, is favored by the ladies.

(Center right) An Olympic gold. A new world record in the triple jump was set by the 23-year-old agronomist from Georgia.

(Bottom left) Victor's alma mater, the Institute of Subtropical Crops in Georgia, presented him with this tangerine wreath.

(Bottom right) The victory celebration. In Victor's town, sombreros are the style.

(Above) Who is wearing the happier smile? The Olympic champion or coach Kerselyan?

Considerations Justified

In the Olympic year 1968 Saneyev became USSR champion. Several months before that he had passed his graduation exams at the Georgian Institute of Subtropical Crops. The newly-trained agronomist, specializing in citrus crops and tea, remained on the faculty of his institute, where he still works.

He returned from Mexico in a night-black Mexican sombrero with gold braid, the kind that was only presented to champions.

"Before my last attempt," Saneyev told the reporters at Sheremetyevo Airport, "I looked up at the grandstand at Kreer and Kerselyan—Kerselyan obviously upset, clutching a teak cane he had brought along. It's supposed to be lucky to hold teak. Kreer did his best to look calm. But later, after my jump, he cried with joy. Then I was calm."

More Forecasts

Victor Saneyev was sure of victory and he won. That is another and, perhaps, the most important reason for his success. But there are athletes who do not have his certainty. Examples are high jumper Valeri Skvortsov, who had a bad case of nerves, and Saneyev's idol Ter-Ovanesyan and our Nadezhda Chizhova, who couldn't rally after bad upsets by Bob Beamon and Margit Hummel.

Saneyev was not groggy after the successful jumps of his rivals. He had faith in himself and it paid off.

After the Olympic Games, Victor gave himself no vacation. Just before New Year's, he was asked to Moscow for a government reception. The reception was held in the evening and the next morning the champion was in the gymnasium of the Moscow Young Pioneer Stadium. He trained with Brumel, who was just beginning his comeback. And he trained hard.

This year little has changed in his life. He still does not spare himself at training sessions, still thinks Robert Beamon is the world's best sportsman ("His record will stand for at least 50 years."), and he is still not married.

But there is a bit of news. Saneyev hardly does any triple jumping.

"I'm not a good sprinter," he explained. "One hundred meters in 10.9 seconds or 10.8 at the very best. That is why Kerselyan and Kreer have me pay more attention to short dashes. I also do long jumping to better my take-off speed. I even compete in the long jump. As for the triple, I'll probably do that in September, at the European Championship."

Saneyev believes that a realistic showing for a new record is 17 and a half meters (57 feet 4⅜ inches). But he is also sure that he is not the only one who can be expected to set it. Professor Nikolai Ozolin, an authority on such matters, has worked out a formula. It goes like this: The record-breaking result in the triple jump will be equal to double the record setter's result in the long jump plus another 5 feet 10¾ inches. Saneyev cleared 25 feet 10⅞ inches in the long jump back in 1967. Since then he has improved.

So, theoretically, Victor Saneyev is ready for longer flights.

POWER LINES GO

VISITORS to the Munich industrial fair of 1882 stared in amazement at the stream of water pouring out of a pump. There was nothing unusual about the water and the pump, nor about the electric motor that powered the pump. What was sensational was that the electricity came from a steam-driven generator in the small town of Misbach, all of 35 miles away.

This was the world's first power transmission line, built by a French engineer named Marcel Deprès.

In the nearly 100 years since, the spidery outlines of power pylons have become part of the landscape. Power engineers have been working hard and stubbornly to increase transmission voltages so as to reduce power losses. The lines from the Volga power dams at Kuibyshev and Volgograd to Moscow were the first to operate at 500,000 volts. A 750,000-volt line from Konakovo to Moscow is now functioning, and a one-million-volt line is in the offing.

Apart from the purely technical problems, high voltages create many dangerous surprises for the lineman. As protection against the extra-strong electrical fields in the vicinity of the lines, he must wear a special costume screened with silver threat, and massive cables must connect his helmet, overalls and shoes.

Power transmission over distances of 2,000 or 2,500 miles, from Krasnoyarsk in Siberia to Moscow, for example, calls for even more than one million volts. An obstacle to higher voltages is insufficient electrical resistance of the air itself, with the consequent danger of breakdowns. The cables could short-circuit to earth or to themselves. The only preventive is gargantuan pylons and mammoth insulators. But costs would soar catastrophically.

Astronomical voltages would not do away with losses, though. According to the most cautious estimates, one out of every 10 kilowatts transmitted along high tension networks is lost in the form of heat. If engineers do not learn how to cut network losses, the equivalent of dozens of Dnieper Dams* will be doing nothing more useful than warming the winds.

Figures and Feelings

"Superconducting power transmission lines have been invented many times in the past 50 years."

Those skeptical words come from an authority on the physics of superlow temperatures. Indeed, there has been no shortage of ideas for lines of this kind ever since superconductivity was discovered at the beginning of this century. The prospect of eliminating all problems and power losses at one go by delivering electricity along a superconducting line was tempting. In the thirties Nikolai Kalashnikov, a Moscow engineer, took out the first patents on the design for a superconducting power transmission line. Then, as now, the big problem was how to keep the temperature close to absolute zero all along the line. But this did not worry the inventor particularly. He suggested putting the cable inside a pipe through which liquid nitrogen would be pumped continuously. Nothing came of the idea because the temperature of liquid nitrogen is minus 196°C. while superconductivity begins at temperatures 50 to 60 degrees lower.

Low temperatures were not the only hitch. If Nikolai Kalashnikov had known more of the history of physics he would not have applied for a patent. At the time the only superconducting materials known were pure metals, but, alas, they lost their superconductivity as soon as a strong current was passed through them. Totally unaware of this, Kalashnikov continued working on his invention.

Although his ideas were never incorporated in a transmission line, they did serve as a starting point for other investigators.

For several decades physicists studied superconductivity in the quiet of their laboratories. They accumulated information and worked on theoretical problems, giving no thought to practical applications.

That was the situation until 1961, when Bell System researchers in the United States announced a major breakthrough: They had sent electric current with a density of a thousand amperes per .0015 of a square inch through a piece of niobium-tin superconducting wire placed in a powerful magnetic field. By comparison, current density in ordinary generators, transformers and dynamos is no more than 10 amperes per .0015 of a square inch.

This led to a revival of interest in the long-forgotten idea of a superconducting transmission line. Vladimir Okolotin, a graduate student at a Moscow college, chose this as the subject of his thesis for the degree of Master of Science.

Prominent scientists with whom he spoke were skeptical.

Doctor of Physico-Mathematical Science Vladimir Zavaritsky of the Institute of Physical Problems of the USSR Academy of Sciences put it bluntly: "Those superconducting transmission lines again? What's the use?"

The scientists had grounds for skepticism. Tempting though the idea was, colossal difficulties stood in the way. Not that they were insuperable as such, but the consensus was that superconducting transmission lines would turn out to be unprofitable.

But so far all the pros and cons were founded on feelings, and these are an unreliable foundation for scientific or economic forecasting.

Could a pilot line be built, or at least a scale model? No, this was out of the question because of the prohibitive cost.

The mosaic of data accumulated by physicists, low temperature technologists and power engineers had to be shaped into an over-all picture of a superconducting transmission line. Construction, operation, maintenance and many other aspects all had to be planned. And Vladimir Okolotin set out to do just that.

Is the Game Worth the Candle?

Notwithstanding all the advances in theory and practice, the operating temperature of the most "heat-resistant" metallic superconductors is extremely low, about 17 or 18 degrees above absolute zero. Until a short time ago such a temperature could be obtained only in the world's best laboratories—the practical problem was to maintain it over distances of thousands of miles.

The only suitable "carriers of cold" are liquid hydrogen and helium. Taking into ac-

* The Dnieper Dam (588,000 kilowatts), built on the Dnieper River in the Ukraine in 1932, was the Soviet Union's first big hydroelectric station.

count the desirability of having a "temperature reserve" for unforeseen situations, only helium remains—and there is not very much of it on our planet.

In the future helium may be readily available, however; in the final analysis it will be simply a by-product of thermonuclear energy. A more realistic line of reasoning is that since helium has been used until now only in laboratories and occasionally in dirigibles, there is no particular demand for it; when a demand arose the supply could probably be increased.

It looks as though the only possible superconducting transmission line today is an underground cable inside a pipeline cooled by liquid gas. Its design is quite simple. In the center is a steel pipe two inches in diameter. Its inner surface is covered with a thin film of a superconducting niobium-tin alloy which is bathed in liquid helium. The current density in this film could reach one billion amperes per .0015 of a square inch. The pipe is set in a vacuum surrounded by another pipe, consisting of two layers between which liquid nitrogen is pumped. All this is inside still another pipe in which a vacuum also has to be maintained. But even a vacuum cannot offer sufficient protection against heat. Take the sun's rays, which carry heat after passing through more than 93 million miles of void.

A reflector consisting of powdered copper or aluminum scales would be placed between the pipes as a barrier against heat. To maintain a constant vacuum, gases that filter into it have to be either absorbed or pumped out. Further, all the elements of the cable are under a rather high voltage, which means that electrical insulation is also needed. The inner walls of the pipes must be mirror-smooth so that vortexes of liquid helium or nitrogen do not generate heat inside them.

The line's economic feasibility depends on the standard of the heat insulation. To remove a unit of heat from liquid helium we must expend from 500 to 1,000 times more energy than that unit itself contains. Unfortunately, there is no such thing as absolute insulation. Refrigeration plants will have to be built every 90 miles along the line to prevent the nitrogen and helium from evaporating.

When construction is finished, starting up the line will be a long and complicated job. First, compressed gas will have to be blown through the pipes. Next, liquid nitrogen and then liquid helium will have to be pumped in. It will take about a month to cool to working temperature the 20,000 tons of pipe and heat insulation in a line 620 miles long. The refrigeration plants will have to work at full capacity all this time, before the first current is fed into the line. The starting up operations will consume about eight million kilowatt-hours of electricity, at a cost of not less than 40,000 rubles. The cost would be about the same every time the line was started up. It is obvious that the cooling system must function continuously, with losses of cold during maintenance and checking kept to a minimum.

Superconducting transmission lines are clearly more complicated to operate than conventional lines. Is the game worth the candle? Vladimir Kirillin, Vice-President of the USSR Academy of Sciences, says it is. "The outlays involved in maintaining an extremely low temperature inside the current-carrying lines would probably be recouped thanks to the absence of power losses in transmission lines of this kind."

Superconducting transmission lines have many other advantages besides the elimination of power losses. Many more advantages, in fact, than shortcomings.

A Long List

Item: Huge deposits of natural gas have been discovered thousands of miles from Moscow, under northern snows and southern desert sands. It is planned to build pipelines of record length and with diameters of as much as 10 feet to pump the gas to the industrial regions in the central part of the country. But does it make sense to lay such giant pipes all that distance? Why not lay pipes of smaller diameter and pump liquefied, supercooled gas through them? We now have a network of storage reservoirs for liquid gas. And since the routes of gas pipelines and power transmission lines often coincide, the two could be combined. Instead of pumping liquid nitrogen back and forth to cool a superconducting power transmission line, liquefied natural gas could be sent through the line's protective pipes. The gain would be enormous, making superconducting transmission lines fully profitable.

Item: Power lines hang motionless between the pylons, and the current flows silently through them. But blizzards rip cables or cover them with such a heavy sheet of ice that they break. Helicopter-borne linemen have to patrol many high-tension lines summer and winter.

An underground cable is protected against rain, snow and sleet and does not need constant supervision.

Item: For dozens of feet on either side of high-tension lines there stretch protective zones where nothing may be built. The zones take up hundreds of square miles of land, mainly near big cities, where land is particularly costly. Besides, they sometimes disfigure the landscape, as in the holiday resort areas of the Crimea, the Caucasus and the Baltic seaside.

An underground cable is out of sight and takes up no land space.

Item: Conventional overhead transmission lines have a definite capacity. Building a line with a big reserve of capacity is too expensive. If the demand for electricity doubles, you either build a new line or else resign yourself to power losses four times as high as before.

This problem does not exist for a superconducting line, whose capacity is practically limitless. A single cable could carry the electricity generated by all the country's power plants put together.

Item: The greater the voltage of a conventional line, the lower the power loss. But a line operating at hundreds of thousands of volts is not laid into the heart of a city. Step-down substations have to be built. Each one occupies a lot approximately one third of a mile square, filled with insulators, high voltage switches and arc-quenching devices, crisscrossed with pipes carrying compressed air, and resounding with the din of compressors. Around Moscow there are dozens of substations of this kind. Along the journey from a step-down substation to the consumer just as much power is lost as along the thousands of miles of the transmission line itself.

A superconducting line could be brought right into the heart of a city and the electricity distributed directly from there. The power loss would be minimal.

Item: Power engineers now have to go to a lot of effort to raise or lower voltages. Each kilowatt of generating capacity at a power station calls for an average of four kilowatts of transformer capacity. Transformers have developed into giants. The only factor that now limits their growth is the carrying capacity of railroad cars.

A superconducting line often will not have any transformers at all. Current will flow to the cables directly from the bus bars of generators.

Incidentally, generators themselves could be built with superconducting windings, which would open the way to a practically unlimited increase in capacity. Today increases are restricted by railroad carrying capacity, in addition, of course, to various other factors. For instance, steel men cannot make blanks as large as the power engineers want.

Superconducting windings would allow practically any increase in current density. In other words, the capacity of generators could be increased without having to make them larger.

This list of advantages could undoubtedly be enlarged.

An Impartial Judgment

Before there could be any question of building a superconducting line, its pros and cons had to be weighed impartially. Vladimir Okolotin did this with maximum precision. He calculated the cost of every cubic yard of helium, every pound of insulation and superconductor, compared losses, operating expenses, the probability of breakdowns and many other factors, and came to the conclusion that even today superconducting lines would be cheaper and more profitable than conventional lines in many cases. When he reported on this to the Dubna Institute of Nuclear Research, the Moscow Teploproekt power engineering design institute, and the Kurchatov Institute of Atomic Energy, his ideas won the support of scientists and engineers everywhere.

Vladimir Okolotin won his master's degree, and the first superconducting line is now being designed under the guidance of Professor Valentin Venikov, a Lenin Prize winner. The line will deliver electricity from Bratsk Dam in Siberia to the electrolysis baths of an aluminum plant, where huge amounts of current at low voltages are needed.

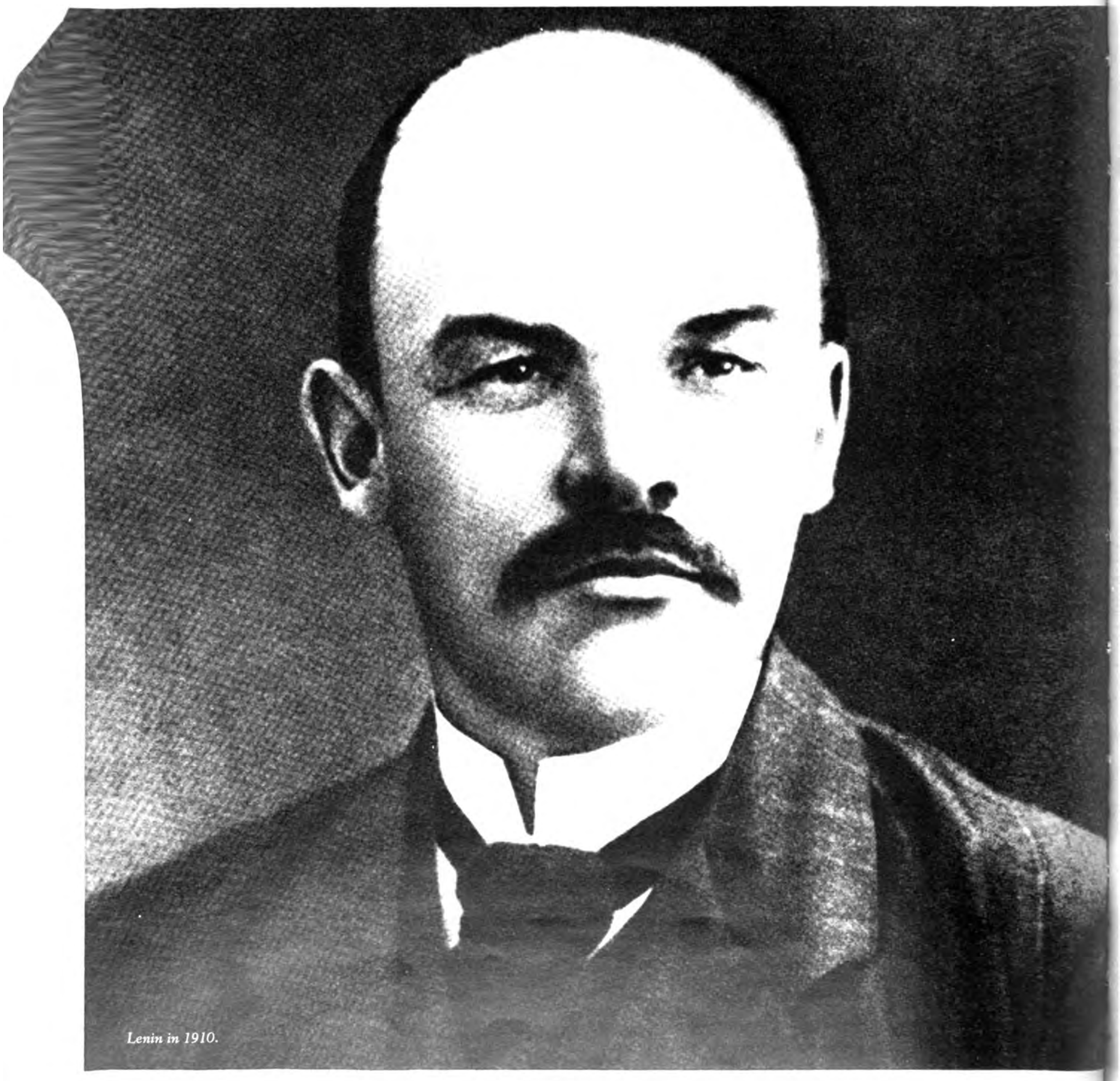
Farfetched though it seemed, the idea is now winning industrial recognition. Big prospects lie ahead. Theoretical physicists promise to raise the threshold of superconductivity to 40 degrees above absolute zero. Then there will no longer be any need to use helium, which besides being costly is in short supply. Hydrogen will be used instead. Insulation techniques will be simplified, and the efficiency of all the cooling installations will increase several times over. Power engineers will learn to work with low temperatures and convenient underground cables. The power pylon, with its spiderlike tracery, will vanish from the face of the earth, like the mail coach, the sailing ship and the water mill before it.

Courtesy of magazine *Znaniye-Sila*

UNDERGROUND

By Raisa Loseva

Vladimir Lenin
1870-1970



Lenin in 1910.

Gleb M. Krzhizhanovsky (1872-1959) was one of the oldest revolutionaries in Russia, a close and long-standing associate of Lenin. An authority on power engineering, he took an active part in developing the country's power industry. He was a member of the USSR Academy of Sciences and founder of the academy's Power Engineering Institute.

These excerpts are from his three-volume *Reminiscences of Vladimir Ilyich Lenin*, published in Moscow in 1956.

AS WE SAW HIM

By Gleb Krzhizhanovsky

WHEN LENIN was alive we, his close associates, would have liked to talk about him. Those who lived and worked with him could perceive the man's quality sooner than others. But his extreme modesty would have made any such discussion an intrusion.

At First Sight

At first sight he was not impressive. Short, wearing an ordinary cap, he attracted no attention and could have faded into the scenery of any industrial district. A pleasant dark-complexioned face with a somewhat Oriental touch—that is about how one would have described him. Dressed as a peasant, he would easily be lost in a crowd of Russian country folk. There was something in his look that seemed to come straight from the grass roots, something that made him one of their own. But one had only to look into his eyes, into those unusual piercing dark brown eyes full of inner force and energy, to know that this was no ordinary human being.

Most pictures of Lenin fail to give any idea of the man's genius, but one close look was enough to change that first impression of the ordinary. It is not fortuitous that a well-known French sculptor who, most probably, had no inkling of Lenin's historical role (this was long before the name of the leader of the Russian Revolution became world-known) was so fascinated by the outlines of Lenin's forehead that he literally ran after him in Paris. The sculptor wanted to model Lenin's skull because he thought it had such great spiritual beauty. There was a striking resemblance, he thought, between Lenin's forehead and that of Socrates.

But the spiritual essence of the man came through not nearly so much in his appearance as in his way with people. Many a time did I go with him to meet people who knew nothing about him, and always what I foresaw happened. No matter where he appeared and in whose company, if his appearance was dictated by the necessity to speak out on some matter of substance, he was certain to be the center of attention. He was never vociferous, never used high-sounding phrases, but everything he said carried so much weight and meaning, was so much to the point and so expressive, that the man's capacity was evident.

Ordinary at first glance, but at first glance only. And then the extraordinary spiritual beauty of this ordinary-looking man would reveal itself. The concentrated power of his intellect would immediately show in the combination of everyday words he used.

All these are but individual touches in the portrait of this man of genius.

His extraordinary capacity for work is indubitable, and so is the fact that he was a man of many talents (he headed the list of outstanding students in his secondary school for many years in succession); neither is there any doubt of his great organic strength. When one reads in various biographical sketches of his strength and dynamism, the statement seems incongruous—his small frame was hardly consistent, one would think, with the accepted image of great physical strength. And still the fact remains—the small well-and-neatly-fitted body was full of the vital energy of the physically strong, healthy man. I recall that when we were in exile in Siberia,[1] I told Lenin the definition a well-known medical expert had given of a healthy man. Health, as the doctor saw it, was emotional activity clear cut and well defined. Lenin was delighted with the definition.

"Exactly, the very thing!" he told me. "If a healthy man is hungry, he feels hunger in a very compelling way; if he is sleepy, he won't be choosey, looking for a soft bed only; and if he comes to hate somebody, real hate is all there, strong and unrelenting."

I looked at the rosy color of his cheeks and the dark shining eyes and thought that he, Vladimir, was the very model of a healthy man.

[1] In 1897-1900

An Unusual Young Man

Life is short, and those who find their bearings in early youth are lucky. Can we attribute a man's success, generally speaking, to just that? If so, Lenin had a full measure of such luck. When I met first him he was 23 and already a monolith of a man, though not all the facets of his nature had yet been cut.

I see with my mental eye life in St. Petersburg in the early nineties of the past century and the student revolutionary circles there. Taking this first period of Lenin's activities by way of example, I'll try to show the aims and strivings of this remarkable youth.

I came to St. Petersburg in 1889 at the age of 17, a fledgeling spiritually, to enter the Institute of Technology. I became associated with the left wing of the student body in my second year.

Vladimir Ulyanov got there in the autumn of 1893 and galvanized the students into action. Life began anew for us. Since the summer practicals I took at a factory were over, I returned to the institute in the autumn of 1893 to find our political group busy and unusually animated. The reason was simple enough—our new friend Vladimir Ulyanov from the Volga region had joined the group and soon became its leading figure. The very fact that he was Alexander Ulyanov's brother, the man who had been hanged in 1887 for an attempt on the czar's life, made him a most welcome newcomer.

Looking back, I remember the figure 23-year-old Vladimir cut. Burning inside him was a zeal, without fear or reservation, that made him ready for heroic self-sacrifice. The attitude could, perhaps, be traced directly to the tragedy in the family, to the heroic image of his elder brother, a bond Vladimir had with the revolutionary struggle of the Russian intelligentsia of the past that was different from the links the rest of us had. But Vladimir's remarkable command of Marxist theory and its practical applications, his knowledge of Russia's economic situation gained by firsthand study of the official statistics had an even greater appeal for us, pedantically devoted to Marx's teaching as we were.

His prominent forehead and extraordinary erudition earned Vladimir the sobriquet "old man." The nickname did not go with his liveliness and his overpowering energy, but the knowledge he so freely commanded, his tact with a wide range of people, his critical agility in tackling practical problems, his unusual capacity for winning the respect of factory workers made the nickname stick.

I had known the remarkable "old man" for only a few months when I began to notice that it was his presence at the friendly talks we had that gave me so strong a sense of the fullness of life.

It did not take Vladimir long to revolutionize the ways of our group. He demanded that we give up what he felt was our indulgence in theory—the small study circles for select workers we ran—and begin to propagandize a wider stratum of the Russian capital's proletariat. To achieve that aim he proposed that all the Marxist workers' circles in St. Petersburg unite to form the League of Struggle for the Emancipation of the Working Class.

In the winter of 1894 the secret police of the Russian capital were forced to take notice of "revolting" publications, leaflets and appeals, primitively hectographed but quite popular, that began to appear in the factories.

In 1895 Lenin developed a very bad case of pneumonia. To regain his health, he was compelled to leave Russia and go abroad for a period. But the major reason for the trip was to establish contact with the Emancipation of Labor group.[2] One can easily imagine how much importance we attached to the trip and how impatient we were to see him back. The long awaited day finally arrived, and our "old man," dynamic and impetuous as ever, returned. His account of the meetings with the group of Russian revolutionary intellectual expatriates was vivid, but the description of his encounters with the Parisian workers left me with an indelible and more powerful impression. The French workers active in the labor movement, because of their cultural background, their swift reactions and friendly dispositions, were, in his view, the natural human material for revolutionary Marxists to pin their hopes on.

Another foreign gift he brought in a suitcase fitted with a double bottom was also most welcome —a mimeograph—a device just coming into use at the time. The machine saw many a busy day in the years ahead turning out material to educate the proletariat of St. Petersburg.

Lenin was a prolific political writer filling up thick copybooks with his fine handwriting. We also published numerous leaflets and smuggled out of the country various materials for the Emancipation of Labor group. So it was only natural that our next step was the publication of a special paper for the workers. Unfortunately the first number —we gave it the title *Rabocheye Dyelo (Workers' Cause)* — the copy written mostly by Lenin himself, went straight to the secret police and never reached the secret printing shop of our group.

It would have been a most informative issue, laying down the guiding principle for revolutionary work in Russia for a whole decade. To the best of my knowledge most of the copy of that issue of *Rabocheye Dyelo* was lost beyond recovery, as were a number of other works of Lenin's then circulating in the revolutionary groups of St. Petersburg. But fortunately two of the three parts of his very important work *What the "Friends of the People" Are and How They Fight the Social-Democrats,* written at the time, have survived.

Prison Life

The skies became overcast by the end of 1895. The police were shadowing us. We didn't know how, and that was the worst part of the whole bad business. You would leave home and in strict conformity with conspiratorial procedure try to cover your tracks; suddenly, a long jump from home, a police spy would appear from nowhere, leaving no doubt that he was tailing you. Later on our reaction to those danger signs was more practical—we got new passports and changed our area of work. But at that time we were still novices. Add to the lack of experience the natural ardor of youth for a frontal attack, youth to whom compromise is the brain child of cold reason and not to be tolerated, and you know where we stood.

So the small hours of December 8, 1895, saw the lot of us, V. Ulyanov (Lenin) included, in the St. Petersburg prison for detained-under-remand cases. We spent a long 14 months at that place of detention. The transition from active revolutionary work to the anguish of strict solitary confinement with agonizing thoughts of what friends and relations were going through and nothing but gloomy prospects for the future was not easy to bear.

The "under-remand" detention broke two of our colleagues: One came down with the worst form of TB and died before long; the second suffered an incurable form of persecution mania. Friendship with Vladimir Ulyanov, for most of us and for me too, was a wonder-working remedy and a great support. Though the prison regimen was strict in the extreme, by use of the prison library and the visitors who came to see us we managed to keep in touch with each other.

I cannot reconstruct the busy correspondence Vladimir and I carried on in prison, but there is one thing I remember quite clearly: To receive and read a letter from him was like a tonic, a stimulating drink. Lenin's endowment of spiritual wealth, his extraordinary ability to support those who needed support and to dispel the mood of those who were depressed made him an indispensable friend under any conditions, and in jail particularly.

During the endless 14 months in prison I did not have a single chance of seeing Vladimir in the long corridors of the prison building. A whole series of security measures was taken each time one of us was escorted out for a walk in the prison courtyard or for interrogation—the warders would even whistle for all they were worth to warn their colleagues in the cross-passages that their charges might bump into each other. But when basketfuls of books were dragged with a great deal of din along the same corridors, I knew that only V. Ulyanov could devour books in such numbers. His ability to acquire an intimate knowledge of a book after a cursory glance was astounding. He would thumb through a bulky volume while you watched him and immediately notice those quotations that showed the author in his true colors.

It goes without saying that his example of studying in the prison cell was contagious; we all tried to make our confinement an opportunity for a superuniversity education.

In Siberia

Lenin did even more for our group along this line during our exile in Eastern Siberia. We were among the first Russian Social-Democrats to be there, and the old exiles[3] looked at us with

[2] The first association of Russian Marxists abroad, organized by Georgi V. Plekhanov in Geneva in 1883.

[3] Prior to Lenin's group the Narodniks formed the main trend in the revolutionary movement in Russia. They followed various utopian socialist theories. Many of them were exiled to Siberia by the czarist government. For more information on the Narodniks, see "Russian Revolutionaries" in the May issue.

Continued on page 34

CULTURAL REVOLUTION

Maxim Kim
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In the article "New World—New Culture" in the June 1967 issue of* SOVIET LIFE, *Konstantin Zagorsky traced the course of the country's cultural transformation in the 50 years of Soviet power. In the article below Maxim Kim defines socialist cultural revolution, considers its implications and cites Lenin on the subject.

IN 1913, four years before the autocracy fell, Lenin wrote these angry words:

> There is no other country so barbarous, in which the masses of people have been so robbed of education, enlightenment, knowledge—no other such country is left in Europe; Russia is the exception.

Indeed, it is difficult to think of another European country in which popular ignorance was so widespread as in Russia with its great expanses and its multinational population. Only a third of its citizens could read and write. Dozens of non-Russian national minorities had no alphabet at all. Four out of five children and adolescents received no schooling. In a country with a population of 150 million, there were no more than 136,000 college-trained specialists in the working force. An Academy of Sciences had been founded two centuries earlier, but in 1914 there were only 11,500 research workers.

And now the cultural picture after 50 years of Soviet power. We have no illiteracy. Eight years of schooling is compulsory, and the transition to compulsory 10-year schooling is under way. We lead the world with 176 students per 10,000 of population. One-quarter of the world's scientists and physicians work in the Soviet Union. We publish more books than any other country. In 50 years our illiterate workers and peasants developed into space pioneers.

Lenin called this complex and many-faceted process that takes place in all areas of spiritual life a cultural revolution.

Continuity

A cultural revolution is a dual process: the rejection of the old, the outworn, the reactionary, and the assimilation and development of the new and progressive. What is rejected and what is accepted depends on the nature of the social revolution.

In the general store of culture are certain nonclass components—the findings of the natural and technological sciences, language and other such cultural values. That part of the cultural heritage is taken over by the new society and further developed.

However, the class components of culture—under this heading come the humanities, literature and the arts—should not be regarded as a homogeneous entity. A concrete historical approach is necessary here. In his well-known study *The Heritage We Renounce* (1897) Lenin offered examples of his analytic approach to the culture of capitalism. The word "bourgeois," he wrote,

> is often understood very incorrectly, narrowly and unhistorically, it being associated (without distinction of historical period) with a selfish defense of the interests of a minority. It must not be forgotten that at the time when the eighteenth century enlighteners (who are by general consent included among the leaders of the bourgeoisie) wrote, and at the time when our enlighteners of the forties and sixties wrote, all social problems amounted to the struggle against serfdom and its survivals. At that time the new socioeconomic relations and their contradictions were still in embryo. No selfishness was therefore displayed at that time by the ideologists of the bourgeoisie; on the contrary, both in the West and in Russia, they quite sincerely believed in universal well-being and sincerely desired it; they sincerely did not see (partly could not yet see) the contradictions in the system which was growing out of serfdom.

Consequently, we do not reject everything associated with bourgeois culture. We reject certain elements of bourgeois culture not because they are bourgeois but because they are reactionary. Yet there was a time when what was bourgeois was not reactionary. What was bourgeois coincided with what was popular and expressed what was universally human. It is this universally human ingredient, stripped of all reactionary overlays, that should be studied, assimilated and used in the creation of a new culture.

This continuity is the very essence of scientific communism. The new socialist culture is linked with the culture of the past. However, the opponents of Marxism deliberately misconstrued this theory as "vandalism" and branded communists as people who were out to destroy all the cultural values created by man's hand and mind.

Unfortunately, such misconstructions came not only from the enemy camp. People who sympathized with communism also referred to the "destructive passions" of Communists. For example, Heinrich Heine wrote that when the Communists came to power, a grocery boy would make of his *Buch der Lieder (Book of Songs)* paper cones to hold coffee or tobacco snuff for old women.

Such ideas were misconceptions, of course. Heine sympathized with the idea of communism but misunderstood much of its substance. Incidentally, his works, including *Buch der Lieder,* are published in millions of copies in the Soviet Union and in many of its languages.

Lenin was very conscious of the cultural needs of the new society. He said many times that we must treat all of the culture bequeathed us by history, especially during the epoch of capitalism, with a thrifty, intelligent, efficient master's care.

> It is not enough to crush capitalism. We must take the entire culture that capitalism left behind and build socialism with it. We must take all its science, technology, knowledge and art. Without these we shall be unable to build communist society.

Step by Step

Immediately after the Revolution the Communist Party of Russia began to apply Lenin's principle of cultural continuity. A Commission for the Protection of Artistic and Historical Treasures was set up as part of the People's Commissariat (Ministry) of Education. It was replaced later by an independent centralized body: the People's Commissariat of Artistic-Historical Property. In April 1918 this commissariat instructed all Soviets to preserve their local artistic and historical treasures. This interesting document said in part:

> It took many centuries, much sweat and blood to create Russia. Everywhere around us are the products of our working people. Yesterday's royal palaces and today's popular museums were created by the people, and it is only recently, at the cost of blood, that they were returned to their legal owner:

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VLADIMIR LENIN FILMED BY AN AMERICAN

By Andrei Petrov
Historian

IN FEBRUARY 1920 Vladimir Lenin received Lincoln Eyre, a correspondent for the New York newspaper *The World.* They conversed in English, at first in Lenin's office and then in his Kremlin apartment. Lenin's wife, Nadezhda Krupskaya, was there. Eyre had a cameraman with him, an American, Victor O. Kubes, who filmed the meeting. But nobody knows what happened to the film.

In November 1921 Lenin received Parley Parker Christensen, an American economist. Soviet cameraman Alexander Levitsky was asked to film the meeting, but since the lighting was poor, he took only six photographs and some film footage in the Kremlin courtyard. These six photographs, that is the actual glass negatives and the short strip of poor quality positive film which was substituted for the lost negative, are currently preserved at the Central Party Archives of the Institute of Marxism-Leninism. The film shows Lenin with Christensen in the Kremlin courtyard.

Also in the archives are some closeups of Lenin taken by an unidentified cameraman. It is apparent from his animated facial expressions that he was talking to someone. In some of the pictures he is holding a sheet of paper and gesturing as though to explain something. This was thought to be a fragment of the film Levitsky took of Lenin's meeting with Christensen, but there was no positive proof.

A close study revealed that Lenin was dressed differently than on the photographs made by Levitsky. When Lenin met Christensen, he was wearing a dark single-breasted jacket with tapered lapels. In the photograph the dark color came out as black. He also wore a necktie on which narrow diagonal black and white stripes can be made out. In the film sequence Lenin is also wearing a dark jacket, but it is obviously not black and the lapels point upward. The cut and the color of the jacket are obviously different. It looks as though this second jacket may have been double-breasted. The tie is black and is knotted differently. The cut of the collar of the white shirt that Lenin was wearing is also different (compare photos Nos. 1 and 3).

These minor differences seem to warrant the assumption that these sequences were filmed at some other time and not by Levitsky. The question then is: Who took the film? Because we know that no other Soviet cam-

WHO WAS THE CAMERAMAN?

eraman ever filmed Lenin in his Kremlin office. Was it the American Victor Kubes, who accompanied Eyre?

After a great deal of searching the answer was finally found.

In his dispatch in *The World* of February 22, 1920, Lincoln Eyre gave a detailed account of the conversation and of the filming. This is his description of Lenin's office.

> It was a medium-sized room, lined with bookcases and wholly lacking that ministerial magnificence. . . . Lenin arose from the desk at which he had been seated, shook hands briskly and began to ply Kubes with questions about his photographic work. He evidenced much interest to learn how Kubes had filmed the signing of the peace treaty at Versailles. "So there too, there's the dictatorship of the photographer," he remarked smilingly.
>
> . . . Speaking in rather slow but very pure English—his understanding of both English and American is perfect—he tackled each topic brought up with the unhesitating promptitude of one who knows his own mind thoroughly.

Eyre notes that Lenin was not at all bothered by the filming being done for a picture which would then be shown to Americans.

> While Kubes, whose directions he obeyed with smiling docility, was posing him for the camera, I had a chance to study the physical aspects of the man who has done more to turn the world upside down . . . His dress was nondescript—a slightly soiled soft white collar . . . a black tie and a dark brown business suit, the trousers stuffed into knee-high boots of thick felt, the warmest kind of foot covering.

About the filming in the apartment Eyre wrote that in response to Kubes's request to picture him in his home,

> Lenin led us down a short corridor, past two sentries, into the five-room apartment in which he lives. We entered a fairly large and simply furnished parlor, through a dining room. . . . There we were joined by Comrade Ulyanova, Lenin's wife (she prefers to use her husband's real name, Vladimir Ilyich Ulyanov).
>
> Lenin's wife is a quiet middle-aged woman who looks even more a proletarian than her spouse, but who talks four languages and is an authority on secular education.

Eyre's dispatch contains many details which suggest that the unidentified film strips ascribed tentatively to Levitsky could have been taken by Kubes. Furthermore, this dispatch throws light on the origin of



2



3



4



5

some other pictures which were previously thought to have been filmed not in the Kremlin apartment but in Gorki, outside Moscow, in 1922. On some Lenin fondles a cat; Eyre mentions a cat that climbed onto Lenin's lap (photo No. 4). And in many of the pictures we clearly see those tall felt boots with turned down tops that Eyre mentions.

Nevertheless all this had to be checked and verified.

In 1926 and 1927 Amtorg acquired in the United States some newsreel strips which, though filmed in Russia, had been sold to the Americans. Discovered among them by chance were six pictures of Lenin taken by an unidentified photographer. It was believed that they had been taken by an American cameraman in Moscow. Esfir Shub, the well-known Soviet newsreel film director, said as much in her book *In Closeup* published in 1959.

She lists a picture of Lenin at his office desk. There is a similar shot in earlier known pictures, but this was believed to have been made much later than Eyre's visit. The desk is strewn with papers and on it are two telephones and a small desk-type telephone switchboard. The bookstand by the table is piled with newspapers, books and papers. The entire picture does an excellent job of conveying the atmosphere of Lenin's office (photo No. 2). Lenin is wearing the same suit as in the pictures with the cat. A study has shown that all six of the pictures acquired in the USA were made by Kubes at the time Lenin met with Eyre in 1920.

Any final doubts that may have been left were disposed of when all the details were verified on the spot and found to coincide. According to the staff of the Lenin Memorial Apartment at the Kremlin, the telephone switchboard stood on the desk only in 1920 and 1921, before Lenin became ill. It was removed by late 1921 for reasons of quiet.

One final detail. Preserved at the Institute of Marxism-Leninism is a picture showing Lenin, Krupskaya and a third unidentified person in their Kremlin apartment (photo No. 5). Lenin is again fondling a cat, while on the round table are the same periodicals as in other shots. This may possibly be a print from one of the pictures Kubes took. The third person may be Eyre, although we have not been able to locate a photograph of him.

Can anyone help?

AS WE SAW HIM

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mixed feelings of curiosity and distrust.

Lenin was sentenced to live for three years in the village of Shushenskoye. I was sent to another village 50 miles away. But we kept up a steady correspondence, Lenin being, without question, the more reliable and active of the two of us. We received his letters approximately twice a week, and they kept us informed of the progress of his own work and the news he was receiving from a great many correspondents. His letters were always very much to the point, succinct, carefully thought out replies to the substance of the subject under discussion. He was a punctilious and self-disciplined correspondent. He might send a sharp polemic reply to a letter he had received, but to bypass inquiries addressed to him, let alone to leave them unanswered, was something he would not think of doing.

Reminiscences of the Shushenskoye peasants show how impressed they were by the regular life Lenin led and the amount of work he did in a day. His legal education, the fact that he was always poring over books, his straightforward answers to any questions they might ask soon built him up as an unusual personality in the eyes of the local peasants.

In the first year of our exile I obtained a permit on some pretext or other to spend several weeks in Shushenskoye. The life we shared with Lenin there is still vivid in my memory. He was then living by himself, and his day was a well-planned succession of long stretches of work interspaced with regular rest periods, each minute planned. In the mornings, full of energy, he liked nothing better than a bout of wrestling or a romp. So I had to take up the challenge until he would quiet down in the face of the stiff opposition I never failed to put up. Then, after a brief morning walk, we would get down to work: processing data culled from statistical reports, studying philosophy, reading economics by both Russian and foreign authors. Fiction was left for our rest periods and recreation.

Newspapers would come, whole batches of them, several weeks late, as could be expected. But adverse circumstances notwithstanding, Lenin systematized his newspaper reading, too. He arranged his mail so that he read the batch of papers with the same dateline at the same time. It was like getting his newspapers every day, even though they were much delayed. When I tried to break the routine and torment him by quoting topical news items from later issues, he would stop his ears and protest vehemently, defending the advantages of his method.

He was a great lover of fresh, cold air, of fast walking, skating, chess and hunting. And how delightfully gay and lively he could be in those hours of rest in the open or during chessboard battles!

Week followed week of our exile. The unbroken rhythm of the intensive life that outstanding man lived, without missing a single day to augment his scientific knowledge and erudition, was a great incentive and stimulus for us all. In Lenin's presence each of us wanted to become a better person.

The *Iskra* Days

Siberian exile over, Lenin went abroad. The publication of the newspaper *Iskra (Spark),* a project he undertook, was a turning point in the history of the Communist Party of Russia. The masthead read: "A spark will kindle a flame." The flame was the October Socialist Revolution of 1917. Go through the pages of the old *Iskra* [4] and you will find ample proof of the way its fiery appeal awakened the Russian proletariat.

At the Second Congress of our party (known then as the Russian Social-Democratic Workers Party) in 1903 it split. The followers of the majority, who came to be known as the Bolsheviks, accepted the revolutionary line of Lenin, while those who opposed it remained in the minority and were named the Mensheviks. At that congress I was elected to the Central Committee of the party.

Kiev [5] was the seat of the core of the Central Committee functioning inside Russia. We had a hard time there at the beginning. The Central Committee was responsible for organizing activities throughout the country. The isolated nodules of the just constituted local party committees were to be welded into a single integral whole. We were to bolster the spirit of our fellow party members who were fighting

[4] *Iskra* from No. 1 to 51 inclusive (from December 1900 to October 1903), when Lenin's voice was the decisive one on the editorial board. The Mensheviks, who were opportunists, took over the paper beginning with No. 52 (October 1903).

[5] Now the capital of the Ukrainian Republic.

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This is the desk at which Lenin used to work. The house is now a museum.



(Left) A hunter's hut where Lenin would stop to rest when he took walks in the woods.



(Far left) The outside and dining room of the house in the Siberian village of Shushenskoye where Lenin and his wife Nadezhda Krupskaya lived in exile from 1897 to 1900.

CULTURAL REVOLUTION

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> the people. Every monument of history, every work of art which only the czar and rich people enjoyed are now our property; we shall never give them up. We shall preserve them for ourselves and our posterity. . . . Henceforth their owner is all Russia, the Russia of the working people. The hatred which the people nourish for their former owners, the czars and other enslavers, is not extended to these treasures. They must be treated with care, made available to all for instruction and enjoyment.

Many of the decrees and instructions regarding the preservation of cultural treasures came directly from the Council of People's Commissars with Lenin at its head. Here is a telegram he sent to the Chairman of the Ostrogozhsk Soviet of the Voronezh Gubernia (Central Russia) on December 19, 1917:

> An accurate inventory should be drawn up, and the furnishings should be preserved in a safe place. You are responsible for their safety. The estates are the property of the people . . . .

This is Lenin's reply to a local Soviet inquiring what to do with the furnishings, pictures and other valuables confiscated from the landlords.

Soviet power ended the rich people's monopoly and made the country's cultural treasures national property. In the first months of the Revolution the Tretyakov Gallery and the Hermitage, with their rich collections of Russian and West European paintings, the theaters, museums and archives were all nationalized. So were Count Sheremetyev's palace in Moscow, now the Ostankino Museum, and dozens of other architectural, artistic and historical monuments.

On Lenin's instruction restoration work was begun of the Kremlin buildings in 1918. He ordered an inventory of all collections of Russian and West European paintings in Petrograd, Moscow and other cities. He signed a decree in September 1918 prohibiting the export of artistic and historical objects. The preamble said the purpose of the decree was to "stop the export of objects of special artistic and historical importance threatening loss of the people's cultural treasures."

The new authorities—the Soviets—called on workers and peasants to protect their cultural legacy. A vigorous campaign was undertaken to prevent the theft and destruction of buildings and objects of cultural-historical value.

When the czars' residence—the Winter Palace in Petrograd—was stormed, the counterrevolutionary newspapers gave detailed information on the looting they said had gone on. Even the total value of the objects allegedly stolen by the soldiers and Red Guardsmen was calculated: 500 million gold rubles. But the American journalist John Reed, who witnessed the events, notes in his book *Ten Days That Shook the World* that the total damage to the Winter Palace on the "night of assault" was only 50,000 rubles. And even these valuables were mostly retrieved and returned to the palace.

Did the people vent their hatred by destroying cultural treasures during the Revolution? Some acts of the kind, especially by peasants, were recorded. A historian's job is not to deny such incidents but to explain them. Incidentally, the Russian poet Alexander Blok, who accepted the Socialist Revolution without reservation, did just that in an article "The Intelligentsia and the Revolution" he wrote in January 1918:

> Why is an ancient cathedral being vandalized?—Because for a hundred years this was where a fat priest took bribes and sold vodka. Why are the beloved aristocratic estates being fouled?—Because that was where girls were flogged and raped, if not on that landlord's estate then on his neighbor's. Why are century-old parks being felled?—Because for a hundred years the gentry showed their power under the spreading limes and maples: They showed off their moneybag to the beggar and their education to the uneducated.
>
> Did you think that the revolution is an idyl? That creativity destroys nothing in its way? That the people is an innocent? That the hundreds of thieves, provocateurs and blackguards who are glad to warm their hands in any fire will not try to grab whatever they can? And, finally, that the age-old conflict between the "black" and "white" bone, between the "educated" and "uneducated," between the intelligentsia and the people will resolve itself "without blood" and "without pain"?

Against Nihilism

However, what difficulties there were in applying the principle of cultural continuity did not emanate from the "destructive actions of the masses." The difficulties sprang from the nihilistic position taken by the so-called Proletkult (Proletarian Culture).

Proletkult was a public organization founded to develop a new mass culture. It was given legal status in a government decree signed November 22, 1917, by Lenin and Anatoli Lunacharsky, who was then in charge of education and culture. The decree gave Proletkult a large independent role. Despite a sharp paper shortage, Proletkult was given the opportunity to publish a national biweekly and a dozen local publications. We can conclude from this that the government and Lenin were favorably inclined to Proletkult.

However, experience changed that attitude. Some Proletkult ideologists rejected the cultural values of the past and called for the creation of a "pure proletarian culture." The Communist Party could not accept that leftist-anarchist deviation.

The struggle against this nihilistic attitude was a necessary element in the development of socialist culture. It is to Lenin's credit that he demonstrated Proletkult's delusion.

Socialist culture grows out of and develops from previously accumulated values. It absorbs and evolves the best that world culture has created. But Lenin wrote:

> We do not guard the heritage the way an archivist guards an old document. Guarding the heritage does not mean confining oneself to it. It means creating new values.

Thus, cultural progress, with the socialist cultural revolution as one of its most dynamic stages, is a highly complex process. It implies both critical assimilation of old values and creation of new and still more advanced values. It also implies new frontiers of intellectual and moral development. The Soviet experience of cultural revolution demonstrates that this is the only road to the highest communist civilization.

Culture for All People

There may be different definitions of cultural revolution, but not of its function. Considered in its large sociohistorical aspect, its primary purpose is to make cultural values, once enjoyed only by a minority, accessible to the majority. Under socialism culture truly belongs to the nation as a whole.

In January 1918 Lenin said at the Congress of Soviets:

> In the old days, human genius, the brain of man, gave some the benefits of technology and culture while depriving others of the bare necessities of education and development. From now on all the marvels of science and the values of culture belong to the na-

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against heavy odds, against the sophisticated police apparatus that already felt it was doomed but was still a formidable power because of the tremendous momentum gathered by centuries of czarism.

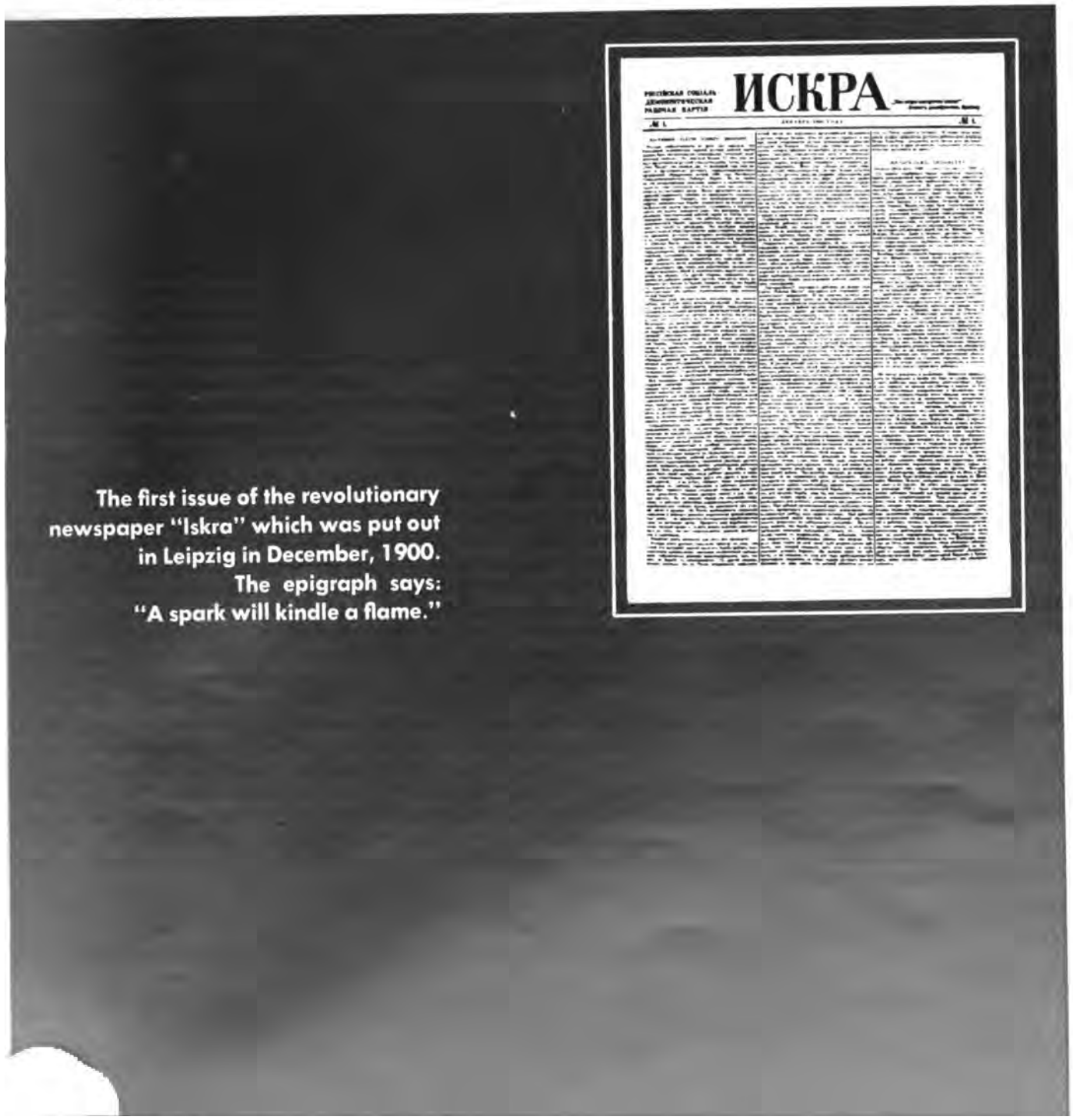
There is no overstating what the regular appearance of *Iskra* meant to us at this time when we were trying to lay the groundwork of the party. The very idea that a party center headed by Lenin was functioning outside the reach of the Russian police, all exposures and failures notwithstanding, was a source of hope and inspiration in the difficult times we had to live through.

News that the editorial board of *Iskra* had also split at the party congress was most disheartening. It meant that Lenin, the leading spirit on the editorial board, was isolated, without support and followers.

Under the circumstances, my heavy responsibilities in Kiev became unbearable, and after getting a false passport, I went abroad.



The type with which Iskra *was set. The paper was printed abroad and smuggled into Russia.* Iskra *Museum in Leipzig.*



The first issue of the revolutionary newspaper "Iskra" which was put out in Leipzig in December, 1900. The epigraph says: "A spark will kindle a flame."

It goes without saying that in those confused and muddled days I spent most of my time with Vladimir Ilyich. Among people who were fussing about in utter confusion, he was a bulwark of reserve and equanimity. He did not try to win me over by "selling" me his ideas, but left me to see for myself, in an objective and unbiased way, why and how the split had taken place. Fate was not overly kind to me at that time; it gave me a rough deal. I had not yet discarded the specific down-to-earth approaches we used in the revolutionary movement inside the country and tried to effect a reconciliation, settle the dispute, to play the unrewarding part of a buffer and go-between.

Lenin, in spite of the remarkable integrity of his inner "self," was in point of fact unusually modest, without conceit or self-importance. One of the arguments we had lasted well into the small hours. Knowing the importance he attached to the practical needs of our revolutionary activities inside the country, in Russia proper, I tried to convince him of the wisdom and expediency of reconciliation. The split, I said, would end the work of party bodies in Russia. "Vladimir Ilyich," I said, "look at what things are coming to. Everybody without exception is against you! You can't argue that away. Even among those few who vote with you there are some who do it because of personal devotion. You seem to be opposing all the rest of us by yourself."

A truce of a kind was, as we know, concluded between Lenin, Plekhanov and Martov. I thought the union of these political figures was vital, and it seemed to me that the personal differences were settled. But I subsequently had to pay very dearly for overestimating the degree of reconciliation we achieved.

The developments of the years to come proved that only Lenin was really farsighted enough to see which way history would turn. And if the true essence of genius is the ability to see future developments many years before men of average abilities can grasp their meaning, then Lenin's early identification of the Mensheviks with sins against the Revolution is the hallmark of the man of genius he was and proof of the clarity of his historical vision.

Bolshevism and Menshevism were poles apart in perceiving objective reality in its essence. But it was only the subsequent course of history that brought this fact out in all its clarity,

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> tion as a whole, and never again will man's brain and human genius be used for oppression and exploitation.

That statement defines the essentials of socialist culture; it is the formula for the cultural revolution.

Let us try to expand this formula. In practice it implies making cultural values accessible to the masses, creating the conditions that make it possible for everyone to grow culturally. It also implies mass creative participation and the creation of new cultural values. It implies a society geared to the intellectual, artistic and moral progress of the masses.

In a class society people and culture are always separated. This alienation of the masses from culture was a characteristic of czarist Russia. A wealth of cultural values was created by Russia's scientists and artists over the centuries. Pre-Soviet Russia made a substantial contribution to world culture.

But these cultural values were not accessible to large sections of society in the Russia of serfdom and the bourgeoisie. The propertied had the benefit of all cultural benefits; the millions of working people had no access to the masterpieces of painting, music and literature. Lenin said bitterly in 1910:

> Tolstoy the artist is known to an infinitesimal minority even in Russia. If his great works are really to be made the possession of all, a struggle must be waged against the system of society which condemns millions and scores of millions to ignorance, benightedness, drudgery and poverty—a socialist revolution must be carried through.

Soviet power scrapped the old and unjust system of distribution and consumption of spiritual values and created a new democratic system to replace it. But it was some time before the workers and peasants of socialist Russia could gain access to the treasures of culture. They did not possess even the most elementary key—basic education. The cultural development of the masses had to begin from ABC in the very literal sense.

Teaching workers and peasants to read and write was the most immediate problem. The beginning was made by the decree of December 26, 1919, On the Elimination of Illiteracy in the Russian Soviet Federative Socialist Republic, signed by Lenin:

> To give the entire population of the Republic the possibility of conscious participation in the country's political life, the Council of People's Commissars resolves: Every person in the Republic between the ages of 8 and 50 who cannot read and write is required to learn to read and write in his own or the Russian language, whichever he chooses.

In July 1920 an Extraordinary Commission for the Elimination of Illiteracy was set up to coordinate the campaign. The entire multinational country responded. Education centers were set up everywhere. Workers and peasants, men and women, young and old sat at school desks after working hours and spelled out the words: "We are not slaves." The campaign had the quality of an epic, and the results were dramatic.

For many nationalities in the more remote parts of the country, which had been culturally deprived for centuries, national alphabets were created. It was followed by vigorous intellectual development.

By the thirties, substantial progress had been made. Literacy and higher educational standards sent millions of working people to newspapers and books, theaters and museums. However, the cultural revolution did more than make the masses of people avid consumers of culture; it made them creators as well.

Throughout history the people have been an inexhaustible source of spiritual values. But in old Russia the possibilities for tapping that source were very limited. Socialism created the conditions which made mass creativity possible.

Today more than 10 million people are active in amateur art, writing, music, theater and dance groups. Several years ago people's theaters grew up around the best of the amateur drama groups. Today there are more than 900 such people's theaters, more than the number of professional theaters. Their audiences are in the millions, and their artistic standards are high.

A people's culture is a culture created for the rounded development of everyone. But what does that mean? There was a time when the question was given this primitive answer: It means to create art everyone can understand. Those who offered this answer misquoted and misinterpreted Lenin's statement that art should be accessible to the people. Lenin was saying that culture—educational opportunity, libraries, art galleries—should be freely available to everyone. He did not mean reducing culture to the lowest common denominator of understanding and appreciation but, on the contrary, raising the educational standards of the masses of people to a level at which they can understand even the most sophisticated works of art. We must not forget these words of Lenin:

> Our workers deserve more than mere spectacles; they are entitled to really great art.

To develop a people's culture does not mean to fit culture to the level and taste of those who have not grown esthetically and culturally. If it meant that, the masses of people would not grow. Socialist culture is genuinely democratic in the sense that all its achievements, no matter how incomprehensible they may be to some parts of the population at first, will in the final analysis be the spiritual property of all.

The development of a socialist culture in our country is a major achievement of the Soviet people and the Communist Party in the advance toward communism. But this cultural revolution, as well as our socialist progress generally, is only a beginning. Forward-looking people the world over were aware of the larger significance of the Soviet cultural revolution right from the outset. Their voices were raised even at the birth of the new culture in a cold and hungry Russia.

The statement of Fridtjof Nansen, the great Arctic explorer, is characteristic. Early in 1923 he visited Russia, and in the same year he wrote a book of impressions entitled *Russia and the World.* The year 1923 was by no means our peak period of cultural growth; there were yawning gaps everywhere. But even through the difficulties of birth of this people's culture Nansen could discern its great future. He wrote:

> We can argue about the further development of Western Europe and the progress of West European culture. But there is no doubt that the Russian people have a great future. They are called upon to fulfill a special mission in Europe and in the entire world. Just as the boundless Russian Siberian expanses with their enormous natural resources, still almost untapped, have limitless possibilities for the development of the country, so too the Russian people have a vast source of untapped spiritual force.
>
> Russian culture has not yet evolved. It will have its prime in the future. I believe the time will soon come when Russia will not only help Europe materially but will become its center for spiritual renewal.

Courtesy of *Voprosy Istorii*

Immediately after the Revolution, the new Soviet Republic instituted sweeping political, social and economic reforms. Despite the grim and pressing problems of civil war and foreign intervention, the government with Lenin at its head found time for legislation to preserve the cultural values of the past and to encourage the emerging socialist culture. These are a few of the early laws:

"Concerning the Institution of a State Commission on Education." Passed November 22, 1917. Set up a body to supervise public education which was subsequently replaced by the People's Commissariat for Education.

"Concerning the Nationalization of the Tretyakov Gallery." Passed June 3, 1918. Declared the Tretyakov Gallery in Moscow with its rich collection of Russian art property of the republic.

"Concerning the Transfer of the Petrograd and Moscow Conservatories to the People's Commissariat for Education." Passed July 12, 1918. Made the two conservatories, their buildings, instruments, and so on, property of the state.

"Concerning Recognition of Scientific, Literary, Musical and Art Works as National Wealth." Passed November 26, 1918. All works of literature and art, regardless of ownership, could be declared property of the republic. Works not declared state property could be duplicated and circulated only with the author's consent.

"Concerning the Nationalization of Shops, Warehouses and Workshops Making and Selling Keyboard and Other Musical Instruments." Passed August 21, 1919. Transferred the workers in the nationalized shops to the Music Department of the People's Commissariat for Education.

"Concerning the Unification of the Theaters." Passed August 26, 1919. Placed all theaters under a single authority, nationalized theater property, grouped theaters into several categories and granted them state subsidies.

"Concerning the Nationalization of the Leo Tolstoy House in Moscow." Passed April 6, 1920. Declared the house, the land on which it stands, the outbuildings, and the effects of Leo Tolstoy national property to be preserved for a museum.

"Concerning the Higher Moscow State Studios of Art and Design." Passed November 29, 1920. Made the studios part of the system of higher education and opened them to gifted young people of working-class and peasant origin.

"Concerning the Protection of Natural Relics, Gardens and Parks." Passed September 16, 1921. Established preserves and national parks in various parts of the country.

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when the revolutionary tide of armed popular uprisings swept the length and breadth of the plains of Russia.

1905

The events of 1905 occurred when I was still in Kiev, active in a large-scale railwaymen's strike. I used my personal connections to get a job with the Southwestern Railways. I was head of the strike committee in the last period of the stoppage, much to the chagrin of my superiors, who were annoyed to see a university graduate in that role.

With the support of the blue-collar and white-collar workers of the railways, we marched ahead vigorously and before long became masters of the situation not only on the railways but in Kiev proper. The authorities were at a loss, but we too were in some doubt about what course to take. A feeling of vague concern was preying on our minds; we did not know how to put a proper end to the incessant meetings we were holding. The Manifesto of October 17 [6] was issued at a time when an unmistakable feeling of bewilderment had already set in among the railwaymen and the various revolutionary organizations that supported them.

That same October in Kiev a large crowd taking part in a peaceful demonstration was shot down by mounted Cossacks and police. A full-scale pogrom against the Jews followed. It was succeeded by a bloody massacre of several engineer battalions that had revolted against the government. I escaped arrest by leaving Kiev for St. Petersburg. Lenin lived there at the time, and he was sending us urgent warnings to keep our powder dry.

Overwhelmed by the events in Kiev, I felt that overestimating our own revolutionary potentialities was the greatest error we could commit. I recall arguing the issue with Vladimir Ilyich on many occasions. At the same time I could not help admiring the energy he displayed in St. Petersburg. This was his first "test" appearance on the historical scene after years of clandestine work in the underground. And all those who had eyes to see realized what a giant the man could become if he could act in the open in his sweeping all-embracing way. Not recognized by everybody, his true potential only half-guessed, Lenin, nevertheless, was already acknowledged by many as the captain of the ship of the Russian proletarian revolution.

When now I read over again his many writings on the first Russian Revolution, I am filled with wonder and admiration at the sharpness of his political vision, his well-aimed blows, the accuracy of his predictions. I recall a speech of his at a mass meeting in the People's Home [7] of Countess Panina. Speakers known to the entire city and representing various political trends replaced each other on the platform. Then a new figure took the rostrum. The general public did not know what and who the man was. Only the unusual bulge of his forehead and the piercing look of his slightly squinting eyes caught one's attention. He had been speaking for only a few minutes, but the audience had already been captured. Thousands of eyes were riveted on him, under his spell. . . . They saw a formidable popular tribune. His logic in analyzing the course of events was pitiless, compelling. A more exact interpretation of the developments was not possible. In each utterance he made there was so much profound thought and such passionate conviction that oratorical flourishes could not have had comparable impact. A storm of applause marked the end of his speech and it culminated in an ovation as he left the rostrum. And we saw even those whom he had just denounced joining in.

The revolution reached its peak in a mass armed uprising in Moscow in December 1905. The uprising was suppressed. St. Petersburg was a gloomy and silent place when the tide of the revolution began to ebb. The ground became hotter and hotter under Lenin's feet. It was clear that the reprisals against the leaders of the revolution would not be long in coming. The best interests of the party demanded that Lenin be sent abroad, and the sooner the better. But it was far from easy to persuade him. As the captain of the ship, he thought he should be the last to abandon it. We talked him into settling in Finland at least, but with no end of trouble.

[6] The Manifesto was promulgated by Czar Nicholas II when the revolutionary upsurge was at its peak and a nationwide political strike was sweeping the country. The document promised the peoples of Russia the "fundamentals of civil freedom." It was a ruse of the czarist government to gain time and suppress the revolution.

[7] In prerevolutionary Russia a people's home was a club for workers, craftsmen and peasants set up and operated at the expense of patrons of art and charitable societies.

NO TROUBLE AT ALL

By Victor Golyavkin

Drawing by Leonid Sergeyev



SCHOOL WAS OVER. All the kids in the grade were in the schoolyard talking about their summer plans. Volodya, his voice rising above the hubbub, yelled:

"Let's write Anna Petrovna from wherever we go. Tell her what we saw and how we spent the time."

Everybody agreed it was a good idea, and they all said they would do it.

The boys and girls went to all sorts of places. Klim went to stay with his relatives in a village. As soon as he got there, he sat down and wrote a letter five pages long.

He wrote:

"In the village I saved people from drowning. They were all very glad. One man I saved said: 'If not for you I'd have drowned.' But I told him, 'It was no trouble at all.' He said, 'Thanks a million.' I said, 'You don't have to thank me. It was no trouble at all.'

"I must have saved fifty or a hundred people. Maybe more. But then they stopped drowning and there was nobody left to save.

"Then I spotted a broken rail. And I stopped a whole train. People came rushing out of the coaches. They hugged me and praised me. Some of them even kissed me. Many of them asked for my address, and I gave it to them. Many of them offered me presents, but I said: 'No, please, no presents.' Many took pictures of me and I posed with them. Then there were many who asked me to go off with them right then and there. But I couldn't leave Grannie without telling her I was going.

"Then I saw a house on fire. The flames were terrible. And there was a lot of smoke. 'Oh!' I said to myself. 'Maybe there are people inside.'

"All around me beams were falling down. Some fell behind me and some in front. Some of them fell at the side. One fell on my shoulder. Five fell right on my head. Some more fell somewhere else. But I went right on. I hunted all through the house, but I found nobody, only a cat. I ran out with the cat in my arms. The owners of the house were standing right there. They were carrying watermelons. 'Thanks for pussy,' they said. 'We just got back from shopping.' They gave me one of the watermelons. Then everybody put the fire out.

"Then I saw an old lady. She was crossing the street. I went up to her 'Please,' I said, 'let me help you across.' I took her across and crossed back. Some more old ladies came up. I helped them across too. Some old ladies didn't need to cross, but I said: 'Please, I'll help you across and back and you'll be here again.'

"They all told me: 'If not for you we'd never have crossed.' But I said: 'No trouble at all.'

"Two or three old ladies didn't want to cross. They were just sitting on a bench and looking at the other side. When I asked them if they wanted to cross, they said they didn't. When I asked them why not stretch a leg, they said, 'That's right, why not take a walk?' I helped all of them across. They sat down on a bench there. They didn't want to go back. Though I asked and asked."

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"Many of you wrote me letters. They are very nice and interesting. I'll read some of them to you."

"There it is," Klim thought. "All the heroic deeds I wrote about in my letter. Everybody is going to say, 'How wonderful!' "

Anna Petrovna read many of the letters. But she didn't read his.

"I know why," Klim thought. "They sent my letter to the newspapers. To be printed. Maybe they'll even have my picture in the paper. And everybody will say: 'Look, that's him.' But I'll say: 'It was easy. No trouble at all.' "

of the patriarchal countryside and of the hidebound cowardice of the "enterprising muzhik."

Take the soldiers' insurrections in 1905-06. In social composition these men who fought in our revolution were partly peasants and partly proletarians. The proletarians were in the minority; therefore the movement in the armed forces does not even approximately show the same nationwide solidarity, the same party consciousness, as were displayed by the proletariat, which became Social-Democratic [7] as if by the wave of a hand. Yet there is nothing more mistaken than the view that the insurrections in the armed forces failed because no officers led them. On the contrary, the enormous progress the revolution had made since the time of the Narodnaya Volya [8] was shown precisely by the fact that the "gray herd" rose in arms against their superiors, and it was this self-dependency of theirs that so frightened the liberal landlords and the liberal officers. The common soldier sympathized fully with the peasants' cause; his eyes lit up at the very mention of land. There was more than one case when authority in the armed forces passed to the mass of the rank and file, but determined use of this authority was hardly made at all; the soldiers wavered; after a couple of days, in some cases a few hours, after killing some hated officer, they released the others who had been arrested, parleyed with the authorities and then faced the firing squad, or bared their backs for the birch, or put on the yoke again—quite in the vein of Leo Tolstoy!

Tolstoy reflected the pent-up hatred, the ripened striving for a better lot, the desire to get rid of the past—and also the immature dreaming, the political inexperience, the revolutionary flabbiness. Historical and economic conditions explain both the inevitable beginning of the revolutionary struggle of the masses and their unpreparedness for the struggle, their Tolstoyan nonresistance to evil, which was a most serious cause of the defeat of the first revolutionary campaign.

It is said that beaten armies learn well. Of course, revolutionary classes can be compared with armies only in a very limited sense. The development of capitalism is hourly changing and intensifying the conditions which roused the millions of peasants—united by their hatred for the feudalist landlords and their government—for the revolutionary-democratic struggle. Among the peasantry themselves the growth of exchange, of the rule of the market and the power of money is steadily ousting old-fashioned patriarchalism and the patriarchal Tolstoyan ideology. But there is one gain from the first years of the revolution and the first reverses in mass revolutionary struggle about which there can be no doubt. It is the mortal blow struck at the former softness and flabbiness of the masses. The lines of demarcation have become more distinct. The cleavage of classes and parties has taken place. Under the hammer blows of the lessons taught by Stolypin, and with undeviating and consistent agitation by the revolutionary Social-Democrats, not only the socialist proletariat but also the democratic masses of the peasantry will inevitably push forward from their midst more and more steeled fighters who will be less capable of falling into our historical sin of Tolstoyism!

First appeared on September 11 (24), 1908, in *Proletary*, the Bolshevik Party paper then published in Geneva.

[7] That is, revolutionary in the Marxist sense of this word—organized, politically mature.

[8] Narodnaya Volya (People's Will)—an illegal organization of Russian revolutionaries (Narodniks) founded in 1879 with the aim of fighting the autocracy by conspiracy and individual terror. Shortly after the assassination of Alexander II by members of this group on March 1, 1881, it was routed by the government.

A CONVINCING VICTORY

By Alexander Kotov

Grandmaster

THE GAME I SHALL DEAL with here is interesting not only for its unusual combinational involvements, but for the circumstances under which it was played.

The strongest chess teams in the Soviet Union assembled in Riga late last year. Team tournaments, as everyone knows, are often sharper and more suspenseful than individual battles. But what distinguished this one was the galaxy of players. Competing for the gold medals in the USSR team championship were such stars as ex-world champions Vasili Smyslov and Mikhail Tahl, chess queen Nona Gaprindashvili, Grandmasters Leonid Stein, Lev Polugayevsky, Paul Keres, David Bronstein, Yefim Geller and Mark Taimanov.

Though many ranking teams were assembled, it was evident that only two—last year's champion, the Soviet Army team, and the team of the student sports society Burevestnik—would fight it out for the gold medals. In these two the main forces were concentrated, full of that fighting spirit which is imperative for both individual and team victory.

All the way through, the scales tipped in favor of first one team and then the other. By a whim of the lots, it was precisely these two leaders that were to meet in the final round where the new champion was to be decided. And this is where the unforeseen happened.

Grandmaster Smyslov had to go to the Hastings tournament, so he took the plane for Moscow without waiting for the end of the tournament. It is true that the student society for which Smyslov was playing had piled up a 1½-point lead before the ultimate round, but anything could happen. The team managers lost their nerve and called Moscow: "Vasya, return to Riga, urgent!" Somewhat confused, the ex-world champion, who had not even managed to unpack, was off again to the Latvian capital. There, right off the plane, he sat down at the chess table to face a formidable opponent, Grandmaster Vladimir Liberzon, in an important encounter. Here is the very tense game, full of spectacular plays and a surprising finish.

ENGLISH OPENING

White—V. Smyslov (Burevestnik)		Black—V. Liberzon (Soviet Army)	
1. P-QB4	P-K4	4. B-Kt2	B-Kt2
2. Kt-QB3	Kt-QB3	5. R-Kt1	P-Q3
3. P-KKt3	P-KKt3	6. P-QKt4	P-QR3

This move is to be censured. White is getting ready to attack on the Q-side. A rule of positional play, which still holds in our day, says, "Don't move Pawns where you are weaker." That is why Black should refrain from advancing this Pawn.

7. P-K3	P-B4	10. O-O	B-Q2
8. Kkt-K2	Kt-B3	11. P-QR4	R-Kt1
9. P-Q3	O-O	12. p-Kt5	. . . .

This move will open up the QR-file, on which White can push ahead actively. That is the flaw in advancing Black's Pawn on the edge.

12.	PxP	15. Q-Kt3	P-Kt3
13. RPxP	Kt-K2	16. P-Q4	P-K5
14. B-QR3	B-K3		

Black should refrain from making this move and keep the center in tension by retreating with the Knight to Q2. Now a glaring weakness is created in Black's camp, on his QB3-square, for which, of course, White's Knight immediately sets off.

17. P-Q5!	B-B2	19. B-Kt2	P-Kt4
18. Kt-Q4	Q-Q2		

Grandmaster Liberzon tries to set up an attack on the K-side, but this merely leads to a new weakening of the K-side, of which Smyslov makes subsequent skillful use.

20. Kt(B)-K2	K-R1	21. R-R1	. . . .

There it is—the consequences of Black's erroneous strategy. White's Rook stands on guard here and is ready at any moment to break through into the enemy camp.

21.	Kt-Kt3	24. Kt-B6	QR-K1
22. P-B4	KPxP	25. Kt(K)-Q4	Kt(B)xP
23. RxP	Kt-K2		

Liberzon can no longer stand passive play and tries to create a better position by a sacrifice of a piece. Henceforth, to the very end of the game, we have a whole series of interesting combinational engagements which end in a stunning victory for Smyslov. Could Liberzon save himself by continuing to play passively? Of course not. White's pieces are stationed so formidably that even if Black marked time it couldn't be for long, and White would soon deliver the decisive blow.

26. PxKt BxP



27. KtxP! . . . .

The first of a series of Smyslov's smashing blows. White gives away his Queen, figuring out precisely that after 27. . . . BxQ 28. BxBch K-Kt1 29. Kt(B6)xKtch R(K)xKt 30. BxR KxB 31. R-R8ch Black cannot avoid defeat. (The Rook on the R-file does after all play its role.)

27.	RxKt	28. BxBch	K-Kt1!

Liberzon defends himself resourcefully! After 28. . . .KxB 29. Q-B3ch White's victory would not have been far off. Now, however, it requires finding difficult combinational plays, and Smyslov copes brilliantly with the task.

29. RxR!! . . . .

It is interesting how the world's ex-champion persistently offers the sacrifice of his Queen, which Liberzon refuses to accept. Now, however, Black is compelled to take the dangerous gift.

29.	BxQ	31. B-R6!	. . . .
30. RxP	Kt-Kt3		

There is sense in the sacrifice, it turns out. Black is in no condition to hamper the development of the gradual but steady pressure of White's pieces on the K-side.

31.	Q-K3	34. R-KB1	B-B5
32. P-R4!	QxPch	35. R-B2	Q K8
33. K-R2	Q-QB6	36. R(Kt)-B5!	. . . .

Precision to the very end. Black's King now finds himself in a mate net with no possibility of escape.

36.	BxP	37. B-Q2!	. . . .

Smyslov is implacable, and he pounds even harder. The black-squared Bishop shifts to the big diagonal from where it will strike the final blow at Black's King.

37.	Q-Kt8	40. KtxKt	PxKt
38. B-Q4ch	K-R1	41. RxP!	. . . .
39. B-B3ch	Kt-K4		

A spectacular final blow. Black resigns, since it has no defense against the inevitable mate.

Indeed, an original game and solidly built!

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Drawing by Leonid Sergeyev



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The idea of the continuity of generations of revolutionaries ties together the historical trilogy staged by Oleg Yefremov, artistic director of Moscow's Sovremennik Theater. The plays, all documentaries, are Decembrists, Narodovoltsi *and* Bolsheviks.



TRILOGY: GENERATIONS OF REVOLUTIONARIES

By Lev Anninsky

Photographs by Miroslav Murazov



Oleg Tabakov as Decembrist Kondrati Ryleyev.



Oleg Yefremov as Narodnik Andrei Zhelyabov.



Igor Kvasha as the Bolshevik Yakov Sverdlov.

The archive clerks of the last century, padding downstairs to basement depositories with stacks of court records, applications, records of examinations, appeals and resolutions, never suspected they were carrying dynamite that would explode a hundred years later. Nothing makes a greater impact than facts that have come down to us plain and unembellished from an eyewitness rather than through the prism of a writer's imagination.

*The twentieth century passion for documentation is forcefully exemplified in the production by Oleg Yefremov, the artistic director of Moscow's Sovremennik Theater (*sovremennik *is Russian for contemporary), of three plays:* Decembrists *by Leonid Zorin,* Narodovoltsi *by Alexander Svobodin and* Bolsheviks *by Mikhail Shatrov, a historical trilogy about three generations of Russian revolutionaries.*

On display in the Sovremennik lounge is a poster listing the archives from which playwrights Leonid Zorin, Alexander Svobodin and Mikhail Shatrov selected their material.

The plays are done with portraitlike fidelity, with no fear of documentary wordiness. In this precision you can discern the early Art Theater tradition that the Sovremennik adopted as its credo when it was founded 12 years ago. In sharp contrast to the realism of the acting is the staging as a whole, which does without a curtain, juxtaposes scenes from different periods, and blasts the lines at the audience through a loudspeaker.

These three productions look through and around the documented facts. History can be presented as a collection of facts in their causal interplay, but there is also the philosophy of history, the search for a common meaning behind the facts. This latter course is the one taken by the Sovremennik Theater. The claim that a document speaks for itself is an illusion. All it does "for itself" is lie on a desk. Before it can be made to speak, it has to be comprehended. The Sovremennik's trilogy is not simply a patchwork of thousands of words dating back a century and a half (to 1825), a century (to 1881) or half a century (to 1918) which have been pulled out of the archives. It is our reflections on the meaning of history.

The idea of the continuity of generations of revolutionaries is the inner nerve of the trilogy staged by the Sovremennik. The idea of the continuity of values carried by these generations through a century of historical struggle is the central thought of these plays. The history of the revolution is related to us, to our present, by all of its inner logic. **Bolsheviks** ***has this interesting detail: Every 10 minutes the guard changes; the soldiers march across the whole stage, past the seats in the conference hall, past the telegraph apparatus, through the atmosphere of 1918. The sentries stand at the sides of the proscenium, armed, a symbol of eternal glory and eternal memory. The sentries are in the uniform of today; they are young men of the sputnik era. They are our era. They are our contemporaries meditating on the great meaning of history, on the destiny of our grandfathers and great-grandfathers.***



A hair-raising fact emerges from the records of the interrogation of the Decembrists. When Czar Nicholas I asked them the last and most important question, "*Why* did you do it?" they did not know what to say. "Your Majesty, this is the *spirit of the times.*" "*Justice and truth . . .*" "*Your Majesty,* it is impossible to go against *the spirit of the times. . . .*"

Abstract symbols were the only form in which the Russian intelligentsia of the early nineteenth century could express their ethical principles. The principles had no foundation; they hung in the air, defenseless and helpless.

Playwright Leonid Zorin turns the spotlight on two of the Decembrists, Nikita Muravyov and Pavel Pestel. Humanitarianism and desperate determination are their dominant characteristics—humanitarianism without a foundation, and determination without prospects.

When these intellectuals, who were members of the nobility, rose up against the government of the nobility, they violated, first and foremost, their own ethical code, their own code of honor; and they had no other inner support. Czar Nicholas I knew this. They did not want to lie, but the truth annihilated their concept of honor. Prince Trubetskoy, hero of Borodino,[1] a man who had faced cannon balls unflinchingly, fell to his knees before the czar because he looked on himself as a traitor who had broken a personal union with his sovereign.

Oleg Yefremov plunges the stage in darkness. Pencils of light pick out scattered figures who have no path of retreat; they do not have behind them the street, running to the horizon, on which the action of *Narodovoltsi* takes place. Here there is darkness, and here the czar asks each of them, "How could *you* have done it?" They did not submit because of cowardice but simply because they did not know how to lie.

The tragedy of the Decembrists was that the edifice they tried to shatter was their own home. Themselves members of the nobility, they still felt the same spirit of solidarity with the rulers that had marked the age of Catherine, an age of hopes of enlightenment. Emperor Paul undermined these hopes. Alexander I gave some cause to revive them, but Nicholas I buried them once and for all.

The final scene of *Decembrists* comes as a shock. While officers of the household cavalry make merry at a ball, deep in the stage five faces lit up by an ominous purplish glow come into view—the five who were hanged. This was the bloody prologue to the struggle against the czarist autocracy.

There is still another historical angle in the play. The night before the execution, the specter of a peasant appears before Nikita Muravyov. "There is going to be an uprising," the peasant tells him. "A big one, like in Pugachov's time." "What will you do to me?" the Decembrist whispers. "Afraid?" asks the specter just before it vanishes.

This fleeting episode explains much of the tragedy of the Decembrists who, as Lenin said, "were terribly far from the people." Was it not the specter of a peasant uprising and fear of the people that paralyzed the Decembrists on December 14, when a mob filled the streets adjoining Senate Square and started ripping off the shoulder insignia of officers loyal to the czar? General Miloradovich was shot by the Decembrist Kakhovsky; the czar ran back and forth in confusion among the guns; the artillerymen held their fire—they "could not find any shells"—and the cavalry, met by stick-wielding building workers from the site of St. Isaac's Cathedral, retreated. What did the Decembrists standing immobile in the square think about in the suspense-filled moments before the first canister shot rained down on them? Was it the specter of the uprising which was beginning, the specter of the peasant asking, "Afraid?"

[1] The Battle of Borodino (1812), in which the Russian army held its own against Napoleon's superior forces.



The action of *Narodovoltsi*[2] emerges from the darkness of dungeons into a thronged St. Petersburg street.

History does not move in straight lines. Count Dmitri Bludov, founder of the liberal Arzamas Society, drafted the indictment for the trial of men who had been his friends. A Decembrist who edited the Charter of the League of Prosperity presided, in 1866, at the trial of Dmitri Karakozov, who tried to assassinate Alexander II.

The road of the Russian intelligentsia was as tortuous as that of the Russian Revolution, but in its dramas two poles can always be seen: the autocracy and the people, two irreconcilable camps between which a choice had to be made.

In *Narodovoltsi* Oleg Yefremov uses a realistic stage set. Instead of the blackness out of which the spotlights picked the figures of the Decembrists, a broad street runs off into the distance, lined with buildings resembling barracks. Crowds move along the street all the time.

The action is broken up into short episodes connected by mental associations rather than by chronology. The tragedy of the Decembrists was that they went against the code of honor they shared with the czar. Narodnik Andrei Zhelyabov, organizer of the assassination of Alexander II, had no connection whatsoever with the empire or the emperor; between them lay a gulf, an abyss, bombs. The bombs were not thrown by subjects of the czar. Between the Narodniks—including Sophia Perovskaya, a noblewoman, and Nikolai Kibalchich, son of a priest—and the czar there was no hint of the personal union that so tragically strangled the Decembrists.

Some of the Decembrists felt they could not go on living because their honor had been besmirched, because it was impossible for them to remain "both loyal and truthful." Trubetskoy's premonition is horrifying: "Oh, Lord, what anguish, what hope-

[2] For more on the Decembrists and the Narodovoltsi (members of the People's Will group), see Georgi Zisman's article "Revolutionaries" in the May issue.

ssness!" Mikhail Bulatov nashed his head against the one wall of his cell after the :ar accused him of being a aitor. In general, the theme of iicide held a prominent place the nobleman's code of honor. gnificantly, the playwright's osing words in *Decembrists* is ı announcement that the adjunt who betrayed Pavel Pestel ok his own life 20 years later.

The suicide of the Narodnik oldenberg is a different mat-r. It takes place somewhere ffstage; it is not self-execution rompted by a sense of honor ut cruel penance for naively usting the secret police. The naracter of Nikolai Rysakov, the ian who threw a bomb at the zar and then sought to save is life by turning traitor but who ent to the gallows anyway in ie wake of the comrades he ad betrayed, hardly interests ie playwright and director. The rama of the Narodniks is not a ersonal one. They stand face to ace with the autocracy; their ode of honor is not identified vith the czar.

"My conscience is clear," they leclare as they walk to the gal-ows. There is none of the feel-ng of hopeless tragedy that veighed on Trubetskoy. They vant to give up their lives; they eagerly seek an opportunity to lie for their righteous cause. "You can't escape your fate," says Sophia Perovskaya. "Nor do I want to, for that matter." To them the czarist gallows was not a black dead end but an act of courage. For decades after he execution of the Narodniks historians and psychologists studied the records of their trials n an attempt to understand where and how this generation of martyrs had arisen in the expanses of Russia, and how the peaceful Narodniks, who went from village to village spreading the "gospel according to Lavrov," [3] turned into steel-willed terrorists.

Such determination could have originated only in despair. Behind their feeling of personal doom lay a radiant faith in justice. "If I could have spoken freely with the people, I never would have resorted to force," said Andrei Zhelyabov. What they sought in history was not blood but Truth and Good. The autocracy trampled on their hopes, and in the late seventies bombs began to fly. The most hounded and deceived generation of the Russian intelligentsia retaliated against the autocracy with terrorism. Their bombs held more than simply dynamite—they also held bitterness. Nothing is so painful as Good that does not materialize, as Good that has been twisted into the bitter necessity of Evil. In Andrei Zhelyabov's comrades the czar had opponents of a new type. Solidly united, they nevertheless did not have any support in the country, and all their hopes were for the future.

Was what they did "logical"? Probably not, and most likely Georgi Plekhanov [4] was right when he told them that the most they could hope to achieve through terrorism was to change the II in Alexander II to a III. Plekhanov was right, and what he said was logical and irrefutable, but perhaps the most powerful line in the play is the one in which Sophia Perovskaya counters his arguments by saying:

"What's the good of theorizing when there's nothing to live for, when we're suffocating?"

They were not free to shape their destiny. "Execution" and "death" became the commanding words in their anthem. They had neither a way out nor support. They acted in the name of the people but without the people, knowing that death lay at the end of the road.

Although the people who fill the stage during the play do not take part in the action, they are not the specter that confronted Nikita Muravyov but living, flesh-and-blood people. They vacillate. Today they mourn the assassinated czar and stone a girl student in the square, crying, "You killed our angel!" Tomorrow, seeing the noose around Sophia Perovskaya's neck, they feel sorry for her. "Have mercy on her!" they shout at the hangman. "Butchers! Fiends!"

From one play to the next Oleg Yefremov follows the clear line of the trilogy: The Russian revolutionary intelligentsia makes the supreme sacrifice in its battle against the autocracy, but it is the people who are the decisive factor, and the people are awakening.

"This was not yet the storm itself," said Lenin, writing about the Narodniks, the second generation of Russian revolutionaries, about those who were called "the young navigators of the future storm." The storm was a movement of the masses themselves. The storm was the third stage in the history of the Russian revolutionary movement. This is the subject of *Bolsheviks*.

[3] Pyotr Lavrov (1823-1900), author of many works on the theory of the Narodnik movement, advocated purely nonviolent methods of fighting the autocracy.

[4] Georgi Plekhanov (1856-1918) was a prominent leader of the Russian and international socialist movement and a well-known philosopher and Marxist theoretician.



From the point of view of craftsmanship Mikhail Shatrov's play is the best of the three. The action covers a short period, the fateful hours on August 30, 1918, between the time Dora Kaplan fired at Lenin and the time the doctor came out of Lenin's room, saying, "He passed the crisis."

Lenin is not seen on the stage, but everything is permeated with his presence, with anxiety for him, with waiting and hope. The action focuses on two points: the conference hall of the Council of People's Commissars and the anteroom of Lenin's apartment, connected with the conference hall by a corridor. The play's historical background is that difficult time in the life of the young socialist republic when counterrevolutionaries were instigating revolts and insurrections in various parts of the country, using terrorism to turn back the wheel of history. The play is monolithic; its tension reaches a maximum pitch; the documentary foundation of its action is overwhelming.

In Shatrov's play, dramaturgically the most compact, the subject of the action is truly boundless: "the storm," "a movement of the masses themselves." An awareness of the storm is conveyed by the constant clicking of a telegraph key. Lenin's telegrams go out to all parts of Russia without a stop. Lenin is wounded, but telegrams continue to arrive, and their monotonous rhythm breaks through the dialogue like the powerful vibration of a huge machine. The vibration is continuous, like the pulsebeat of the headquarters of the Revolution; the blood that beats in this pulse is the blood of the millions whom the Revolution has roused to action.

On the stage are Yakov Sverdlov, Chairman of the All-Russia Central Executive Committee, People's Commissars and doctors whose names are now in the encyclopedia; on the stage are the green baize and red velvet of the conference hall. Although the background of the action remains unchanged, we feel every second the force of the revolutionary storm raging beyond it.

Counterrevolutionary terrorists have assassinated leading Bolsheviks Volodarsky and Uritsky. Dzerzhinsky leaves for Petrograd. His telegram arrives: "Funeral tomorrow. Indignation at factories and mills mounting. Workers excited, want revenge. Communists advise restraint, but outrages are not ruled out." The shots fired at Lenin raise the tension to the breaking point. Spontaneous meetings take place at Moscow factories. Workers' delegations throng Red Square. Telegrams come from the localities asking permission for wholesale arrests and executions. Sverdlov declares: "Without a corresponding decree of the Council of People's Commissars we will not sanction this. We do not need the blind rage of the masses. . . . Wire that the chairmen of the executive committees and of the extraordinary commissions will answer personally, up to and including. . . ." At this point Petrovsky says out loud what is in everyone's mind, "I'm afraid they will not wait for anyone's sanction."

It is the logic of the struggle of the masses that now decides people's actions. The men gathered in the conference hall do not want extremes; they weigh the possible consequences of each of their decisions. The style of their debate is in the century-old tradition of the Russian revolutionary intelligentsia. Debating, they quote Goethe and Cervantes, Arthur Arnoux and Le Clerc, Robespierre and the experience of the Paris Commune. They talk of humaneness, of the price of historical progress, of truth and justice. They have inherited from the Russian intelligentsia its ethical emphasis, its humanist ideals, but behind them stand the aroused people, and it is the people who decide. The logic of the class struggle dictates its inexorable proposition: Either we destroy them or they destroy us. In this struggle the traditional spirit of the Russian intelligentsia undergoes a change. Before, the softness of the intelligentsia turned into the courage of despair, while behind it all was the feeling that there was no support. In place of those intellectuals there were now men of calm determination who understood the real logic of the struggle of the masses. For the first time the century-old tradition of Russian revolutionary thought combined directly with a popular movement, with the masses gripped by revolutionary fervor. In this historic crucible revolutionaries of a new type were born—Bolsheviks. This was the culmination of the drama of the Russian Revolution. This was its victory and finale.

HEMINGWAY, OUR LIVING CONTEMPORARY

Seventieth Anniversary of Hemingway's Birth

By Boris Gilenson
Master of Science (Philology)

ERNEST HEMINGWAY is one of the few authors whose influence is remarkably enduring. Time does not seem to affect them; invisibly, they reign over the minds and hearts of men and become classics in their own lifetime.

To say that Hemingway acquired a second homeland in the Soviet Union would probably be saying too little. No other foreign writer of the twentieth century is so popular in the Soviet Union. Hemingway is known not only to scholars, critics and writers but to a wide reading public. He is especially popular with college students and young people in general.

The study of Hemingway in our country already has a history.

In a Stalingrad Dugout

Ten years ago, when the author of *The Old Man and the Sea* turned 60, *Literaturnaya Gazeta (Literary Gazette)* marked the anniversary by printing a short story by the Soviet writer Victor Nekrasov, author of the much read novel *In the Trenches of Stalingrad.* The story was called "Dedicated to Hemingway," and it was about a young Russian soldier, a lad of 18 named Lyoshka, who was in the Battle of Stalingrad in World War II. Lyoshka had a passion for reading. He always had a book with him, even at the front, and managed to read in uncomfortable dugouts that shook from the incessant shelling and bombing. Amidst the blood and thunder of the war Lyoshka lived the lives of his book characters, as wrapped up in their destinies as though they were living people.

One day the author of the story borrowed a copy of Hemingway from a major, a college dean in peacetime, and lent it to Lyoshka. He was not at all sure the lad would like this American author who wrote about things so remote from his own life. Soon after, Nekrasov met Lyoshka at the first-aid station. The boy had been wounded and lay on a cape, his face white as chalk. The first thing Lyoshka mentioned was Hemingway. He had managed to read three stories: about the old man whom war had driven from his home, the Madrid chauffeur Ipolito and the wounded toreador. When Lyoshka was wheeled into the operating room, the bloodstained volume of Hemingway remained on the sheet. Afterward Lyoshka was evacuated across the Volga, and Nekrasov never saw him or heard of him again. This story was based on a real life episode.

That was in the grim year 1942. The volume of Hemingway the soldier Lyoshka had been reading, *The Fifth Column and the First Forty-nine Stories,* was published on the eve of the war. It was compiled and edited by the late Ivan Kashkin, who also translated many of the stories.

The Best Critic and Translator I Ever Had

Kashkin was a tall, thin man with a thatch of red hair, in old-fashioned steel-rimmed glasses, who always wore a navy-blue Russian blouse. He was a many-faceted, highly original man of letters, translator into Russian of British and American prose and poetry, teacher, editor, critic and student of the craft of translation. But perhaps his greatest service to literature was the work he did to popularize twentieth century American literature. In the thirties he was the first, together with the poet Mikhail Zenkevich, to introduce the Soviet reader to poets Edwin Arlington Robinson, Vachel Lindsay, Edgar Lee Masters, Robert Frost and Carl Sandburg. He also translated and wrote studies of Ambrose Bierce, Erskine Caldwell and William Faulkner.

To Hemingway, his favorite American author, Kashkin devoted almost 30 years of his life. He followed Hemingway's literary development, translated his work, edited translations by others, and promoted the publication of his books. One of Kashkin's friends once jokingly called him the man with "a graduate degree in the Hemingway sciences."

His work on Hemingway started in 1934, the year the magazine *Internatsionalnaya Literatura (International Literature)* published Russian translations of "The Killers" and "Indian Village," accompanied by an article by Kashkin. A translation of *Death in the Afternoon* followed; it was done by a team of writers, with a foreword by Kashkin. There were also several other publications.

Ivan Kashkin's work came to Hemingway's notice. He read an article by the Soviet critic, a discerning review of his work, early in the thirties, a period when he was going through a crisis in his writing. We know that Hemingway did not have much use for critics, feeling they addled writers with excessive praise or beat them into self-depreciation. He said as much in *The Green Hills of Africa.* Yet there he was sending a letter to distant Russia, to a Russian named Kashkin, a man he had never met. "It is a pleasure," he wrote, "to have somebody know what you are writing about. That is all I care about. What I seem to be myself is of no importance."

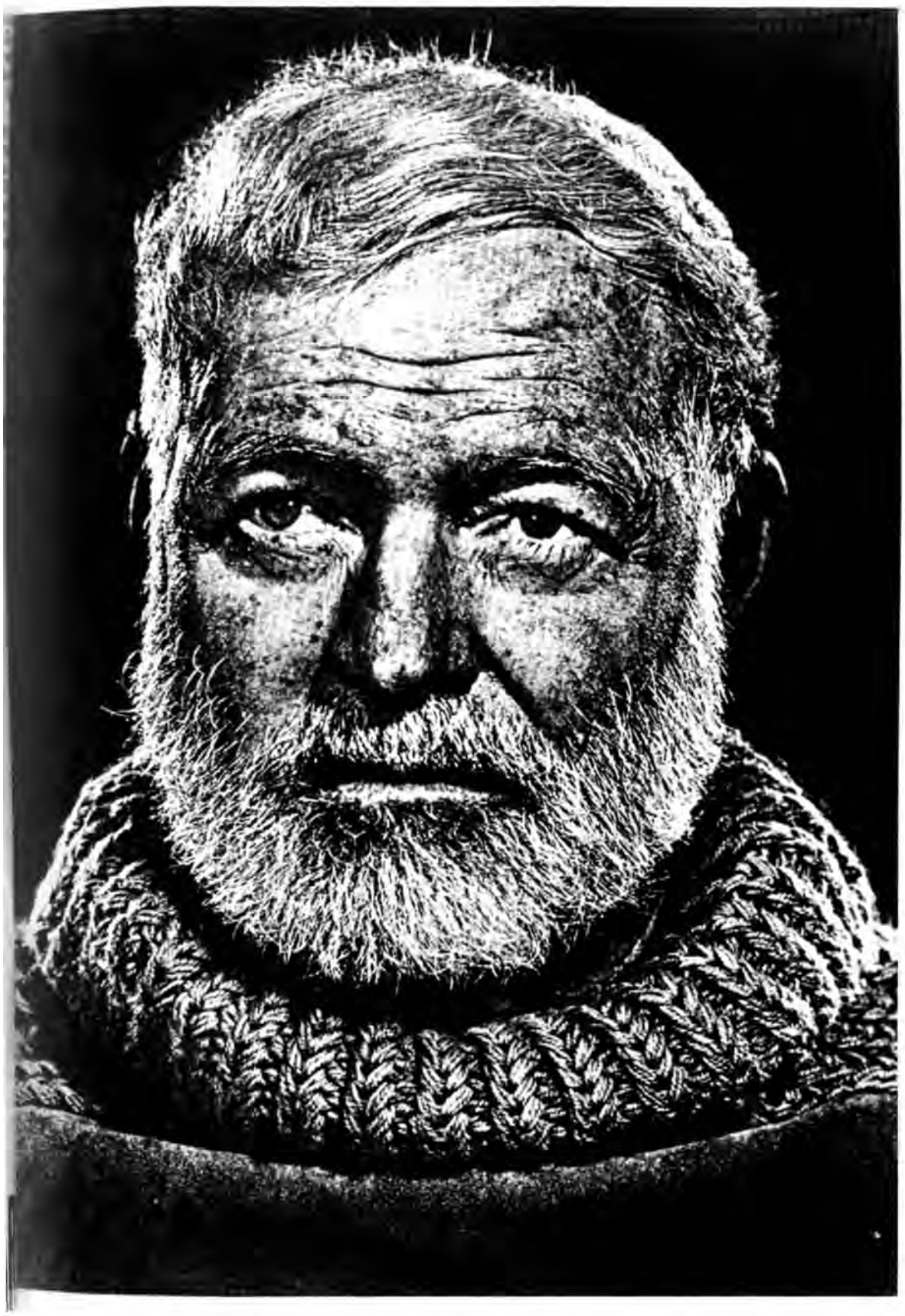
There were other letters. In one, dated 1939, Hemingway wrote: "So long, Kashkin, and good luck. I appreciate your care and integrity in the translation very much. Give my best regards to all the comrades who work on the staff. Comrade is a word I know quite a lot more about than when I first wrote you."

After World War II, in a letter to novelist Konstantin Simonov in June 1946, Ernest Hemingway mentioned Kashkin. "There is a boy (now probably old man) in the USSR named Kashkin. Red-headed (probably gray-headed). He is the best critic and translator I ever had. If still around, please give him my best regards."

It is interesting to note that one of Kashkin's first articles, "The Tragedy of Craftsmanship," an analysis of Hemingway's style written in 1934, was included by the American critic Carlos Baker in his first anthology of critical essays on writers.

On his return from Spain in 1937, Hemingway wrote to *Internatsionalnaya Literatura,* thanking the magazine for sending him a copy with an article by Kashkin. "I hope," he wrote, "I will keep Kashkin busy revising my ultimate biography for some time yet."

Hemingway was not mistaken. The critic followed his creative development closely. In his earliest reviews he pointed to what it was that drove Hemingway up blind alleys.



Later he emphasized the life-asserting motifs of the author of *A Farewell to Arms*. Only after Kashkin's death, in 1966, did his major work appear, *Ernest Hemingway. A Critical Biographical Essay*. The book is the most penetrating study of Hemingway published in our country.

A Writer with a World Voice

Kashkin was not the only one to write about Hemingway, of course. Soviet authors have always had an exceptional interest in this American novelist. Back in the mid-thirties Yuri Olesha took issue with critics who claimed that Hemingway "did not care what he wrote about" since to him the world was a "dead thing," reminding them that Hemingway's characters yearn for a real, a genuine life.

Another Soviet novelist, Andrei Platonov, had a keen appreciation of the connection between the ethical and the esthetic in Hemingway. Hemingway, he said, valued human dignity but instinctively feared "lapsing into vulgarity, tactlessness. He felt it was somewhat vulgar and in poor taste to portray, openly and directly, the triumph of good or the heroic in people and in their relations. So Hemingway looked for an indirect way: He 'cooled down' and 'ennobled' his subject matter and his style with understatement and cynicism. . . ."

During the war against fascism Ilya Ehrenburg spoke of the artistic power and anti-fascist inspiration of *For Whom the Bell Tolls*.

Of Hemingway's death in July 1961 the writer Leonid Leonov had this to say in *Pravda:* "I have followed the stages of his creative writing closely and believe that many of his innovations will have their interpreters, commentators and imitators. He was a writer with a world voice, and it seems to me mankind will feel his absence greatly in the years to come."

Professional writers are not the only ones who argue over Hemingway. When, in 1956, the new magazine *Inostrannaya Literatura (Foreign Literature)* published *The Old Man and the Sea*—it has since gone through a number of editions in Russian and has been translated into several other languages spoken in the Soviet Union—it was widely discussed by both critics and readers. Some found it optimistic, others pessimistic. Probably undergraduates at a teachers college in Moscow expressed the more general point of view in this open letter to Hemingway which *Inostrannaya Literatura* published:

> Your story *The Old Man and the Sea* made a strong impression on us. We understand the allegory this way: People everywhere fight for happiness and a life worthy of man. They do not always win: They experience adversity and defeat. It happens (in history this is the way it has always happened) that the gains of the people are stolen from them by the forces of evil. But those like the Old Man, who are capable of daily feats of valor, learn how to triumph. They do not despair after the most bitter misfortunes, do not despair, but continue fighting.

They Know Him and Admire Him

Critics and scholars write about Hemingway. Chapters are devoted to him in textbooks. People in small towns and villages, as well as in Moscow, Leningrad and Kiev, read his novels. Books on Hemingway are popular. The study by Lillian Ross, *Portrait of Hemingway,* was sold out in a matter of hours.

Hemingway is one of the idols of the youth. Every so often you see haircuts and beards *à la* Hemingway. The poet Yevgeni Yevtushenko dedicated his poem "Meeting" to Hemingway. The young sculptor Yevgeni Duzhev made a bust of Hemingway. Novelist Yuri Kazakov wrote an essay on Hemingway the sportsman. Nodar Dumbadze of the Georgian Republic made Hemingway the hero of one of his novellas.

At the gathering at the Literary Museum in Moscow to mark his sixtieth birthday, the hall was jammed and many had to be turned away. That autumn a two-volume edition came out in a printing of 300,000 copies. It was followed by a second printing. The two volumes were presented to Hemingway by Anastas I. Mikoyan, then Deputy Chairman of the USSR Council of Ministers, during his visit to Cuba.

Last year a four-volume collection of his writings was published, the most comprehensive in Russian. Included in the collection are *For Whom the Bell Tolls* and a large number of stories, essays and articles hitherto unknown to the Soviet reader.

The Secret of Hemingway's Popularity

Why is Hemingway so popular? Is it because of the quality of his writing, his laconic, masculine style, the famous Hemingway dialogue, his interpretation of the love theme, his subject matter? Or is it because of the spirit of his books, the nature of his characters?

Konstantin Simonov, who, incidentally, was one of the editors of the four-volume edition, puts it well when he says: "Like many Russian readers of Hemingway, I love him not only because of his amazingly courageous books but because his life was an example of courage. I love him for his hatred of fascism, a hatred which he showed by actions as well as words. He fought against fascism everywhere."

There is indeed something in Ernest Hemingway that makes him akin to our literature, to our concept of the author and his social function. His was no ivory tower attitude toward contemporary affairs; he was an anti-fascist, a democrat and a humanist.

Hemingway would have been 70 this July. To us he is not a sanctified classic. He is our living contemporary.

Until very recently, when you said "animated film," the immediate association was Walt Disney. His method and style set the tone for producers the world over. In the last few years, however, animated film makers have begun to break away from the Disney tradition; they have made very different and very interesting films in a variety of styles. Here SOVIET LIFE correspondent Ludmila Borozdina interviews young Soviet animated film director Andrei Khrzhanovsky.

A YOUNG DIRECTOR ON ANIMATED FILM MAKING

QUESTION: Would it be right to say that Soviet animated film making is trying to free itself of the Disney tradition?

ANSWER: Absolutely. But to give due credit to Disney, I must say that it is not his style that is being rejected. Nobody argues about the quality and charm of his pictures. The idea that his is the only possible way of making a film is the point at issue. Disney's influence was so strong and his imitators so many, that the animated cartoon seemed to confine itself not only to a single style but even to a definite range of images. They kept popping up in successive films, and not in serial films, but in completely independent works with unrelated plots. This certainly limited possibilities.

Disney's creations were the products of a definite period. They were distinguished for a certain enchanting naïvete, by virtue of which, I believe, they are doomed to the same fate that befell, say, Walter Scott's novels. These were read with great avidity by the author's contemporaries, but today they are popular mainly with children.

QUESTION: What do you think are the major trends in contemporary animated cartooning?

ANSWER: First of all, the same as those seen in the traditional forms of dramaturgy. Films with clear-cut plots are increasingly being replaced by plotless

Continued on page 57

The Tale of the Golden Cockerel. 1967.
Director Alexandra Snezhko-Blotskaya.
Cartoonist Victor Nikitin.



1.
Bonifatius on Holidays. 1965.
Director Fyodor Khitruk.
Cartoonist Sergei Alimov.

2., 5.
The Very, Very, Very, Very Best. 1966.
Director Vasili Livanov.
Cartoonist Maks Zherebchevsky.

3.
A Little Elephant. 1967.
Director Yefim Gamburg.
Cartoonist Natan Lerner.

4.
The Tale of the Golden Cockerel. 1967.
Director Alexandra Snezhko-Blotskaya.
Cartoonist Victor Nikitin.

6.
The Daughter of the Sun. 1963.
Director Alexandra Snezhko-Blotskaya.
Cartoonist Ildar Urmanche.



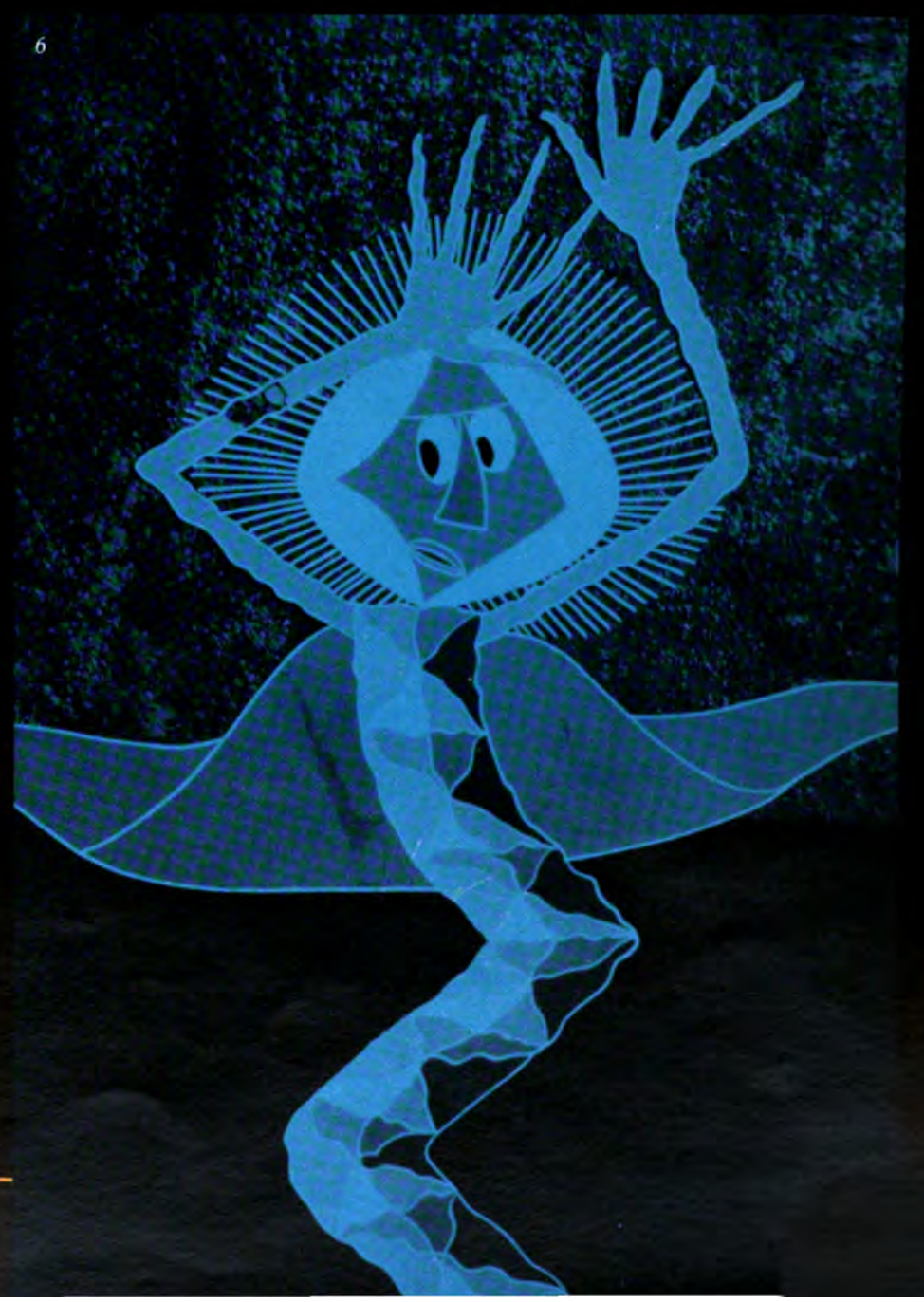

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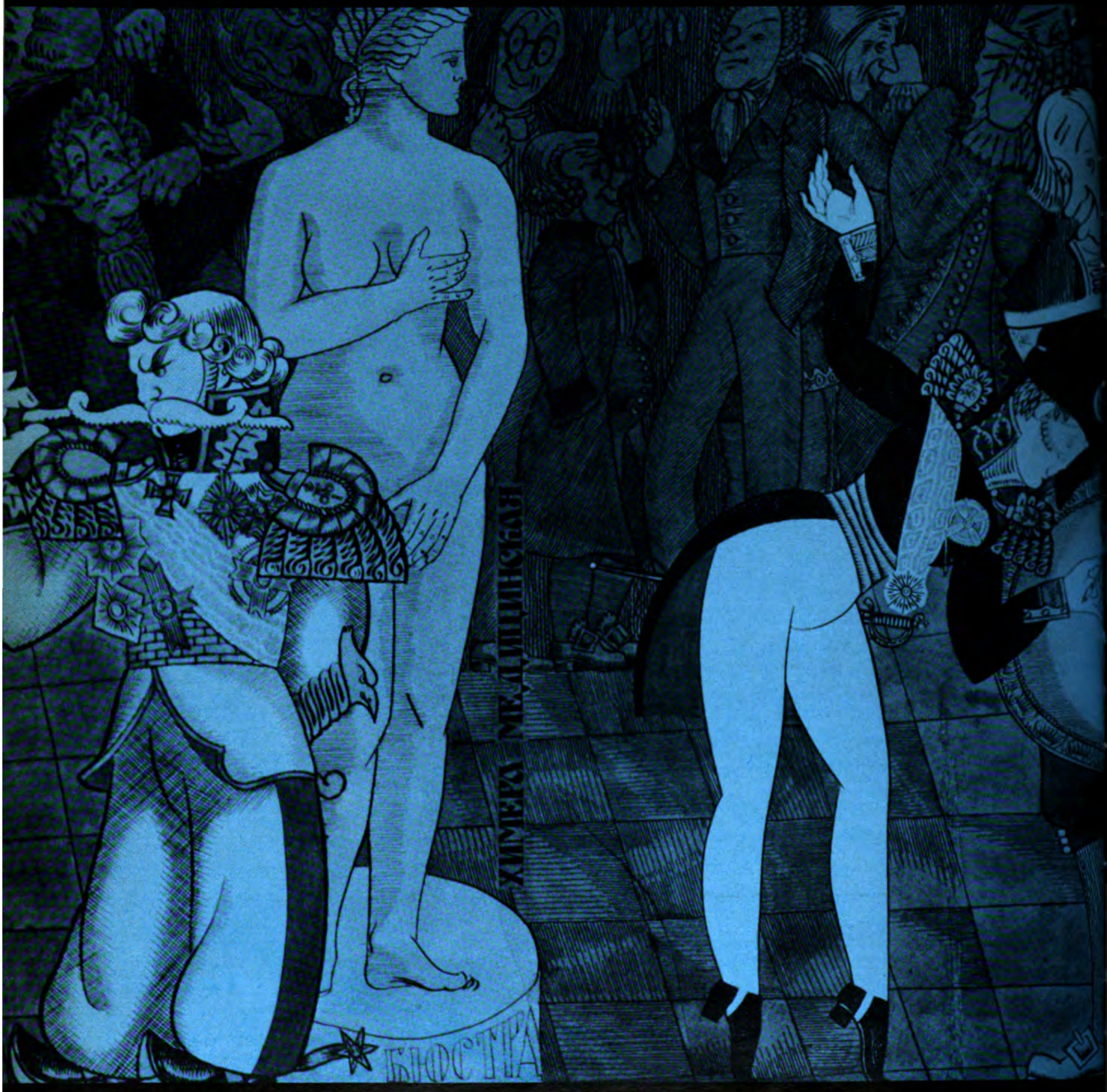

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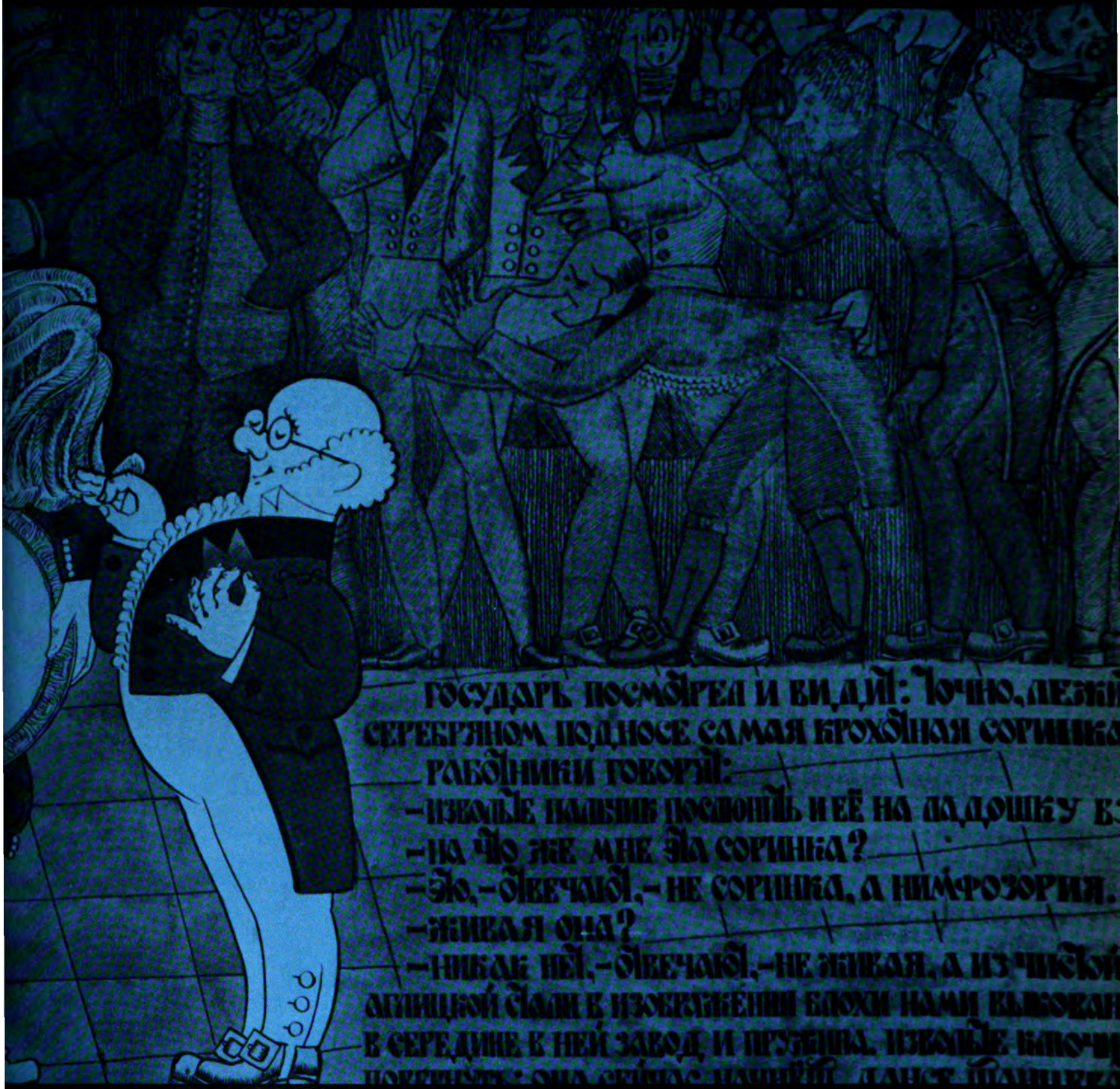

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In animated cartoons, a tiny detail can tell a big story.

The Left-Hander. 1964.
Director Vladimir Danilevich. Cartoonists Arkadi Tyurin, Marina Sokolova and Anatoli Kuritsin.



Cartoon films bring together the seemingly incompatible.





Right and below: ***A Glass Harmonica. 1968.***
Director Andrei Khrzhanovsky.
Cartoonists Yulo-Ilmar Sooster and Yuri Nolev-Sobolev.



Underlying the entertainment: the film makers' philosophy.

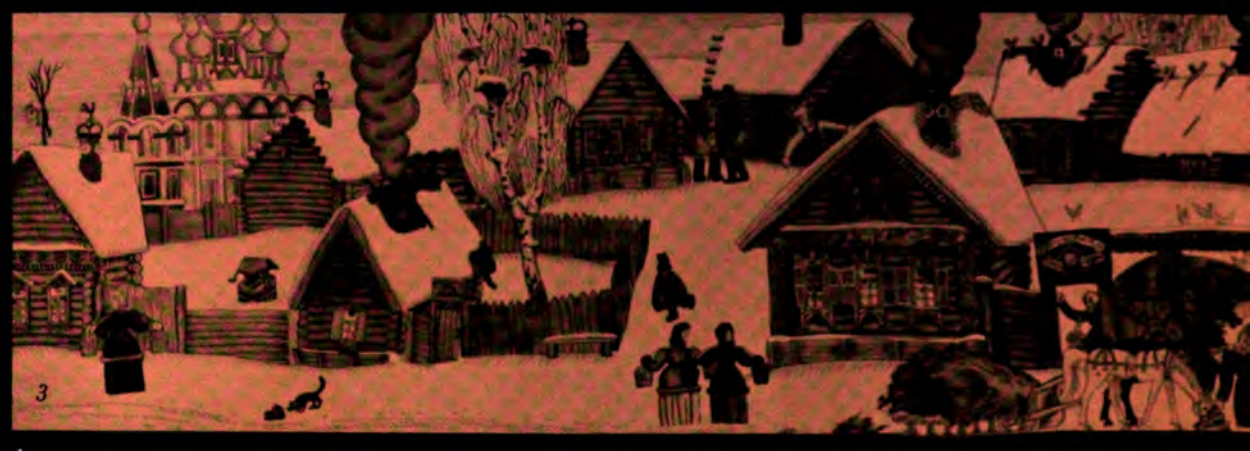


Frantisek. 1967.
Director Vadim Kurchevsky.
Cartoonist Olga Gvozdyova.









1.
A Knot. 1968.
Director Nikolai Serebryakov.
Cartoonist Alina Speshneva.

2.
The Tale of the Golden Cockerel. 1967.
Director Alexandra Snezhko-Blotskaya.
Cartoonist Victor Nikitin.

3.
The Left-Hander. 1964.
Director Vladimir Danilevich.
Cartoonists Arkady Tyurin, Marina Sokolova and Anatoli Kuritsin.



A Shepherdess and a Chimney Sweep. 1965.
Director Lev Atamanov.
Cartoonist Victor Nikitin.

An animated cartoon blends thought with it's spontaneity.

Continued from page 48

works, growing, as we know, from a new attitude toward the viewer, a greater confidence in his imagination and intelligence. Brecht in his day said that modern dramaturgy "must employ all the contacts existing in life, all its statics. Its dynamic tension is created by positively and negatively charged details." This tendency toward statics is evident in the way detail is given a larger dramaturgical function today.

There is also the tendency of contemporary dramaturgy toward paradox as a form of subtle irony.

Another characteristic feature of the contemporary cartoon film is that it tries not to be wordy; it depends a great deal more on the visual image. And lastly, the images themselves have become more sophisticated, more versatile.

The contemporary cartoon film goes in for fantasy, the incredible; it plays directly to the imagination. After all, when you look at such a film, you consciously prepare yourself for illusion: You give your imagination free run. That's why I think—and this should not surprise you—that directors like Bergman and Fellini, whose films are so suggestive and whose images are given so much free play, have much in common with cartoon film directors.

QUESTION: Would you say that animated cartoon films are moving in much the same direction as film making generally?
ANSWER: To a certain extent, yes, with differences because of the special nature of the animated cartoon.

The animated cartoon, if you please, is a very unique film medium. It can do what other kinds of films cannot: compare things which do not seem to be comparable. It can express a wide range of ideas and express them with great precision and detail, something that other film forms cannot possibly hope to do. Realization of this fact touched off a reassessment of the animated cartoon's possibilities. Not only, it turned out, was it a fine medium for the children's or the pure entertainment film, but it could also be used to convey complex philosophical ideas.

This last point, by the way, explains why we see, here and everyplace else, a marked increase in the number of animated cartoon films intended for adult audiences. Not that there is any diminution in the traditional function of the animated cartoon: creating films for children.

The world has begun to grow up. Terrible wars, profound social upheavals and scientific discoveries have radically altered man's idea of his world, forced man to reshape himself spiritually. Answers to complex issues were needed; it became necessary for us to help one another understand our world and interpret it. The animated cartoon turned out to be remarkably well suited for that job. The new tasks it was assigned required new means.

QUESTION: Do you think that the new tendencies in animated cartooning are promising?
ANSWER: You see, every progressive tendency is worth its salt while it continues to develop and move ahead, until it turns into another dogma. I must emphasize this because clichés and stereotypes multiply and spread with progress. Already stereotype films have been produced in the so-called modern style. And at the same time, we have animated cartoonists in many countries, as well as in the Soviet Union, producing excellent films in the old classical style.

The choice of style alone, therefore, does not give a film contemporary artistic significance. What counts is how good a vehicle a particular style is for the author's conception, granted, of course, that the conception is fundamentally contemporary.

QUESTION: We know that the artist is very much part of the animated cartoon process. Do modern tendencies increase the artist's role or diminish it?
ANSWER: The artist's role unquestionably increases. The cartoon film is, after all, an art form.

Speaking of new trends in drawing and painting techniques in animated film making, we find many artists striving for an unusual interpretation of space, depicting its multidimensional quality by using combinations of involved perspective.

Movement in many cartoon films is more expressive, more economical, sometimes more abrupt as compared to the smooth-flowing classical film—this being a better reflection of the tension of contemporary life.

Many interesting artists, distinguished for their fresh ideas and original styles, have contributed to cartoon filming in recent years. Sergei Alimov, for example, is co-authoring with leading animated cartoon film maker Fyodor Khitruk. Then there are Nikolai Serebryakov, Alina Speshneva, Marina Sokolova, Yulo Sooster, Yuri Sobolev and Nikolai Popov. Our animated film studios are indebted to these artists for a rise in artistic standards. One of the key problems of contemporary cartoon film directors is to use the talents of these people wisely and carefully. This has become a difficult task in the conveyor setup typical of classical animated film drawing. It is one of the reasons we are abandoning the Disney style. Many studios are now trying to organize cartoon film production around a small group of creative workers.

QUESTION: Why did you personally choose this type of film making?
ANSWER: Comparing the animated film with other types of film making is like comparing poetry with prose. In both the animated cartoon and poetry, you can get the maximum synthesis of impressions, depict a whole world through a detail, express a sophisticated concept in a line and a phrase. Animated cartoons give me the opportunity to say what I want to with visual poetry, and this is what I want to do. To my mind, that is the shortest road to the mind and heart of the audience.

In addition, there is that business of individual preference. One writer is born with a leaning toward the novel, another with a leaning toward the short story, and still a third with a special feeling for poetry. Nothing you can do about it. That's why every story of Faulkner's, for instance, seems to be a small-scale novel, while large-scale works by Saroyan or Maupassant seem to be woven of separate novelettes. In my case, I incline toward the small forms.

And one thing more. My feeling is that the animated film in its present new stage gives an artist a large, and perhaps the most favorable, area in film making to realize his most daring conceptions.

BEARSKIN FOR

BY VALENTIN RASPUTIN

Valentin Rasputin is a Siberian. After graduation from Irkutsk University in 1959 he worked on youth newspapers in Irkutsk and Krasnoyarsk. He published his first short story in 1961 and has been writing fiction steadily since. He ranges widely for his situations and characters and seems to be drawn particularly to the dramatic and impressive in the lives of ordinary working people.



Drawing by Nikolai Vorobyov

A TOURIST CAME UP, looked it over and screwing up his face, said with displeasure:

"There's a spot on it."

Another one said indignantly:

"Why, it's full of holes."

So, a bearskin is offered for sale.

Formerly, the beginning almost at once passed to the end. There is rarely a sequel in such cases: The shot kills the sequel together with the beast. For this, one needs a split second: Press the trigger, feel the thrust on the shoulder, and then slowly, holding the finger on the trigger again, go up to the carcass, which is quivering as if sobbing.

Cautiously he would approach the carcass of the bear and look for the spot he had aimed at. There were the bullet holes, exactly. Satisfied, he padded around the dead beast for a long time and only then would he skin it.

The skins he sold to tourists, and liked to tell them how he managed to bag the bear, so that the tourists should not tread casually on the skins in their city apartments, but treat them with proper respect.

He was a good bear hunter, and the beginning of the encounter with the beast almost at once passed to the end. But this time, the beginning was only a beginning, after which came a long and dangerous sequel. He did not want it—it happened of itself and developed in spite of himself. He could not change anything about it.

That winter Vasili looked after a reindeer herd some 25 miles from the settlement. Three hundred deer, three herdsmen. A small winter hut for the men, the taiga for the deer, and winter for both. Once a month, one of the men would go to the settlement for provisions; the deer dug up the moss from under the snow. And the winter, this endless white time, could not be avoided or sidestepped. Its winds and snows, like the hour and minute hands of a clock, followed one after another, now coming together, now drifting apart again over the mountains, with the figures hardly noticeable on the white clockface.

On the eve of the New Year, the dog led Vasili to a lair. As usual, he kept the dog off, chose a pole, aroused the beast, drove it out of the lair and fired—everything proceeded as usual, as if he were reading the same story, contained on three pages of some worn book, for the twentieth or thirtieth time.

He walked cautiously up to the dead animal. From behind, quite near, came a deafening roar. He swung round, pressed the trigger. The shot rang out before he had time to aim. The bear, darting out of the lair, stumbled and Vasili fired once more, again without aiming. The beast reared up, and Vasili saw a big white spot on his breast—the last thing that should have remained in his memory. But now something incomprehensible happened. The bear was no longer a bear: Suddenly he jumped aside and crushing the brittle winter shrubbery, swept away the snow with his white breast and dashed off. The dog raced after him, but it also understood that fate must not be tempted twice, and came right back. Vasili stood in the same unnatural position he had taken to prepare himself for the bear's leap. It seemed to him that the moment stretched: It would come to an abrupt end, and then would come the leap. Finally he drew himself up and approached the dead bear. The beast lay with its forepaw under its head, as in a children's film, to amuse children. It was a she-bear.

Later he was told more than once: "It's all because it was a she-bear. If not for that, everything would have ended as it always does. But now you see how it turned out."

He was making his way to the hut, and what had happened seemed to him scraps of something incomprehensible and strange. The scraps hung before his eyes, got in his way, but he couldn't brush them off. The white breast, hanging over his head—why white? How did a spotted bear get to the Sayans? A shot, another—how was it that neither of them hit him? The last moment in his life, and suddenly the bear jumps aside, and the last moment, like a soap bubble, turns into spray, after which time again begins its even, invariable course: day and night, winter and summer. A miracle had taken place, and that was strange, because life long ago gave up using miracles. It uses chance as rarely as possible, so that man will not rest his hopes on chance; life, like a previously programed task, simply moves on to its logical end, and that's all.

Silence reigned—white silence with fir needles on the snow; with kind trees carefully holding the snow on their branches, as if holding out offerings of bread and salt; with spacious winter well-being. The silent slopes, the trees, all of this was important, much more important than what had happened. Vasili walked on and gradually calmed down. Then he saw the smoke over the winter hut, also whitish, matching the color of the winter. The smoke rose and dimmed out high above, and he thought that he had returned to a calm, measured life again.

A week later some stray bear killed a deer.

"It's the stray I rooted out," Vasili told the shepherds. "No one else could have done it."

But he decided to ride over himself and see how it happened. The snow that had fallen during the night buried all traces, and now there was nothing to see. He stood for a while, as if he were waiting for witnesses, and then turned to go back.

All of a sudden, his eyes, as if in obedience to some outside power, turned to the right and were stupefied by what they saw. That was he—first Vasili saw his white breast, raised over the white snow, then his screwed-up, furious eyes, the eyes of an enemy who had declared war.

The calmness of the beast astonished and frightened Vasili. He was used to the roar, fury, the leap which the bullet cut short; in such cases he himself was calm and composed. But this bear already knew there were such things as bullets and was in no hurry; he did not want to make the first step.

The reindeer, snorting, was tearing the reins out of Vasili's hands, pulling him downward, to the path. Following the deer, he drew back two steps and unslung his rifle. The bear also got ready. Vasili did not fire: For the first time in his life he did not trust his gun; suddenly it felt to him like a child's toy. The deer was pulling him further and further down to the path, and he drew back another three steps. He kept moving backward and counting the steps—five, six, seven, ten, twenty. . . . Then he turned and broke into a run.

Not far from the hut he stopped and looked back. The bear stood on the slope of the mountain, watching him.

Vasili had a strange feeling, as if he had let in a stranger to warm himself, and the man had turned him out.

It was more than a strange feeling: as if he had forgotten to tell himself where he had been and what had happened to him.

Before, he had no idea what fear was. He had always thought it was something like laziness—a man doesn't want to do one thing or another, and he thinks up all kinds of excuses for himself. But now he felt some outside pressure alien to everything that was in him. There, alone with the bear, he searched for strength in himself, enough to break down the fear, and found none.

He wanted neither to talk nor to go anyplace. Everything seemed deceptive, even movement.

Several days went by. Once he went out to have a look at a sick reindeer, kept in an enclosure that the herdsmen took care of in turn. It was a cold night; even the dogs moved into the hut, and so the bear came up close.

He jumped on Vasili from one side, as though from an ambush. As he fell, Vasili screamed, and later it seemed to him that he couldn't stop screaming. But suddenly it was morning, a quiet morning, and he and all the others were there. This again seemed surprising to him. He listened to the story the men told him, how, hearing his screams, the dogs rushed out and saved him. And he thought about miracles, that they are called miracles because they let a person come through danger alive.

He was not badly mangled. But the bear got away. Now there was no longer any doubt that the bear was after him, Vasili. The roles had changed: This time it was not the man who hunted the beast, but the beast who hunted the man. Everything habitual became unfamiliar for Vasili—the same paths, the same taiga, but now that he was being pursued, they had changed their attitude toward him. They seemed strangers and suspicious. They were against him.

Vasili put away his rifle, which he did not trust any longer, and went out only with a carbine.

Once he discovered to his shame that he had taken his carbine to go for water, although the river was only twenty steps away. He stopped and tried to recall when he had picked up the gun, but couldn't: It was a moment that had slipped out from under his control, a moment controlled by fear. Vasili swore and took the carbine back to the hut.

Another time it seemed to him that someone was following him. He turned round abruptly—there was nobody there, only the

SALE

taiga and the winter. He went on, and again he heard steps behind him. They followed him right to the hut.

When the dogs barked outside, he huddled up: Was it the bear?

Time divided itself for him: Each hour had sixty minutes, each minute sixty seconds, only sixty precise moments, and each of these moments could be his last.

And if the miracle, which had already saved him twice, was one moment late, he would be dead. He didn't know whether it was worth counting the hours which would come the next day: It might be that he would have no use for them. Then it seemed to him that it was not worth bothering himself with all that; let things run their course. Why should he collect hours, months, years? Man would never be reconciled with age; they were perpetually at war, both in childhood and old age—in childhood for want of years, in old age for too many. And even if peace did set in, it would be an uneasy peace, because time has to be balanced between childhood and old age, between "will be" and "was," between hopes and recollections.

He calmed down, but not for long. Then again he was seized by fear, and everything in him broke. All the strength he had built up the day before collapsed, and covered with shame, he walked amidst the ruins, searching for the remnants of his Chinese wall.

During the night the dogs barked furiously, and he imagined the bear glaring at the light in the hut, from a distance.

Once, in broad daylight, Vasili saw him, again on the same mountain slope: the bear, aiming at him, its muzzle stretched out, resembling the barrel of an old cannon.

Vasili decided to go away. He was tired of the fear and the worry, of the effort of will it took to hide them. More than once, coming out of the hut, he felt like a victim being lured out for sacrifice. It would be better to go away from this place of execution. Then everything would straighten itself out; everything shattered and thrown into confusion would revert to its usual order. It was stupid to submit to the will of a beast—who was going to win? And for a sick man, stripped of confidence and strength, it was asking for trouble.

He left early in the morning, and toward evening he was in the settlement. The chairman listened to him and kept quiet. It seemed to Vasili that the man didn't believe a word he said.

"With a spot, you say?" the chairman asked. "I thought they lived in the Himalayas. How does he happen to be here? And he may be after you because of the she-bear—I believe that. How do you like that! Seeking vengeance!"

He laughed and went on: "All right! I'll give you another herd. And the beast will wander from place to place and forget. A beast is a beast, after all."

Sixty miles separated one herd from the next.

Vasili had been living at the new place nearly two months. The winter was drawing to a close, and the winds, dispersing it, grew stronger and stronger. But they no longer obstructed the sun—all appeared together. Winter and spring, as belligerents, now stood opposed to each other: Spring came in the daytime, winter still held its positions at night.

This was the busy time of year. Vasili did everything that had to be done with great satisfaction: After a man has been saved from death or been delivered from trouble, the ordinary and habitual give him pleasure. Nothing threatened him now—he lived in a zone of tranquility and work and wanted nothing else. And when recollections of the bear visited him, he regarded them as beggars asking for alms.

Then spring set in. In the mountains one felt the happy excitement. The mountains seemed to be closer to each other, celebrating some kind of a holiday of their own, perhaps the New Year. The fact is, every new year begins with spring.

And all of a sudden, one fine day, all this collapsed. Early in the morning, hearing the dogs bark, Vasili came out of the hut, taking his carbine with him to be on the safe side. The dogs were already far away and Vasili, listening to their barking, tried to figure out what they were chasing. What he saw was unexpected and terrible. The bear, beating off the dogs, jumped out into a clearing near a rock, reared up, showing Vasili his white breast. Vasili didn't even try to fire. The silence he felt was the silence between the lightning and the thunder: The flash had blinded him and in a moment the thunder would crash.

But everything was quiet and only the dogs were barking at the top of their voices in the distance.

"Found me, found me, found me." This thought, like a float, now dived into the depth, now rose to the surface of his consciousness.

It was not difficult to imagine how the bear, searching for him, combed the taiga, how he stood for hours somewhere not far from the hut to see its inhabitants, how he wandered round the settlement keeping each person in his bear mind, how he growled sorrowfully when he gave up hope, and then catching the smell of smoke, went on again. He stopped being a bear in the ordinary sense of the word. He became a pursuer—that was the main thing for him, and everything else he did was only to preserve the pursuer in him.

The next day the bear came to the hut again. This time the herdsmen tried to kill him, but he went off, leaving traces of blood on the stones, as if inviting Vasili to follow.

"Bullets don't touch him," one of the men said regretfully that evening. "You'd better leave, Vasili. He's a maniac, that bear."

"I have to leave," Vasili agreed.

A hunter, a man who lived in the taiga, he shut himself up within the four walls of a house, in the three streets of a settlement, left himself with only enough air so that he would not suffocate. And when, unable to endure it, he started out somewhere that was no more than a quarter mile from the settlement, every man he met would tell him: "Vasili, take care!"

There were no eyeballs, retinas or pupils in his eyes, there was only anguish. He carried the carbine with him as proof of his helplessness. He talked very little—he had nothing to say.

Hunters would drop in, bring news:

"He was seen at the winter hut in Pokrovsk. Twice they shot at him on the Markhoy."

He listened, nodded and in his mind he drew a map of the bear's approach. The beast was already near.

Then the postman came running. Usually a postman brings letters, but this time he brought the news that Vasili was waiting for.

"He's here," he said, looking at Vasili closely. "Come on, I'll show you."

They got up on the roof, and through binoculars the postman showed him a white spot, where a black dot stirred.

"All right," Vasili said. "Thanks."

He dressed unhurriedly, put a piece of rye bread in his pocket. There was nothing in his heart, only emptiness, and he couldn't understand whether he was frightened or not. His dog followed him, but he drove it away.

He walked slowly, knowing that the bear was also coming slowly in the opposite direction. The summer day was sunny and green; neither of them could complain of the weather.

As though on plan, they met in a spacious clearing, where there was room enough for both to fall. Vasili came out from one side, the bear from another. The bear roared and reared up, showing his white breast, as though he were identifying himself.

He had grown thin and dragged his forepaw. It had been broken, apparently, and had not knitted. His eyes were tired and angry, but the bear dignity showed through all this.

For a few moments they stood staring at each other, as if they could not agree who should begin. Then the bear came forward—it was his legitimate right. During the months of pursuit, he had learned slyness and caution, but he did not make use of either—perhaps he forgot, perhaps he didn't want to. He came nearer and Vasili raised his carbine. The bear jumped.

The shot resounded somehow reluctantly but the bullet hit the mark. The bear fell. Vasili fired once more and was immediately sorry he had—there was no need to shoot again.

He went up to the bear's carcass and sat down beside it. He felt neither joy nor satisfaction. He didn't know what else to do, so he took the piece of rye bread out of his pocket and began chewing it, listlessly and indifferently.

He, the victor, sat beside the bear and seemed a murderer to himself. And the bear lay beside him and probably didn't even know that he was dead: He was still proud, still strong.

SOVIET TEENAGERS: WHAT THEY WEAR, SING, DANCE

By Alexander Mariamov
APN Correspondent



Reader Margit Rosen of California says she is interested in anything that has to do with teenagers. She asked us to tell her how Soviet teenagers dress and the dances they like.

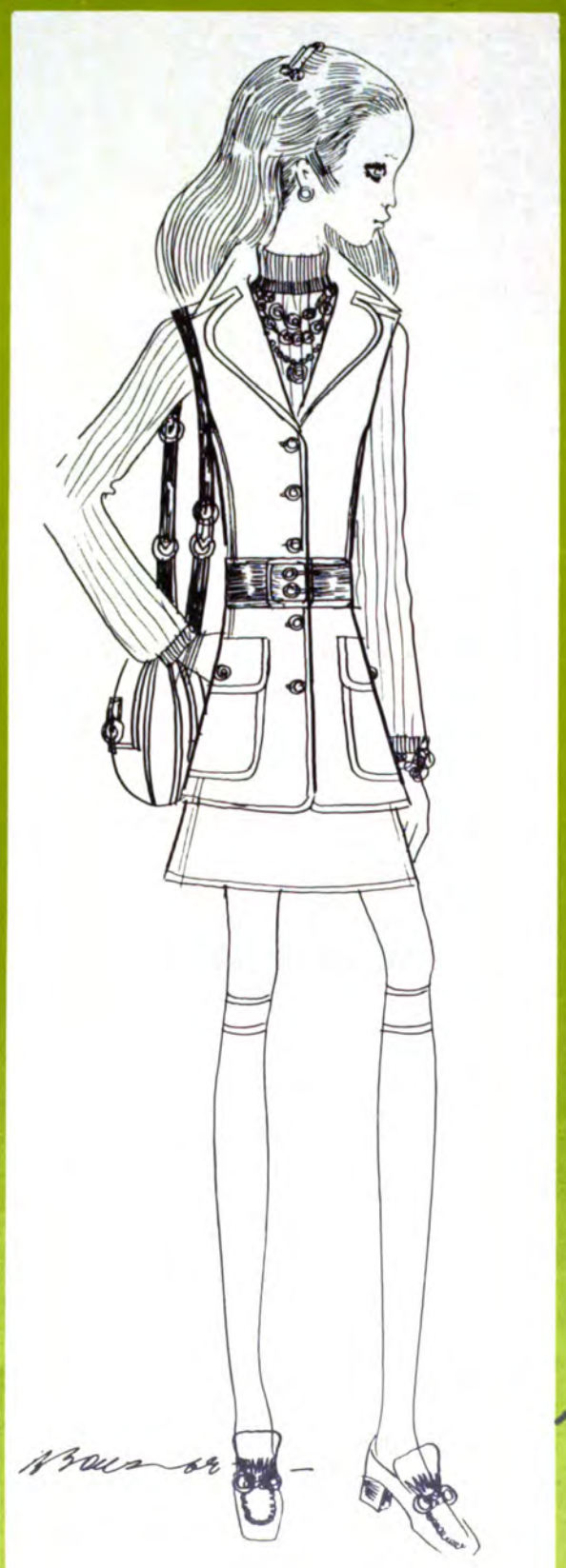
TEENAGERS have a place of their own in today's world. They form a kind of clan whose distinguishing feature is not so much age or occupation as similar likes and interests.

What teenagers wear, dance and sing give them the freshness and charm we find so appealing. These may all be superficial attributes, but they are the ones I am concerned with here. Of course young people think of other things besides being well dressed (by their standards) and having a good time. They have their own very decided social and ethical values, but that is not my present theme.

Do Soviet young people dress like their counterparts in other countries? Yes and no. The fact is that fashions not only play jokes on people but they also leave a definite social and national imprint. In this sense our teenagers differ from those in western countries. As I see it, their tastes are better balanced; they are more tolerant of their elders and established tradition.

Another factor is the size of our country and its diversity of nationalities. That makes it harder to set a single style in dress or to sanctify any one pop singer.

But neither is there any get-









ting away from fashion, in clothes or in dances or in songs.

The Smart Set or "Goggles"?

On the streets of Moscow you see girls who dress like boys: velvet costumes in the Manchester style, jeans, bell-bottomed trousers, or skin tights with top boots. You also see young people of both sexes with shoulder length hairdos, a tribute to the Beatles. Our teenage boys, like the girls, go in for bellbottoms.

The girls know the latest fashions from Paris, and in recent years, from London, the city that gave the world Twiggie and the miniskirt. Twiggie styles are very popular with Soviet teenagers. Although they do not go all the way with Twiggie, they think her clothes are attractive, a quality the fashions of the past lacked.

However, the far-out teenager is not typical of our urban or rural scene. Most of our young people are not wild dressers. Some dress better, some dress carelessly, but there are relatively few extremes. The serious young man in spectacles and a conservative jacket can be seen as frequently, perhaps more so, as the dazzler wearing the latest thing in shirts.

The fashions are a little late coming to the countryside. Although our young people who



This is how prominent designer Vyacheslav Zaitsev sees our teenagers.









This article is about one side of the Soviet teenager, what he likes to wear, sing, dance. There is, of course, a more serious side: what he thinks and dreams. But that is another article.

live in the country, especially near the bigger cities, dress much like their urban counterparts, they sometimes lack the urban polish.

There is also local taste. For example, in Georgia the young people like to be up-to-the-minute, but their taste is sometimes just a bit too loud. The Baltic republics prefer the more severe styles. The girls in our Eastern republics are chary of miniskirts, while those in Leningrad or Riga have no prejudices of the kind whatever. To sum it up, teenagers' tastes are rarely



consistent, but there does seem to be a tendency toward some kind of golden mean. When I once asked Vyacheslav Zaitsev, a leading Moscow designer, what our teenagers wear, he had no off-the-cuff answer.

"A tough question," he said. "Today's teenagers hover between mini and maxi lines. I'd say that a girl of 18 should wear a moderate mini, shoes with low and sensible heels, quiet-toned stockings, a minimum of make-up, and a free and simple hairdo. A boy can permit himself a little more leeway in his dress." By the way, Zaitsev's teenager silhouettes are on pages 60 and 61.

The Shake or the Quadrille?

The young people who frequent our evening cafés affect a great variety of hair styles. You see beards and curls next to faultless and formal heads, long hair worn shoulder length next to meticulous braids. Tastes here are highly individual.

Our evening cafés serve as teenage clubs. The food is cheap, and the drinks are almost all soft, with the possible exception of dry wines and various kinds of punch. Here one can listen to a report by a young scientist, new verses by an "avant-garde" poet, or a passionate if not too coherent declaration by a young speaker from the floor.

Cafés are not the only places where teenagers meet. There are youth clubs which hold concerts, dances and lectures. But the cafés are most popular because of their intimate and informal atmosphere. Moreover, that is where the city's finest jazz musicians like to play.

The beat groups have given our teenagers of the sixties their rhythms. Rock-and-roll, which enthralled the younger generation of 10 years ago thanks to Elvis Presley, is now old hat. The twist holds its own only in the outlying provinces. Other modes have also faded, yielding place to new dance rhythms.

Beat groups made up of young people—students and workers—attract crowds of admirers. Their resounding titles—"The Satellites," "The Siriuses," "The Stargazers," "The Falcons" and a host of similar names—are familiar to almost all young people in Moscow. Other cities have their own groups. In a word, our 19-year-olds all have more or less the same taste in dance and light music.

However, the traditional national dances hold their own. In the Caucasus, for example, young men like the fiery lezghinka, while expert gypsy-style dances may be seen at any evening party in Moscow. At a dance in a provincial school, young people will do a blend of rock-and-roll and the twist, but they will just as happily dance a quadrille at an outdoor village party on a warm summer evening.

American folk singer Pete Seeger, who toured the Soviet Union twice and met a great many of our young people, once said to me: "Songs express the soul of a people. When I hear their singers, I have an idea of what the people in a country unfamiliar to me feel, what they think of, what gives them joy, and what makes them sad."

Soviet teenagers have many hits of their own, popular for several generations of young people. Some of them date back to the Civil War; some are far older, but they are very much alive. Small vocal groups and sometimes vocal and instrumental ensembles include in their repertoires such folk songs as "The Rush Candle" or "All About Us Lie the Steppes."

But the over-all teenage preference is for today's songwriters, some of whom are tremendously popular. Alexandra Pakhmutova has for five years led youth opinion polls. Her melodious romantic songs of distant trails and trailblazers can be heard at practically any gathering of young people. Other popular songwriters are Mikael Tariverdiyev, Andrei Petrov and Sergei Pozhlakov.

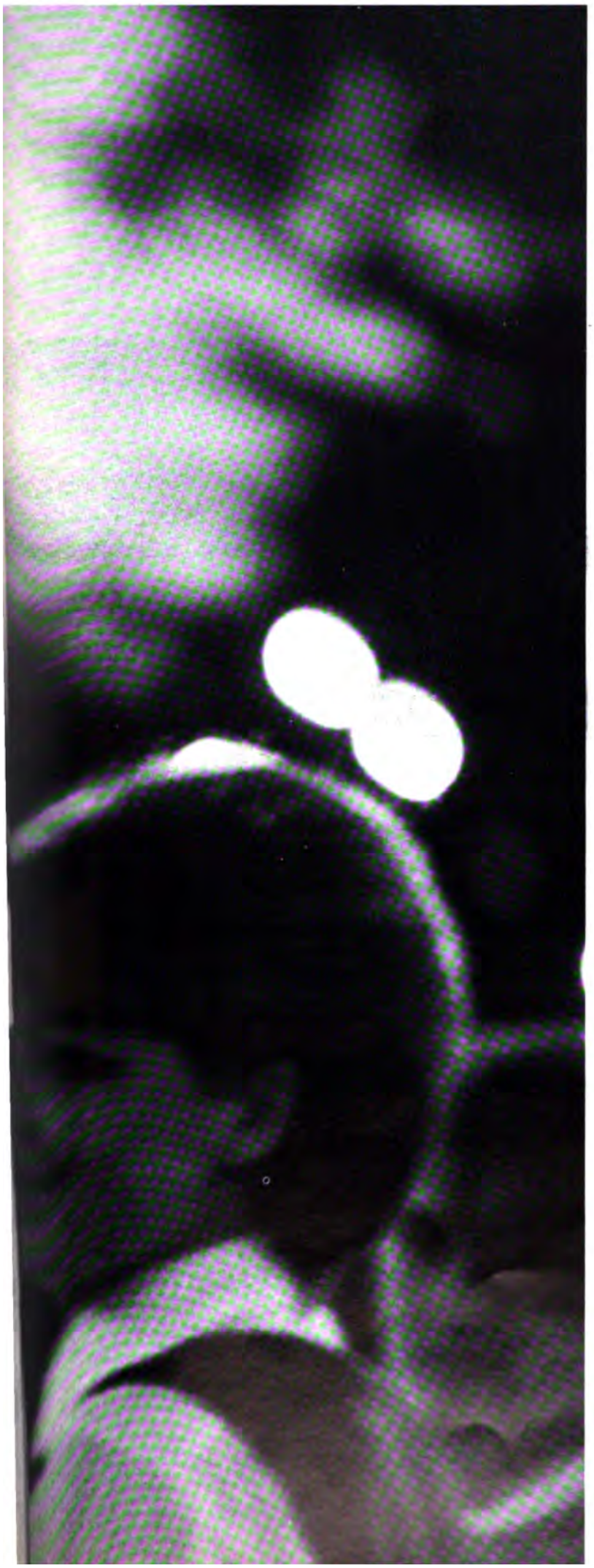
Amateur songwriters—geologists, engineers, newspapermen, teachers by profession—also command sizable audiences. Many of them were influenced by the poet Bulat Okujava, who created a great stir on the variety stage some years ago. His style anticipated the Russian urban romance of today; he em-

phasized the lyrics, which he sang to his own very simple guitar accompaniment. He proved that almost anybody can sing, and that the important thing is not how but what you sing. Our teenagers made that their slogan.

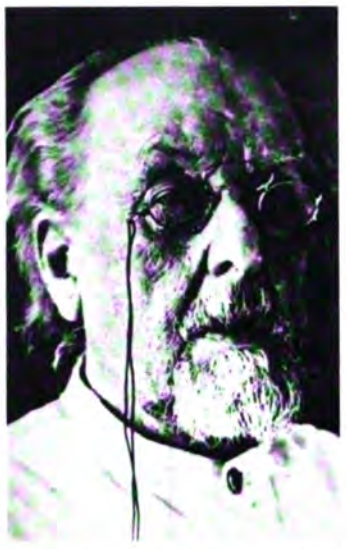
Often you hear groups of young people out on a hike singing a song whose authorship is quite unknown. Among the more popular amateur composers are Leningrad engineers Yevgeni Klyachkin and Yuri Kukin, both with rich imaginations and musical gifts; playwright Alexander Galich, author of witty satirical songs; teacher Yuli Kim, who writes amusing allegorical bal-



nd Vladimir Vysotsky, a actor at the Moscow Ta- Theater.
earn how our teenagers o styles, look at their clothes, listen to them sing, watch them dance. To penetrate their spiritual world, get them arguing a subject close to their hearts.



NEXT ISSUE





Konstantin Tsiolkovsky, the father of rocketry, worked out the principles of space flight at the turn of the century. This provincial schoolteacher predicted, all those decades ago, that man would not remain earthbound forever but would one day travel to other planets. The events leading to the fulfillment of this prophecy are outlined in one of the articles in a special issue on space. "Rocket Engineering" tells about the scientists and inventors who helped solve the problem of designing a vehicle capable of freeing man of the Earth's gravitational pull. Not the least of them was the late Sergei Korolyov, under whose direction the first spaceships were designed and built, making possible first the exploration of outer space, then the very first manned flight.



When Soviet cosmonaut Gherman Titov visited the United States in 1962, he met American spaceman John H. Glenn Jr. At the time both men reported on their experiences to the International Space Science Symposium. A lot of space travel has taken place since then, and there are a lot more spacemen in the world—both American and Soviet. SOVIET LIFE thought its readers would be interested in finding out why these men chose cosmonautics as a career and what their views are on a question many people are asking these days: "How can space benefit people?" So it questioned a group of American and Soviet cosmonauts. Their answers are published in the August issue.

Among the other articles on space is a photo story on the everyday life of the cosmonauts. Besides training for future flights, they tour the country, make trips abroad, give talks to large audiences, study, do research, have hobbies and live near Moscow, in a place they named Stellar Town.

Soviet youngsters are space fans, too. There are even schools of cosmonautics where they study astronomy as well as design and launch rockets. The activity at one of these schools is shown in a photo story.

Where do we go from here? Will mankind find intelligent beings in the Universe? Are we ready for such an encounter? Scientists of the Sternberg Astronomical Institute concerned with the problems of contacts with extraterrestrial civilizations discuss these and many other questions.

How could an issue devoted to space fail to include *la crème de la crème?* The science fiction story by Vladimir Savchenko tells of the collision and interaction of two kinds of intelligent life—one protein, one crystalline.

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SPECIAL ISSUE :

MAN AND OUTER SPACE

AMERICAN AND SOVIET SPACEMEN'S POLL



The recent outstanding flight
of American astronauts around the Moon,
the sure start of the Soviet probes
Venera 5 and Venera 6 toward their distant goal,
and the successful flight
of the spaceships Soyuz 4 and Soyuz 5—
all these are mankind's new and major steps on the road
to conquering the mysterious world of outer space.

LEONID I. BREZHNEV

MAN AND OUTER SPACE

We stand on the threshold of a new leap forward in human civilization. Man is embarking upon the era of space expeditions. It is time to think about the consequences of this grand achievement.

Why does man want to go up into space? Over the millenniums he was tied to his cradle of Mother Earth. His views of both himself and his place in the world underwent crucial changes; he became aware of the multiplicity of surrounding worlds, but in his practical life he remained geocentric.

The dawn of the space era brought perhaps the greatest psychological revolution since man first attained consciousness and began to create. Never before had he left his dwelling place, the Earth; never before had he seen it from outside as an enticing blue globe. Never before had he made a vehicle which could take him beyond his planet, nor grappled with the problems posed by emergence into space.

Today physics, chemistry, biology and geology, sciences upon which human progress hinges, have placed squarely on the agenda the observation and exploration of the Earth from outside its atmosphere. In space, that unique natural laboratory, we have a void that approaches the absolute vacuum, tremendous pressures and temperatures, a cosmic cold, mighty fields of magnetism and gravitation, and elementary particles with superhigh energies. Even matter "up there" may possibly assume forms that do not fit in with our customary concepts of time and space.

Space presents a challenge to the human intellect. There we must find the answer to that mystery of all mysteries, the origin of the Universe, life and intellect.

What have we already learned with the aid of rockets, sputniks and spaceships?

First that space can be an arena of human activity.

We have made a thorough study of the physics of circumterrestrial space and of the conditions for passage of radio waves through the upper layers of the Earth's atmosphere. We have discovered an extended, extremely rarefied, gaseous envelope called the geocorona. We have photographed the surface of the Moon, including the side hidden from the Earth.

We are using space for weather forecast information, for radiotelephone and television communication, and to chart new maps. It is now possible to use sputniks for navigation of planes and ships.

Many of the materials and instruments devised specially for sputniks and space probes have found extensive application down here on Earth. Cosmonautics has stimulated the development of many industries: jet engineering, microelectronics, telemechanics, chemicals.

Space biology and medicine have yielded much that is new for "ordinary" medicine, especially in the treatment of heart and blood diseases, in psychiatry and dietetics.

Man's emergence into space has sharpened ethical problems as well. The exploration and development of other, even unpopulated, planets and of celestial bodies such as the Moon imply a high degree of ethical maturity. If we intrude into extraterrestrial worlds without taking all conceivable precautions, the results could be disastrous: We might change the course of evolution of unknown forms of life, or bring back to the Earth organisms hazardous to terrestrial flora and fauna. As for meeting representatives of other civilizations there, this, if it ever comes to pass, will demand extreme caution and tact elevated to cosmic heights.

Besides the ethical aspect, space exploration inevitably entails the drafting of legal guidelines, of a "cosmic code" that would rule out the use of such superlative achievements in a way harmful to mankind.

The practical benefits to be derived are not the only incentive for cosmic exploration. From time immemorial we have dreamed of ascending into space and visiting other celestial bodies. Man has always been motivated by an unselfish thirst for knowledge, an admirable inquisitiveness which has led to extraordinary discoveries.

One cannot foretell, even roughly, how man's emergence into space will affect his thinking and action. The possibilities are as limitless as human valor. Both Soviet and American space explorers have proved that more than once.

Space presents a worthy arena of activity and cooperation for our countries in the interests of all mankind, and of our common home, the Earth.

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SPACE EXPLORERS' POLL

SOVIET LIFE asked the space explorers in the American and Soviet space programs about their profession and goals. Here are our questions and their answers.

1. Why did you become a cosmonaut? *

2. How can space benefit people?

3. What is most dear to you on Earth?

4. What is your idea of the navigator's role in future space flights?



Alexei S. Yeliseyev
was born on July 13, 1934, in Zhizdra, Russian Federation. He is a civilian.

1. It was quite long ago that I began thinking in earnest about travel in space. I was a student at the Bauman Higher Technical School in Moscow when the first manned space flight took place. I took it as a personal challenge and decided to specialize in automation. "I shall be a cosmonaut," I told myself.

2. I think there can be no simple answer to this question. You see, one cannot apply a utilitarian standard in choosing the best direction for space research. Is it more important now to send cosmonauts to the Moon or to fly round Venus and get back to Earth?

It's possible that one or the other is more important from the propaganda angle. But for scientists these are each steps—though necessary ones—in mankind's big venture into space.

Already there are tangible achievements. The biggest of them is space exploration's tremendous impetus to all branches of science, all fields of knowledge.

3. As to my job, I work together with like-minded friends, designers and scientists, and that's the most important thing. What I fear most is having people think that I try to be unique. Nothing human is alien to me, and the awareness that outside my laboratory there is life with its sun, sky and rivers, and the home where I am awaited by someone I love, makes my work more rewarding.

4. Just like trains, ships or planes, spaceships should stick to a schedule. Besides, it is necessary to have alternate routes for passenger safety. The spaceship navigator should meet these demands by calculating the course and speed required by space flight conditions. But his work should be a hundred times more precise because of cosmic speeds.



James A. Lovell Jr.
was born March 25, 1928, in Cleveland, Ohio. He is a captain in the U.S. Navy.

1. Becoming an astronaut was a continuation of the type of work I was doing as a test pilot. I enjoy exploring the unknown and advancing the technology of space science.

2. Space benefits people with improvements in manufacturing techniques. It is a stimulus to education, a discovery of our own beginning.

3. Home and country.

4. Navigators will always be needed on space flights, especially those that travel out of ground tracking range. Then it is up to the onboard navigation system to bring the spacecraft to its destination and back home.

*A cosmonaut is a spaceman in the Soviet Union. The word has the same meaning as the American astronaut.





SYSTEMS ENGINEERS

1 Why did you become a cosmonaut?

2. How can space benefit people?

3. What is most dear to you on Earth?

4. What is the importance of docking, and what are the comparative merits of automatic and manual docking?

Vladimir A. Shatalov
born December 8, 1927, in Petropavlovsk, Kazakhstan, is an Air Force colonel.



1. Since the day I became a flier, I was eager to test fly new machines. Spaceships were, of course, the most modern and the most complicated flying vehicles. But I did not even dream of becoming a cosmonaut—there were hundreds of aspirants and besides, I was no longer as young as that, I thought. Then I learned about the cosmonaut selection commission's requirements for prospective spacemen. What struck me was that I, with my age, height, education and work experience, fitted in perfectly well! That was when I lost all peace of mind and became a pain in my chief's neck. They heaved a sigh of relief only when I passed all the tests at the cosmonauts' school.

2. Space flights are only the first steps in the conquest of space. Foreseeing what space exploration will mean to people is as hard as predicting the future. There is one point I'd like to make, however: At the dawn of aeronautics many people thought that flying experiments were of interest only to a narrow circle of sportsmen. But now we are all aware of the great role aviation plays in the development of mankind. I think the same is true of space exploration.

3. Now that I've been in space, I can tell you that there is nothing more valuable than human bonds, mutual support and comradeship. The voice of the friend talking to you from Earth over the radio, the reunion with friends who climb into your cabin after a walk in space, a letter from your family delivered to you right in the spaceship.

4. Docking is so far the only—and quite a good—method of assembling big research laboratories and stations in a round-the-Earth orbit. This method makes it possible to carry out assembly work with whole teams of cosmonauts, to replace crews in orbital stations, and to rescue spaceships and their crews in emergencies. The type of docking chosen depends on the problems to be solved at a given moment. If an emergency arises on a spaceship, and its crew needs a new craft to get back to Earth, automatic docking is preferable. Manual docking is better for relieving an orbital station crew.

Neil A. Armstrong
was born on August 5, 1930, in Wapakoneta, Ohio. Armstrong is a civilian.

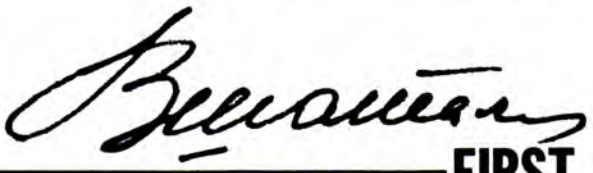


1. As a former aircraft test pilot, I felt that the opportunity to fly in space challenged the best I could offer in a profession that is dedicated to exploring the unknown and searching for truth.

2. Space is the ocean in which our planet is forever swimming; understanding that environment will help to understand the future course not only of the Earth, but also of its people.

3. The opportunity to attempt to contribute something of lasting benefit to mankind.

4. Space travel is now an established means of transportation and will remain so forever. The transfer of people and goods from one craft to another will become increasingly useful as more spacecraft are aloft, and the docking maneuver will remain a vital part of that activity. Manual docking has the advantage of simplicity and reliability. Automatic docking can be done remotely with unmanned craft and could possibly be more accurately controlled. Both methods can be expected to be used for various purposes in the future.





FIRST MANUAL DOCKING

1 Why did you become a cosmonaut?
2. How can space benefit people?
3. What is most dear to you on Earth?
4. What were your first impressions of space, and what difficulties did you encounter in space flight?



Yevgeni V. Khrunov,
born on September 10, 1933, in Prudy, Russian SFSR, is an Air Force colonel.

1. It is much easier for me to say *how* I became a cosmonaut. I was a tractor driver. Born in a village, I was very fond of farm work and machinery. In those years I wanted to become a fighter pilot, but I was too short and thin, and my friends said I'd never make it. You're the shortest of us, they gibed, and even sawing is too much for you. Nevertheless, I went to a flying school and later served in the Air Force as a fighter pilot. I was eager to fly new machines, and that is probably why I was among the first to get enrolled in the cosmonauts' unit. There might have been an element of chance in that, but anyway I'm glad I've become a cosmonaut.

2. Space exploration is necessary, first, so we can get to know the nature of the Earth. Besides, we're using it in meteorology, television and radio communication.

The conquest of space is a tremendous undertaking, and many nations should pool their efforts in this field.

3. As I observed the Earth from outer space, I saw the world as a single whole, and I thought about the boundless possibilities of the human mind which is mastering the Universe.

Our planet is infinitely beautiful, and I hold its beauty very dear. I want this beauty to blossom eternally; I want the peoples to preserve peace. This is the most important thing to me.

4. The tremendous brightness of light in space came as a surprise to me. Alexei Leonov had told me that the Sun was very bright there, but when I went out for a "walk" and looked at the ship, I forgot that I was looking through a dense filter—the dark ship was just dazzling. When I lifted the filter (strictly speaking, this is not allowed, but the temptation was too great) the Sun shone so brightly on my right that it was just impossible to look in that direction.

It is not easy to work in space, of course.

But psychologically it was easier for us to take a space walk because our Alexei Leonov and American astronauts after him had already done it. Also, their experience provided useful information on the physical efforts involved in working outside the ship.



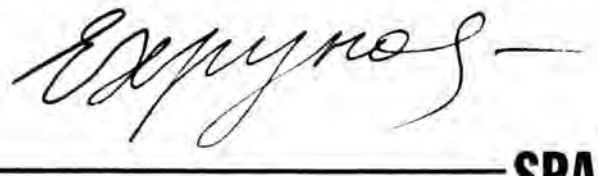
Eugene A. Cernan
was born on March 14, 1934, in Chicago, Illinois. He is a U.S. Navy commander.

1. Throughout history there have been those who dared to venture into the unknown in the exploration of new frontiers and in the advancement of science and technology; such explorers have thus helped to make the world a better place for those who came after them. This is an exciting idea to me—to be a part of a program that is contributing to the expansion of man's knowledge in such a way that the world will be a better place in which to live, thus providing a challenge to our posterity to achieve even greater goals.

2. Orbiting spacecraft offer a two-way window for scientific observations—the Earth below and the stars above; benefits will be derived from both directions. In one direction there is economic benefit to be gained from more efficient use of the Earth's natural resources—its air, land, and water. A vantage point in space will aid scientists in their quest to understand and obtain more control of the processes at work on our planet. The other observational direction lies outward—across the Universe. We can study the Sun and other stars of the Universe without interference from the Earth's turbulent atmosphere. A list of objectives in astronomy has been made, but the list is by no means complete, for the space program is still in its infancy, and fascinating new puzzles are continually being discovered. Beyond the orbits of the Earth, the exploration of outer space offers even more challenges and helps us to appreciate the marvel of our world in the vastness of space and to further realize the need for cooperation among nations.

3. My family.

4. There is no doubt about the fact that being in space is pretty fantastic. The fact that I had left the bounds of the spacecraft some 180 miles above the surface of the Earth and the beautiful sight are things I will never forget. The greatest difficulty I encountered working outside the spacecraft was the positioning problem when my feet continued to float out of the foot restraints and I did not have the freedom of both hands for any length of time and I had to work continually against the pressure suit.





SPACE WALKERS

1 Why did you become a cosmonaut?

2. How can space benefit people?

3. What is most dear to you on Earth?

4. What role does the spaceship commander play in the copilot's walk in space?

Pavel I. Belyayev,
born on June 26, 1925, in Chelishchevo, Russian SFSR, is an Air Force colonel.





James A. McDivitt,
born on June 10, 1929, in Chicago, Illinois, is a colonel in the U.S. Air Force.

1. This happened in a very simple way. When I finished secondary school, I went to work as a lathe operator. But what I really wanted to do was fly. I became a flier in the spring of 1945. Later, I served as a naval aviator in the Pacific. In 1956 I entered the Air Force Academy, where I became very interested in new machines. When, after the academy, I was asked whether I wanted to join the cosmonauts' unit, I was enthusiastic. When you blaze new trails and are among the first to travel in space, life is certainly worth living.

2. We Soviet cosmonauts highly revere Konstantin Tsiolkovsky. Tsiolkovsky showed earthlings the road to other worlds. I believe that his ideas of using solar energy are feasible. Each year we get fresh evidence of what space means to people. But the future significance of the cosmos remains to be unfolded. When Rutherford bombarded the atomic nucleus, he could hardly predict that by the middle of this century atomic icebreakers and atomic power stations would be built.

3. Everything living. Life.

4. The commander's role boils down to helping the cosmonaut who is about to take a walk in space into his space suit; making sure the suit is airtight and the communication and life support systems are working; controlling the pressure in the compartment from which the cosmonaut makes his exit; watching instrument readings on the cosmonaut's condition; watching the operation of all the systems and being ready to help his comrade back to the ship at any moment.



1. It was the next logical step in my career. I was trained as a jet pilot and have been flying as jet pilot for some time. I attended the U.S. Air Force experimental test pilot school and then worked as an experimental test pilot. Later I attended the USAF aerospace research school. I then went back to work as an experimental test pilot testing high-performance airplanes, when the opportunity to be an astronaut presented itself. I felt it would be the next logical step in my career.

2. Space can benefit people in many ways: *First,* in the U.S. it provides a national goal and a chance for everyone to work together to achieve this goal. *Second,* it increases man's knowledge of deep space. *Third,* it increases man's knowledge of the Earth on which we live, through the scientific investigation of Earth resources. *Fourth,* communications satellites provide instant communication between any points on Earth. *Fifth,* weather satellites can help forecast scientific weather for any place on Earth. There are many specific applications of space flight, too numerous to be listed here.

3. My family is the dearest thing to me on Earth.

4. When any other astronaut is outside the spacecraft, the commander has all of his normal responsibilities plus coordination of the activities of the ground and the other astronauts. He must also moderate the operation of the spacecraft systems and maintain the spacecraft in the proper attitude. He must also evaluate the progress of the extravehicular activity and make the decision to either continue, expand or terminate the activity in progress.



SPACE WALK COMMANDERS

1 Why did you become a cosmonaut?

2. How can space benefit people?

3. What is most dear to you on Earth?

4. How much more comfortable are today's spaceships than their predecessors?



Gherman S. Titov,
born September 11, 1935, in Verkhneye Zhilino, RSFSR, is an Air Force colonel.

1. There is no brief answer to this question. But one thing is certain—it was not because (as one journalist wrote) I have gazed at the starry sky since childhood. Nine years ago Soviet scientists decided that everything was ready for launching a manned spacecraft, except that there were no cosmonauts yet. I was among those fliers who had some experience with jet fighters and were ready to try space flight—this novel and alluring venture.

2. I am sure that in the long run the conquest of space will give "mountains of bread and a sea of might," as Konstantin Tsiolkovsky, the father of modern cosmonautics, put it.

3. I've read the science-fiction novel *My Green Earth* by American writer Frederick Brown. It tells of astronaut McGary, who got to a planet where there are neither days, nights, seasons, winds nor storms. It was a planet of the red sun. He dreamed of getting back to Earth and seeing its green palms, green valleys and green steppes again. Just like him, what I value most about our planet is the Earth itself, the Earth where I was born.

4. Just as modern airlines are when compared with the early planes.



Gordon L. Cooper Jr.,
born March 6, 1927, in Shawnee, Oklahoma, is a colonel in the U.S. Air Force.

1. The opportunity of playing a part in exploring the "last frontier," the challenge of the unknown and the promise of new scientific discoveries were some of my reasons for wanting to become an astronaut.

2. There are many ways in which the exploration of space can benefit people. One is the increase of our knowledge of the Universe. Experience shows that though scientists may investigate the unknown out of curiosity, with no immediate engineering or economic goal in sight, the increased knowledge they derive results in unpredictable economic benefits.

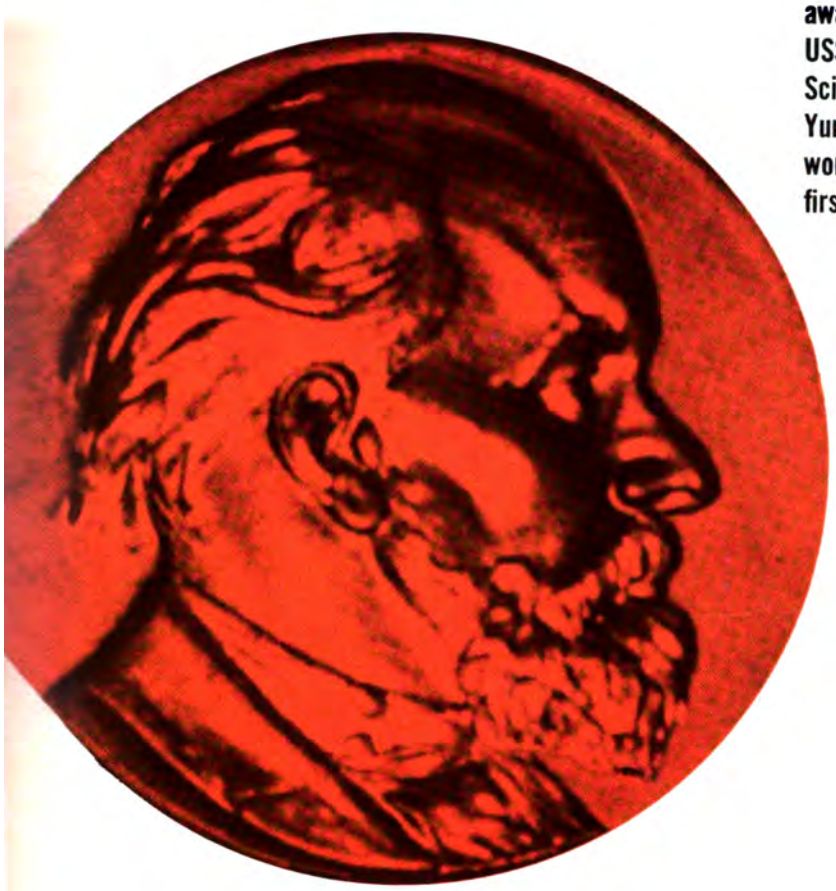
3. My family.

4. The spacecraft necessarily evolves as man's ventures into space become more ambitious both in purpose and length. The three-man Apollo spacecraft provides three times as much space per man as the one-man Mercury spacecraft. Sufficient room within the spacecraft for the astronauts to leave their couches and move around, the ability to remove the space suit, the addition of devices for exercise to keep muscles in tone, and a better variety of space food are some of the many ways in which life within the spacecraft has become more comfortable.





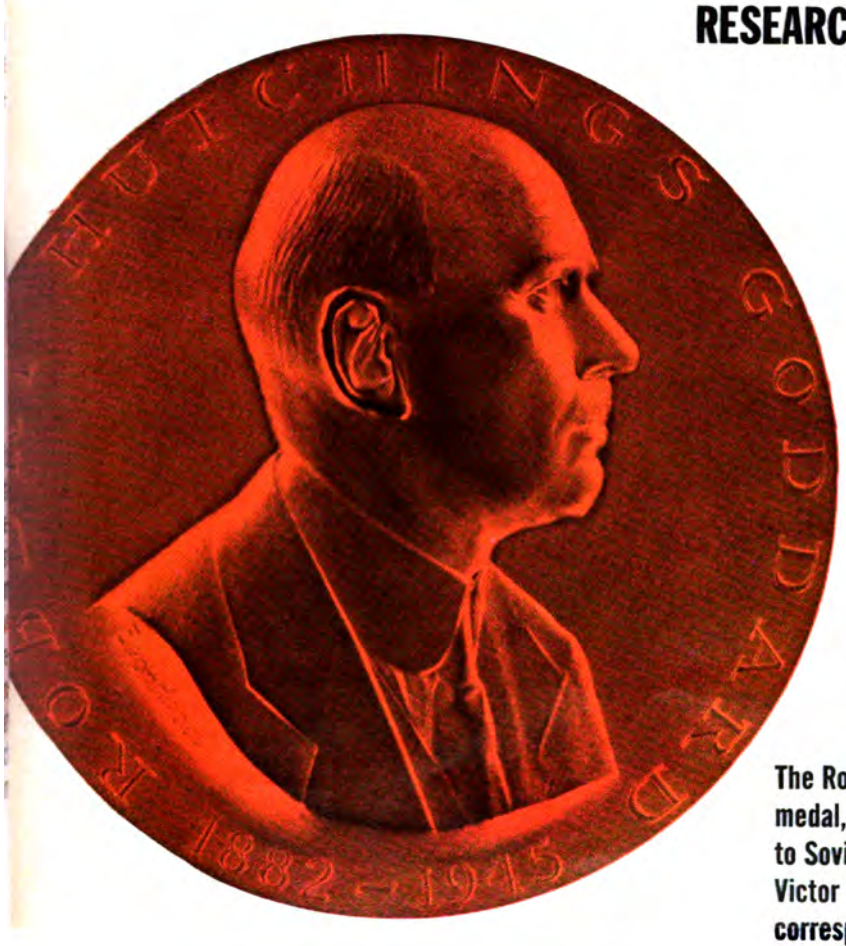
FIRST-GENERATION COSMONAUTS

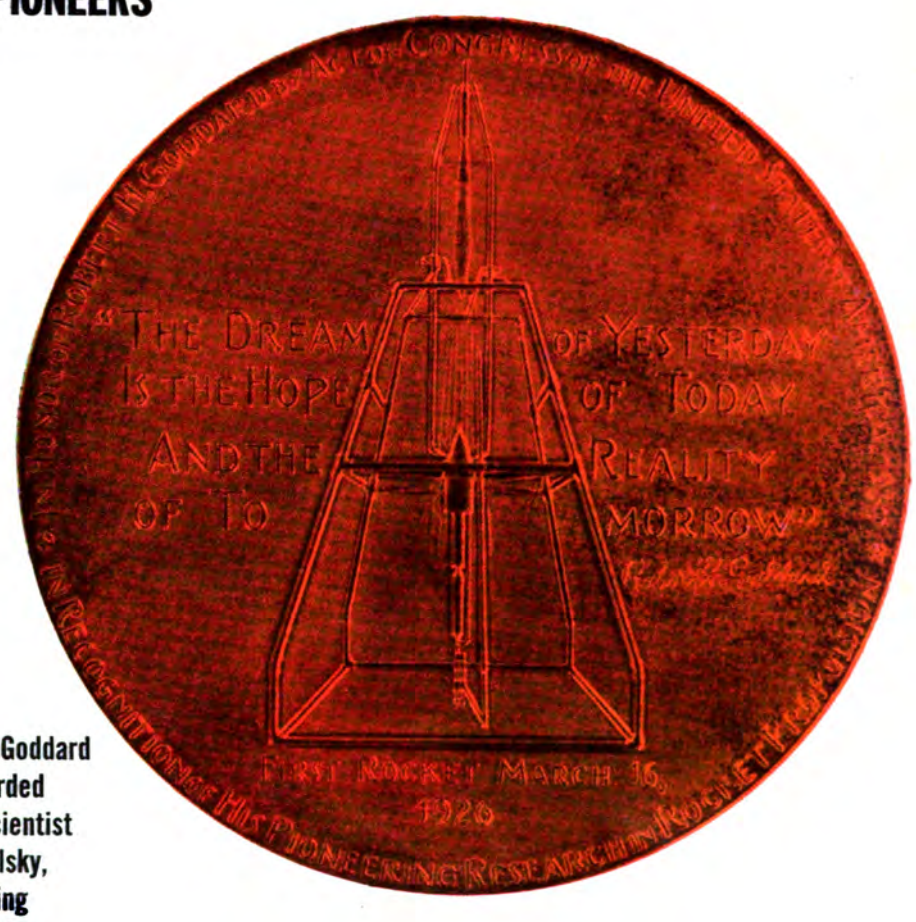




The Konstantin Tsiolkovsky medal, awarded by the USSR Academy of Sciences to Yuri Gagarin, the world's first cosmonaut.

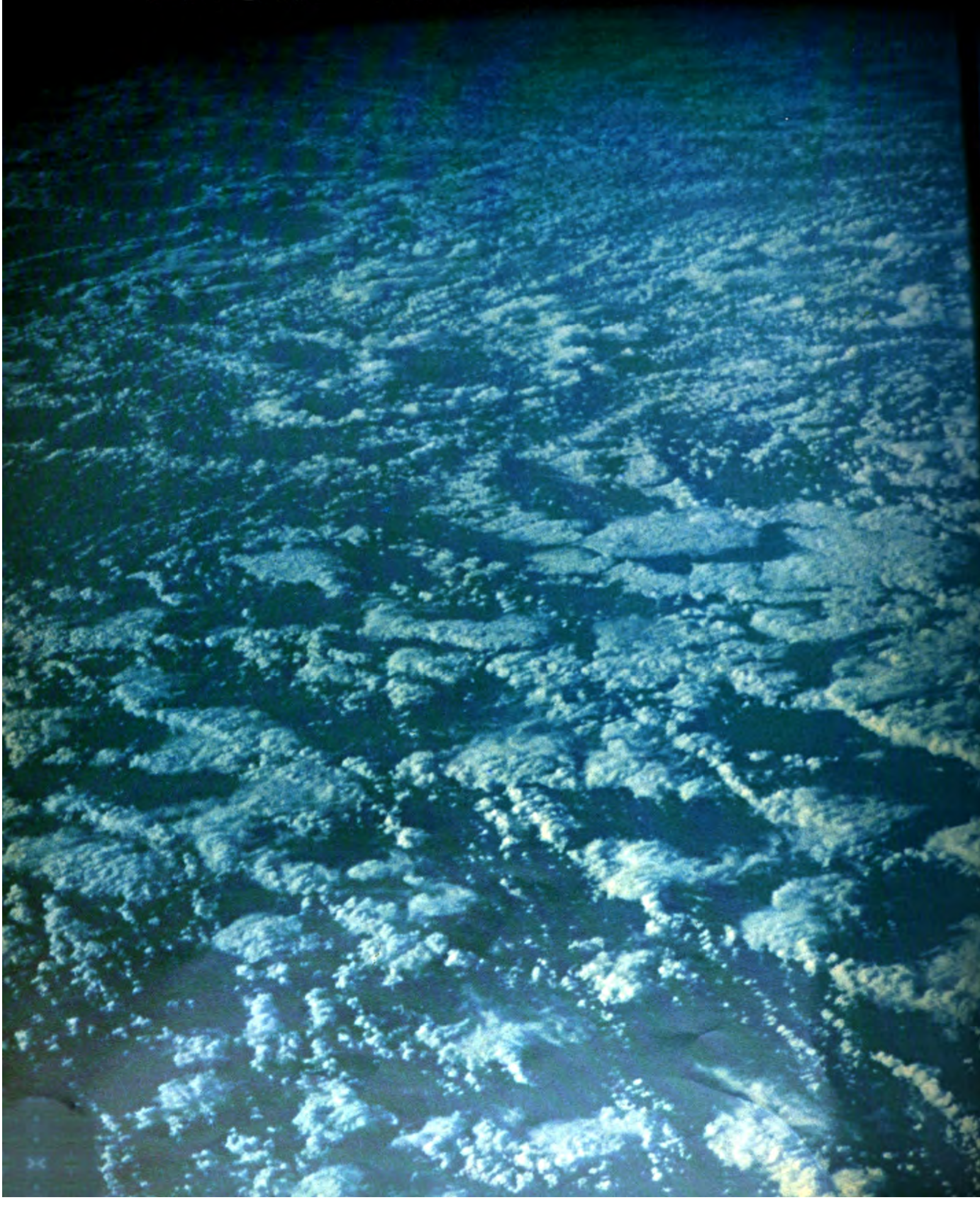
IN HONOR OF OUTER SPACE DREAMERS AND RESEARCH PIONEERS

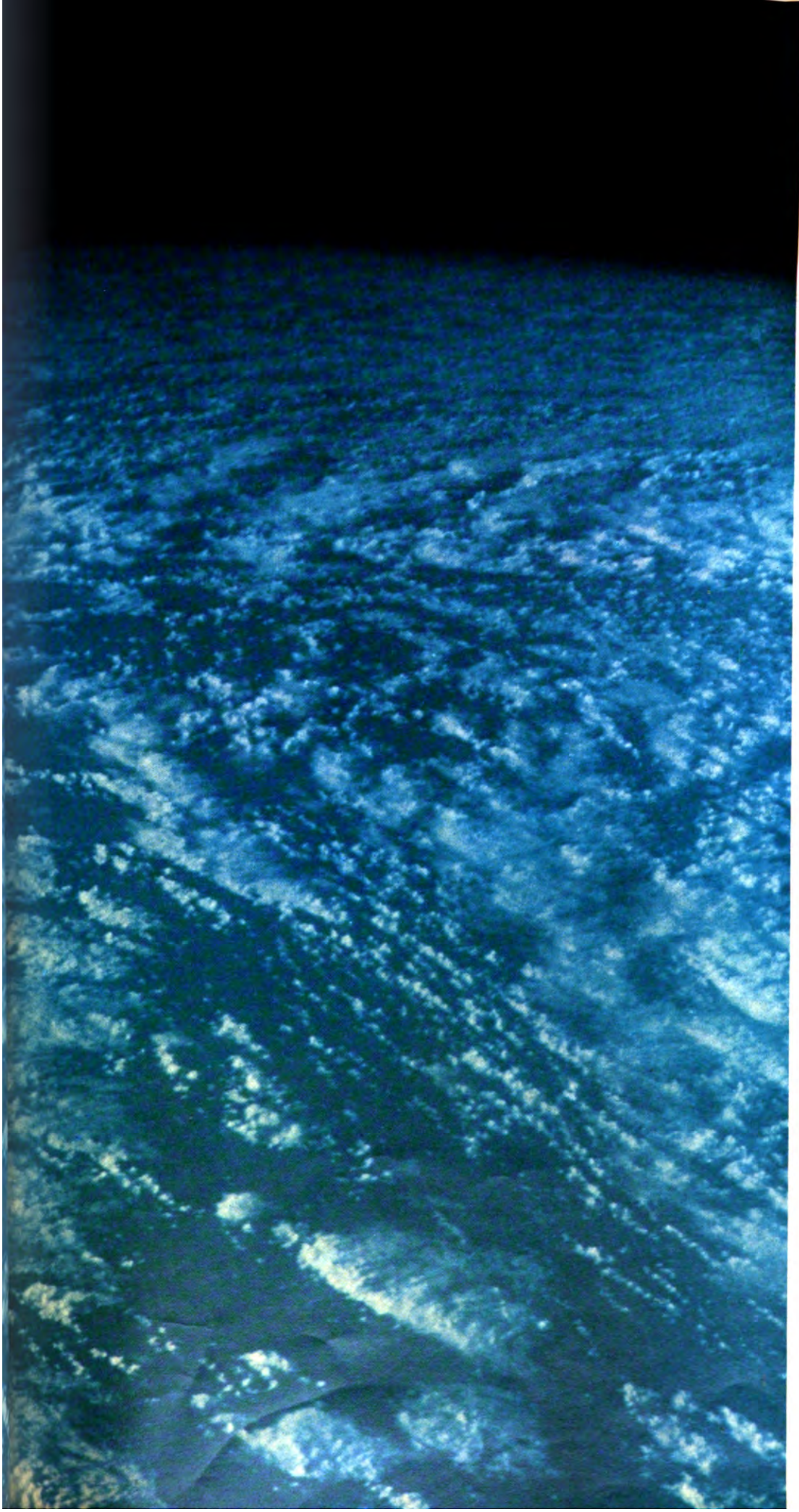




The Robert Goddard medal, awarded to Soviet scientist Victor Sokolsky, corresponding member of the International Academy of Astronautics, author of Solid Fuel Rockets in Russia (English edition published in 1967).

THE EARTH FROM OUTER SPACE





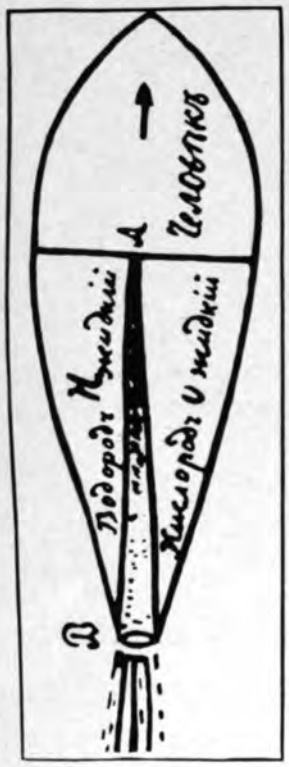
The real, heretofore unknown, face of Earth . . .

"Only now are we opening the true foundation of our Earth, a foundation of rock, sand and salt, on which life breaks through here and there, like moss amidst ruins, and blossoms.

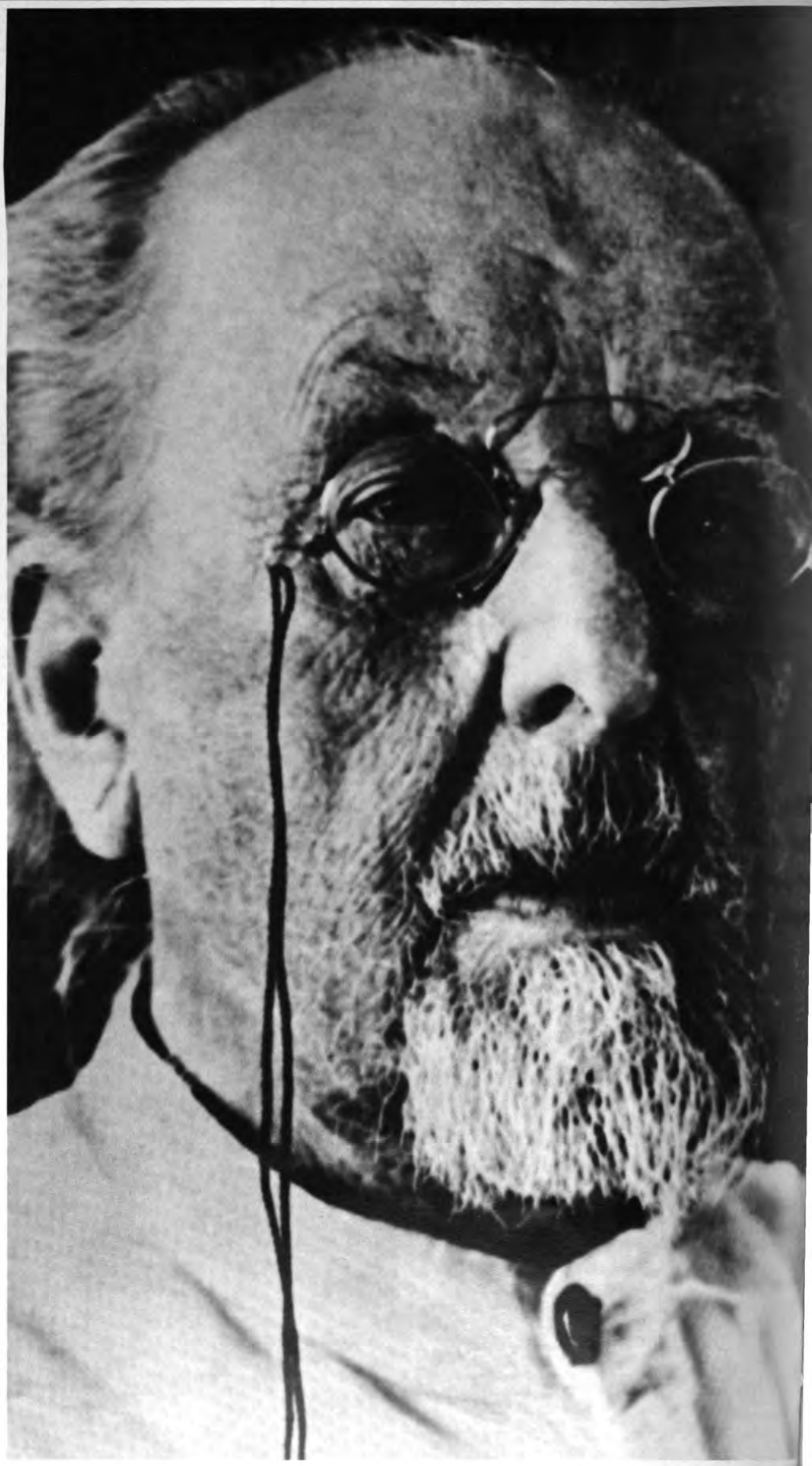
"We become physicists and biologists, and examine the shoots of civilization. They adorn valleys and in some places miraculously bloom, as though luxuriant gardens in a beneficial climate. We peer through the porthole, like a scientist through his microscope, and appraise man by his place in the Universe. We read our history over once more."

Antoine de Saint Exupéry

Tsiolkovsky's sketch of a space rocket, 1903. He was the first man to propose building a rocket engine that worked on liquid propellants.

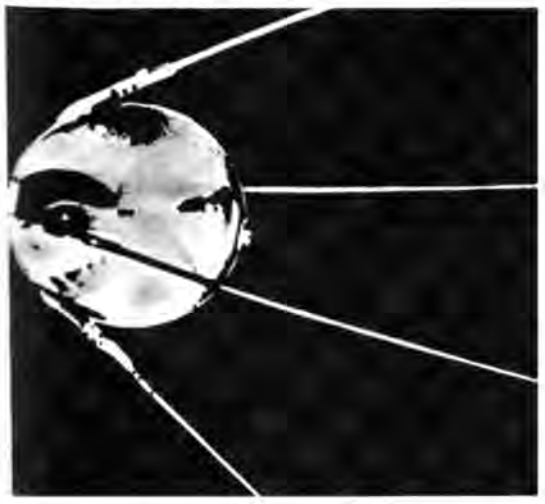


The propellants, liquid hydrogen and liquid oxygen, were to be stored in the rear section; the passenger was to be up front.



Konstantin Tsiolkovsky (1857-1935) laid the foundations for modern astronautics and rocketry.

Sputnik I, the world's first artificial Earth satellite, was successfully launched on October 4, 1957.



THESE WORDS of Konstantin Tsiolkovsky's do not apply only to his work. They speak for the many outstanding Russian scientists and inventors who had gone much beyond the stage of speculating on the possibility of space flight with rockets. Their work won no recognition in czarist Russia.

In 1881 the inventor Nikolai Kibalchich was condemned for making the bomb that killed Czar Alexander II. In his prison cell and practically on the eve of his execution, Kibalchich drafted the first project for a rocket engine. This earliest project grappled with such important problems as the design of a powder rocket engine, the control of a rocket vehicle by varying the inclination angle of the engine, and the stabilization of the rocket vehicle in flight. But the project of the gifted inventor was buried in the archives of the czarist secret police and saw the light of day only after the October Revolution.

Practically no attention was paid to the work of Alexander Fyodorov, another Russian inventor. In 1896 he published a small book, *New Principle in Aeronautics Which Excludes the Atmosphere as a Medium of Support*, in which he suggested that the principle for the flight of birds and rockets was the same—not pushing against air but rejecting its mass. Fyodorov proposed a principle of direct reaction for flight in space devoid of air.

PRELUDE TO THE SPACE AGE

ROCKET ENGINEERING

ll my life I hoped that my work would push mankind ahead just a little. Before ıe Revolution my dream could not come true. It was the October Revolution that rought recognition to a self-taught man, it was Soviet power and the party that elped me do what I did.

KONSTANTIN TSIOLKOVSKY



Only three and a half years later, Yuri Gagarin became the first man to travel into space.

This book did for Tsiolkovsky, as he himself admitted, what the falling apple did for Newton. The application of the principle it suggested for cosmic flight had long interested him. Tsiolkovsky's article "Free Space"—the manuscript is dated March 29, 1883—contained a drawing of a rocket spaceship. The idea was developed and theoretically substantiated in his paper "Investigation of Universal Space by Means of Rocket Devices," published in 1903.

Reading this work today, one is struck by Tsiolkovsky's great talent, his daring and intuition. He was the first to expound the theory of rocket flight and to substantiate the possibility of using rockets for interplanetary flight. Advancing the hypothesis of the constant velocity of ejected reaction particles, he worked out and thoroughly investigated the equation for rocket propulsion. With it he established what we now call the Tsiolkovsky formula: the mathematical relationships between rocket velocity and the velocity of ejection of the jet stream and between rocket mass and fuel mass.

Besides developing theoretical principles, Tsiolkovsky first suggested a design for a liquid fuel rocket engine and a space rocket, considered the use of liquid fuels and oxidizers, and projected the idea of controlling a rocket with gas vanes and cooling the walls of the engine's combustion chamber with fuel components.

TEN DAYS BEFORE EXECUTION

HE DREAMED of freeing man from social oppression and the eternal grip of the Earth. He was a revolutionary in both politics and science. Nikolai Kibalchich was 27 years old when he was sentenced to die on the scaffold.

They say that a man's life is the sum of his extraordinary deeds. Kibalchich himself believed that what he did he had to do, that what happened was bound to happen. A student at the Railway Engineering Institute and, later, at the Medico-Surgical Academy, he unhesitatingly joined the revolutionary movement, linking his fate with the Narodniks and their Narodnaya Volya (People's Will) Party.

His speech in court was like a well-reasoned report to a scientific body. Calmly and logically he outlined the tasks of the Narodnaya Volya and the reasons that forced it to terrorism. And, in the same calm way, he described his part in the attempt on the czar's life in 1879, how his mine sent the czar's train plunging down an embankment. The czar was not on the train, but a bomb thrown by Ignati Grinevitsky on March 1, 1881, did not miss Alexander II. If the government had made life easier for the people, "all of us would not now be charged with the assassination of the czar. . . . I would have applied the ingenuity which I used in making projectiles to handicraft, the improvement of land cultivation methods and agricultural implements," he told the court.

The revolutionary struggle demanded action. It left very little time for scientific exploration. The only "free" time he had was that fortnight in the death cell before his execution, a fortnight in which to complete the project conceived long ago, of a controlled airship, a fortnight in which to draw up his scientific-technical will. That fortnight was sufficient to make Nikolai Kibalchich immortal.

Aeronautics was in its embryonic stage. We had learned how to ascend in balloons but were helpless in the air. What Kibalchich dreamed of was a controlled heavier-than-air machine. He was in a rush to think everything out, proceeded feverishly with his calculations. It was the idea he wanted to get on paper: The experimenters and technicians would do the rest.

"What amazed me, above all, when I saw Kibalchich," his lawyer said in court, "was that he occupied himself with something altogether different, something totally unrelated to the trial. He was engrossed in research on an aeronautic projectile of some kind; he desperately wanted the chance to write down his mathematical investigation for this invention."

What force would lift this machine? Steam? Electricity? No! Powder! Explosives! If anyone knew their power, he did. But how to apply the energy of





ROCKET ENGINEERING



A rocket that Konstantin Tsiolkovsky suggested in 1911 with an engine powered by nuclear fuel.

1919

Tsiolkovsky was elected to the Academy of Sciences, formal acknowledgement of his leadership in the field of rocket research.

1921

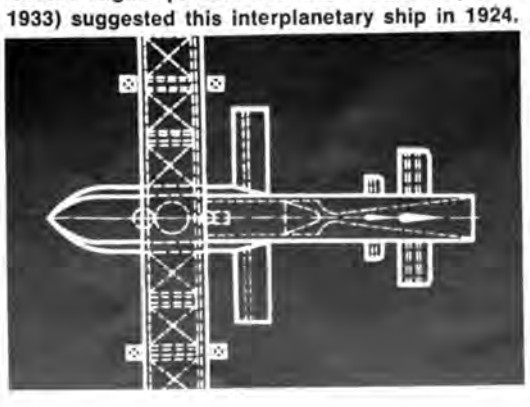
Chemical engineer Nikolai Tikhomirov and pyrotechnical engineer Vladimir Artemyev set up the country's first laboratory for the development of smokeless powder rockets. In 1927 the laboratory was moved from Moscow to Leningrad. It was later renamed the Gasodynamics Laboratory.

1924

Soviet rocket engineering pioneer Friedrich Tsander developed a project for an interplanetary ship consisting of a large and a small airplane whose fuselages made up a section of the rocket body. The wings, fins, motors and screws of the large plane



Rocket engine pioneer Friedrich Tsander (1887-1933) suggested this interplanetary ship in 1924.



the gases resulting from the ignition of explosives? It was possible only if the tremendous energy did not accumulate all at once, but over a lengthy period. Pressed powder in missiles functioned like that. Yes, a missile and not Jules Verne's cannon would pave the way to outer space! Kibalchich actually arrived at an astroplane, not an airplane. His machine was suited to the interstellar regions.

On March 23, 1881, ten days before his execution, he handed over his "Aeronautic Instrument Project" to his lawyer.

"When I was free," he wrote, "I did not have enough time to work out my project in detail and to prove its feasibility with mathematical calculations. . . . . I am working on this project in prison, only a few days before death. I believe the idea is practical, and this belief supports me in my dreadful situation. If my idea, after a thorough discussion by the scientists, by the experts, is recognized as feasible, I shall be happy to have rendered my country and mankind a great service. I shall calmly meet my death knowing that my idea will not perish with me, but will live with humanity, for which I was ready to sacrifice my life."

The authorities promised that the project would be studied. Kibalchich waited. March 28 passed, then the 29th and 30th. On March 31, he forwarded a petition to the Interior Minister. It was not an appeal for clemency. He asked for a meeting with any of the scientists or, at least, a written evaluation from the experts. This last document in Kibalchich's "dossier" was attached to the project and bore the following bureaucratic inscription: "Submitting this for the consideration of scientists would hardly be timely now and would only evoke irrelevant talk."

Nikolai Kibalchich was executed three days later, and one of the boldest of scientific-technical ideas was buried in the police archives until the victory of the October Socialist Revolution.

A crater on the dark side of the Moon bears his name.



were designed to take off and ascend within the limits of the atmosphere. Then they were to move inside the ship and in a special crucible be melted down to liquid aluminum which was to be used, along with oxygen and hydrogen, as fuel for the rocket engine. The ship was to decelerate on reentry into the atmosphere by "reverse firing" of the rocket engine. Tsander was the first to consider the use of the atmosphere for the takeoff and landing of spaceships and the use of metals as rocket fuel.

1928

In early March Nikolai Tikhomirov and Vladimir Artemyev made several successful launchings of powder rocket projectiles. Gasodynamics Laboratory research was supervised by armaments chief of the Red Army Marshal Mikhail Tukhachevsky. After the death of Tikhomirov the laboratory was headed by such leading scientists as Boris Petropavlovsky and Georgi Langemak, subsequently one of the chief designers and developers of the rocket missiles used on the mobile BM-13 installations and called Katyushas in World War II.

1929

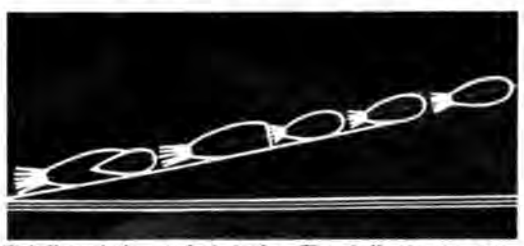
On April 10 the Gasodynamics Laboratory proposed the world's first electric rocket engine of the electrothermic type. As mass carrier, it used solid and liquid conductors exploded by powerful pulses of electric current. In 1929-1930 the laboratory proved, both theoretically and experimentally, that such rockets were serviceable.

On May 15, for the first time in the USSR, an experimental design subsection was set up in the Gasodynamics Laboratory to develop liquid and electric rocket engines.

Tsander completed his calculations and design for the first Soviet OR-1 rocket engine with a thrust of 11 pounds. Essentially an air rocket engine, it incorporated practically all the elements of a modern liquid fuel rocket engine: combustion chamber cooled by one of the components of the propellant, a fuel-feed system and electric ignition. The OR-1 engine was developed on the principle of the blowtorch, which thus became the progenitor of Soviet rocket engines.



A model of the earliest electric rocket engine.



Tsiolkovsky's rocket train. The tail stages provide propulsion for reaching cosmic velocities.

Tsiolkovsky's Cosmic Rocket Trains, *in which he first suggested the use of multistage rockets to reach cosmic velocities, was published. It dealt with multistage rockets of two types: tandem and cluster stages. In the first type propulsion was provided by the tail stages of the "train" which were discarded on burning out; only the head portion of the multistage rocket reached the point of destination. In the second type, the engines of all the stages operated simultaneously until approximately half the fuel was burned up. The fuel left in the outside stages was then pumped into the central stages, and the empty outside stages were discarded.*



Yuri Kondratyuk (1897-1942) made a study of interplanetary flight which was published in 1929.

Yuri Kondratyuk published his Conquest of Interplanetary Space, *which examined such problems as evolving the basic formulas for rocket flight and the calculation of optimal flight trajectories, the establishment of intermediate interplanetary bases within the limits of the solar system, and the use of braking in the dense layers of the atmosphere on return to Earth. Kondratyuk's was the most exhaustive investigation of interplanetary flight made up till then in either the Russian or the foreign literature.*

1930

The Gasodynamics Laboratory developed the first Soviet experimental liquid fuel rocket engine, the ORM-1, in which the fuel used was nitrous tetroxide with toluene and gasoline with liquid oxygen. The ORM-1 engine was built in 1931. When fired on gasoline with liquid oxygen, it developed a thrust of up to 44 pounds.

The OR-1 engine was built in 1930. By 1932 it had been subjected to over 50 test firings.



A photograph of the rocket engine OR-1 designed by Friedrich Tsander in 1929.

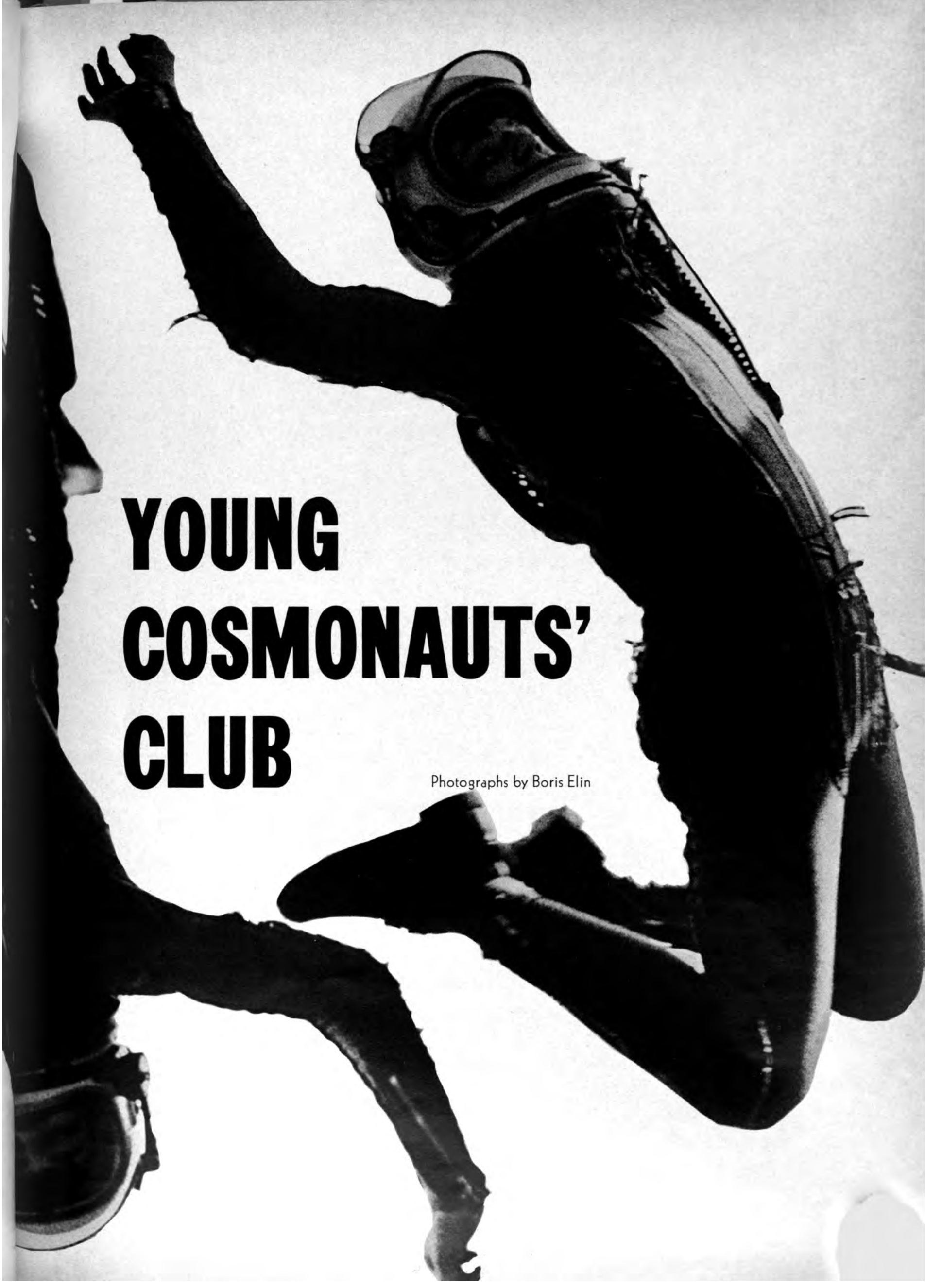
During the year the Gasodynamics Laboratory solved several important problems of rocket engine design: the use of nitric acid, nitrous tetroxide, hydrogen peroxide, perchloric acid and tetranitromethane as oxidizers in liquid rockets; a three-component fuel of beryllium with oxygen and hydrogen; ceramic heat insulation with zirconium oxide and shaped engine nozzles.

1931

In January a rocket engines section, with Friedrich Tsander as chief, was set up in Moscow on a voluntary basis. In the fall of the same year the section was reorganized into MOSGIRD (Moscow Group for Studying Jet Propulsion) which, after the organ-

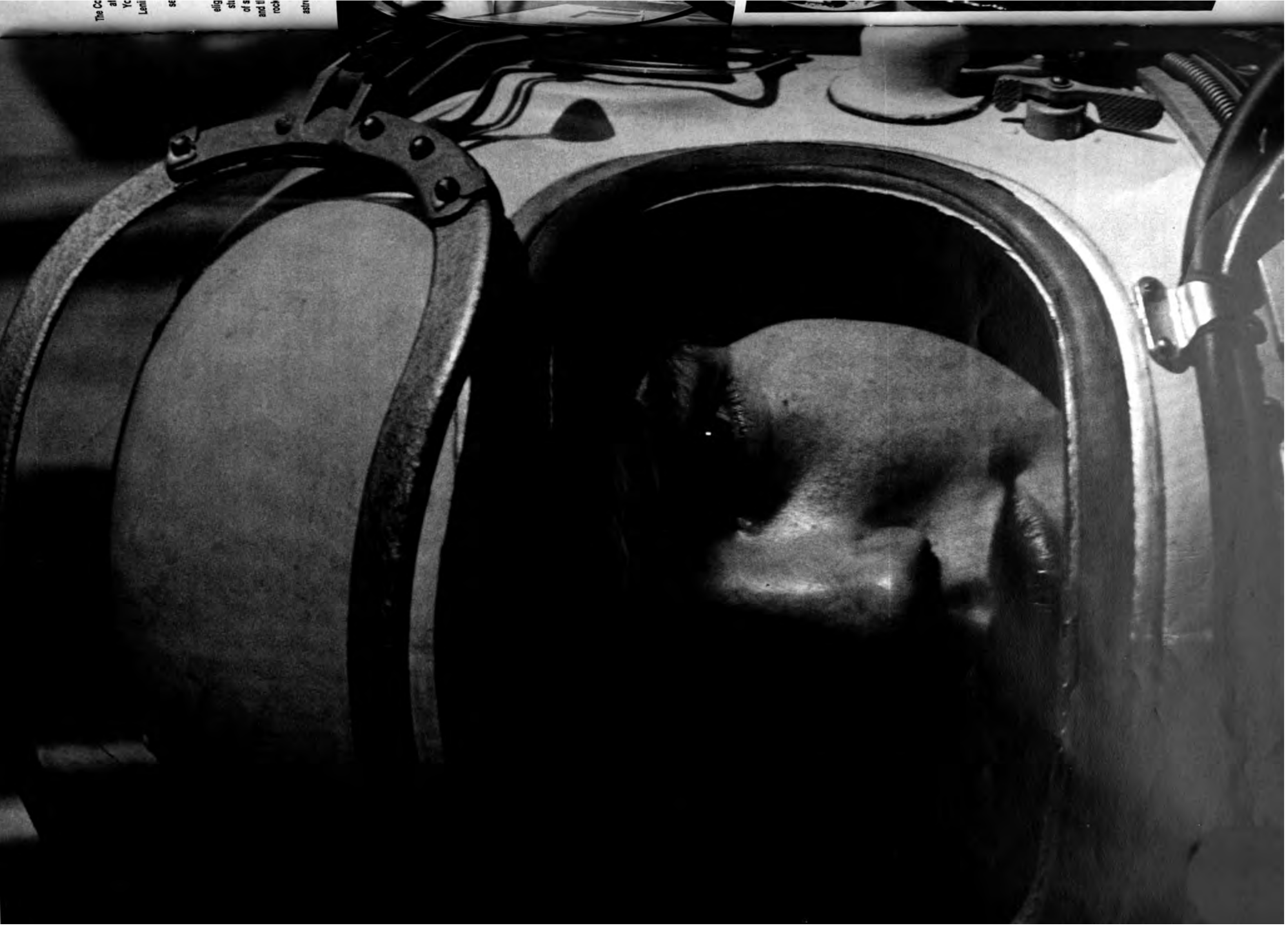
Continued on page 22





YOUNG COSMONAUTS' CLUB

Photographs by Boris Elin





The Cosmonaut Club at the Palace of Young Pioneers, Lenin Hills section of Moscow, is seven years old. High school students are eligible. Members study the history of space research and the elements of rocket technology, cosmography, astrodynamics and space biology.







The club has helped dozens of boys and girls to choose professions. Former club members are now studying at Moscow University, schools of aviation and medical institutes. Some are doing independent research in astronomy and cosmonautics.





The youngsters design and build model rockets, make astronomical and geophysical observations, study the effects of space flight on man and animals, and calculate spaceship orbits.



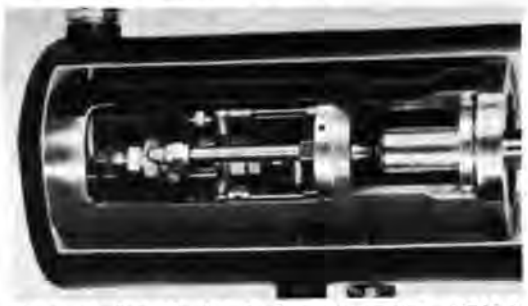
Facilities include well-equipped laboratories, a planetarium and an observatory. The club is often visited by cosmonauts. A recent welcome for Boris Volynov, Soyuz 5 commander (right photo).





Continued from page 15

ization of similar groups in other cities, came to be known as the Central. This group continued work on the OR-1 engine and undertook the development of Tsander's new engine, the OR-2.



First Soviet liquid fuel engine, the ORM-1.

The OR-2 rocket engine Tsander designed.



The Gasodynamics Laboratory was the first to suggest a self-igniting propellant and chemical ignition. It developed a cardanic suspension for rocket engines and began work on pump systems of feeding fuel to combustion chambers.

1932

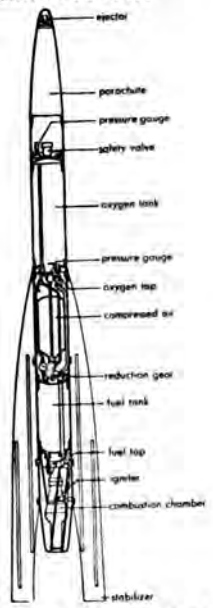
Along with TsGIRD (Central Group for Studying Jet Propulsion), the GIRD Experimental Plant was set up as an experimental design unit. The distinguished scientist and designer Sergei Korolyov was appointed to head GIRD, while Tsander headed the first GIRD team that completed development of the OR-2 engine with a thrust of up to 110 pounds. This engine was later improved and, designated the JRD-02, was tested in 1935, both on the bench and in flight (in rockets 07 and 216). The GIRD staff made a major contribution to Soviet rocket engineering in developing and launching the first Soviet liquid fuel rockets.

On August 17 the 09 rocket was launched, the first of the Soviet liquid fuel rocket flights. The 09 rocket was developed by the second team of GIRD, headed by Mikhail Tikhonravov, and had a hybrid engine operating on liquid oxygen and solid gasoline. The gasoline was placed along the walls of the combustion chamber around a central pipe with a number of side apertures. The inner cavity was used for the initial development of the flame. Propellant grain was inserted into the pipe for ignition. Part of the gas formed heated the liquid oxygen, which evaporated with great intensity and entered the combustion chamber under its own pressure. The 09 rocket was equipped with a parachute for descending to the ground. It weighed 42 pounds, was about eight feet long and had a diameter of seven inches. The rocket engine developed a thrust of up to 115 pounds.

On November 25 the first Soviet purely liquid fuel rocket, the GIRD-X, was launched. Its engine used liquid oxygen and alcohol and developed a thrust of up to 143 pounds. The GIRD-X rocket was built under the supervision of Tsander, with Sergei Korolyov and Leonid Korneyev assisting. It was seven feet long, had a diameter of 5½ inches and weighed 65 pounds.

Throughout the year the Gasodynamics Laboratory developed a series of engines from ORM-23 to ORM-52 operating on nitric acid and kerosene propellant with pyrotechnic and chemical ignition. The ORM-52 engine already developed a thrust of up to 660 pounds.

At the end of the year, on the initiative of Mikhail Tukhachevsky, the Revolutionary Military Council of the USSR decided to merge the GIRD and Gasodynamics Laboratory staff into the Rocket Research Institute (RNII). Ivan Kleimenov of the Gasodynamics Laboratory was appointed director and Sergei Korolyov to one of the leading positions. Between 1934 and 1938 the Gasodynamics Laboratory team in RNII developed a series of engines from ORM-53 to ORM-102, while the GIRD team continued work on previously designed rockets and developed a number of new designs of ballistic and aerodynamic rockets.



The GIRD-X, the first liquid fuel rocket.

1934

The GIRD team in RNII completed building the original 07 rocket, which was first tested in flight on November 17. This rocket had virtually no cylindrical section and consisted of four broad stabilizing fins, with the combustion chamber secured above. All the other parts of the rocket, including the fuel tank, were housed inside the fins.

1936

On April 24 the Aviavnitor rocket, the biggest and most powerful of its day, was first launched. It was 10 feet long, had a diameter of 12 inches and weighed approximately 220 pounds. The rocket engine worked on liquid oxygen and ethyl alcohol



ORM-65 engine for winged long-range rocket.

Continued on page 24

FLYING COSMODR

By Ari Sternfeld

Ari Sternfeld, Honored Scientis and Technical Specialist of the Russian Federation, is the author of *Flight in Space, Interplanetary Flights, Artificial Earth Satellites,* and *Introduction to Cosmonautics*. In 1933 and 196 he received international cosmonautic prizes.

THE AUTOMATIC DOCKING of two sputniks and the manual docking of manned spaceships . . . cosmonauts spacewalking from ship to ship . . . the first experimental inhabitable station in orbit. . . . "Such dramatic, electrifying and momentous happenings are rare in man's life and history, when events on which not only the present but the future depends occur in a single day, a single hour and even a single minute." That is how writer Stefan Zweig described the turning points in history. He called them stellar points.

The joint flight made in January by two multiseater manned spaceships, Soyuz 4 and Soyuz 5, was such a stellar point. The flight, which featured manual docking in space, opened large horizons for cosmonautics. One of these is the establishment of cosmodromes outside the Earth.

To reach the Moon, Venus and Mars—the celestial bodies closest to us—we must develop the tremendous speed of more than 6 miles per second. To make the problem easier, Konstantin Tsiolkovsky proposed as early as 1895—he was the first to suggest the idea—that a large artificial Earth satellite be used as an intermediary station and that the flight be made in several stages.

We know that any increase in the size of a single ship is limited by objective factors. In principle, however, there is nothing to prevent our setting up docked space stations containing space flight equipment. A ship designed for flight to the Moon or the planets, as well as the payload necessary to reach the point of destination, can be delivered in advance to a near-Earth orbit, in parts, and assembled there. Moreover, the "transportation" rockets can be used both for building the extraterrestrial cosmodrome and for assembling interplanetary rockets.

The great virtue of such a flying cosmodrome is that it is in motion. Landing on it, a flying vehicle can maintain its orbital velocity and use this velocity for a future launching.

Thus, unlike people traveling with stops on Earth, cosmonauts will be able to stop at the intermediary base and still maintain the speed they have been traveling at. Starting from the orbital cosmodrome to the Moon, Venus or Mars, a rocket will have to go at a speed of only 1.9-2.2 miles per second, instead of 6.8-7.2 miles per second which would be necessary if it were launched from the surface of the Earth. The point is that the extraterrestrial cosmodrome in this case would already have a velocity of about 5 miles per second. And this means that a rocket which would otherwise be capable of rising from the ground surface to an altitude of only 621 miles would be able to reach Venus or Mars by starting from such an intermediary platform.

The construction of a flying cosmodrome by docking of rockets launched into a near-Earth orbit is also justified by the following considerations. The greater the stock of fuel in the rocket leaving such a cosmodrome, the greater the speed it will develop (this is not always the case in launching from Earth!). Another thing: For launchings from an intermediary orbit, rockets of much smaller capacity can be used than in terrestrial launchings.

Indeed, in launchings from our planet the thrust of the rocket engines should be greater than the weight of the rocket; in launchings from a near-Earth orbit that is not necessary. Even with a thrust much smaller than the weight of an immobile rocket, the rocket can work up the required velocity. We might note that in launchings from Earth a substantial part of engine energy is expended not for useful work, but to compensate for the so-called gravitation losses.

If, for instance, the engine thrust is the same as the weight of the rocket, then the rocket will hang suspended in the air until its fuel burns out completely. And if the engine unit stops its work prematurely, the rocket will fall to the ground. A ship starting from an extraterrestrial cosmodrome does not have this problem.

It does not follow that any space station, granted it is big enough, can be fitted out (speaking practically now) with launching pads for rockets to the planets. If, for instance, the plane of the station's orbit is perpendicular to the plane of the orbit of the Earth, then the intermediary stop on such a cosmodrome would not make the interplanetary flight easier—it would make it impossible. This is explained by the fact that the direction of the space station movement would not then coincide with the direction in which the rocket must be launched. But such a space station can be used to explore the polar areas of the globe.

The choice of the altitude of flight of the extraterrestrial cosmodrome is important. It might seem that for space navigation convenience it is feasible to use a station circling the equator in a 24-hour period. Such a station would be stationary in the sense that in its motion around the globe, it remains immobile in relation to the surface of our planet. Besides, the direction of its movement at a definite time of day coincides (or almost coincides) with the necessary direction for launching rockets to planets.

Yet, the altitude of flight of such a launching platform (it should be ten times smaller than the radius of the lunar orbit) is too great for a flying cosmodrome. Launching from Earth and landing on such an extraterrestrial base call for substantial energy expenditure. The stationary space station is convenient for other practical purposes—for the retransmission of radio waves and close observation of phenomena on our planet.

Unlike the stationary space station, the flying cosmodrome will be at a low altitude over the Earth or, at least, it will pass not far from the Earth in a small section of its flight. A cosmodrome moving in an elliptical orbit with a far-removed apogee can serve as an intermediary base for more complicated flights than those which can be made in launchings from a low-flying cosmodrome. This is the reason:

The more remote the apogee, the greater the speed in perigee. Consequently, the launching from an elliptical orbit should be done preferably at the moment when the cosmodrome reaches its greatest velocity. The establishment of a "remote-apogee" cosmodrome will call for rather powerful rockets designed for launchings from the surface of the Earth. But it will make the building of ships for the second stage of the flight simpler and easier.

The flight in space, using docking techniques, can also take place in the following manner. The rocket takes off from the surface of the Earth and, having developed a velocity of about 5 miles per second,



First automatic docking of unmanned sputniks of the Cosmos series, October 1967.

turns into a temporary sputnik at an altitude of 125-185 miles. Auxiliary rockets deliver additional cargo and fuel (necessary for the further stage of the flight) to the sputnik rocket. Then the rocket starts for its point of destination.

An alternative scheme: First, fuel tanks are launched into a circular or elliptical orbit; then the interplanetary rocket is launched. After a rendezvous and assembly in orbit, the further stage of the flight begins. In each of these variants, engines and other parts of transport rockets arriving in the near-Earth orbit will be dismounted and used to equip further space expeditions.

With the flying cosmodrome as their base, cosmonauts will be able to improve, not far from their planet, the intricate practice of spaceship navigation in the Universe, and to master the skills of aerodynamic braking of escape velocity in descents to the Earth. Orbital space stations can also be used to experiment with improved designs of interplanetary rockets and reentry vehicles.

The docking techniques perfected in near-Earth space will be just as useful in the flights of cosmonauts from the surface of the Moon or the planets to the space vehicle waiting for them in orbit. In the flight to the Moon, for instance, there is no need to land on it first and then to lift off again all the apparatus and equipment necessary only for an Earth landing. All these elements can be left in the space "checkroom" to be reclaimed by their owners when they are needed. Such a method will make the problem of descent to other celestial bodies much simpler.

A flying cosmodrome can also be used as an intermediary base by cosmonauts returning from interplanetary flights. After a partial reduction of the velocity of their space vehicle, they can stay at the cosmodrome until they transfer to a reentry vehicle for a landing.

These are only some of the opportunities opened by the successful space experiments in the USSR. The automatic docking of Cosmos sputniks and manual docking of Soyuz 4 and Soyuz 5 confirm in practice the ideas and forecasts of the great Tsiolkovsky.

Continued from page 22

and developed a thrust of up to 660 pounds. On August 15, 1937, the Aviavnitor rocket was launched again and reached an altitude of 7,900 feet.

Testing was begun of the ORM-65 controllable-thrust liquid fuel engine, developed by the Gasodynamics Laboratory team in RNII. This was the best rocket engine of the period. With an engine weight of 31.4 pounds, it developed a thrust of from 110 to 385 pounds, withstood multiple firings (up to 50), and could operate continuously for 230 seconds. As propellant it used nitric acid and tractor kerosene. The engine could be fired both manually and automatically.

1937

Tests began of one of the first rockets designed by Sergei Korolyov. The 212 long-range aerodynamic rocket was equipped with an ORM-65 engine. The engine was mounted on a special frame in the tail section and was enclosed by a streamlined tail with a metal cowl to protect the rocket vanes from the exhaust stream.

The 212 rocket incorporated automatic firing, stabilization and internal control in flight. The flight weight of the rocket was 463 pounds, 66 of which were accounted for by the fuel and 66 by the warhead. The length of the rocket and its wingspread measured 10 feet, the body diameter 12 inches. The design range was 31 miles. The 212 rocket was designed and built in 1936. In 1937-1938 it underwent 13 firing tests on the ground and in 1939 was successfully tested in flight.

1939

On May 19 the USSR tested the world's first rocket with an airstream engine. It was also the Soviet Union's first two-stage rocket.

In August, in battles against Japanese troops in the Khalkhin Gol River area, use was first made of powder jet projectiles of the RS type, installed in fighter planes. This new weapon literally dumbfounded the enemy.

1940

February 28 saw the first free flight of the Soviet RP-318-1 rocket glider. It was designed by Sergei Korolyov and equipped with the RDA-1-150 liquid fuel rocket engine. The rocket glider was flown by Vladimir Fyodorov, one of the best glider pilots of the time who later became a well-known test pilot. It was carried up by an R-5 tug plane. After uncoupling, Fyodorov fired the rocket engine at an altitude of about 8,500 feet, and in five or six seconds the speed of the craft increased from 50 to 90 miles per hour. After 11 seconds of engine firing, the glider ascended 985 feet, maintaining an average speed of 75 miles per hour.



Sergei Korolyov's rocket glider in flight.

The successful flight of the RP-318-1 glider marked a new stage in the history of Soviet rocket engineering: It showed that the time was ripe for the practical application of rocket engines.

1941

During World War II the design organization set up in 1939 around the Gasodynamics Laboratory staff developed a whole family of auxiliary aviation liquid fuel rocket engines with pump feeding of nitric acid and kerosene, an unlimited number of firings and a thrust controllable from 660 to 1,980 pounds. They were successfully tested on aircraft designed by Vladimir Petlyakov, Semyon Lavochkin, Alexander Yakovlev and Pavel Sukhoy.

1942

On May 15 testing began of the first Soviet rocket airplane, the BI-1, developed under the supervision of designer Victor Bolkhovitinov. The aircraft had a nitric acid-kerosene engine with a controllable thrust of from 770 to 3,085 pounds. The BI-1 was



Famous test pilot Grigori Bakhchivandzhi.



The BI-1 plane, with its own rocket engine.

tested by Georgi Bakhchivandzhi. Unlike the RP-318-1 rocket glider, it took off with its own rocket engine, which gave the craft not only high horizontal speeds but exceptionally high climbing speeds. The best fighter planes available then had a maximum climbing speed of 59 feet per second; the BI-1 reached a climbing speed of 269 feet per second. Essentially a rocket with wings, it clearly demonstrated the advantages of rocket engines for superhigh speeds and great altitudes.

1947

The Soviet Union launched the first geophysical rockets designed for the study of cosmic rays.

1948

Soviet scientists began medicobiological investigation of animals lifted by rockets to heights of more than 60 miles. Between 1948 and 1952 six flight experiments were made with nine dogs, three of which were launched twice.

1949

Since May 1949 the USSR has made regular observations of the upper layers of the atmosphere with weather rockets.

Rockets equipped with powerful engines, automatic devices and control systems now soared to the limits of the atmosphere. But the bonds of the Earth's gravitational pull continued to tie them down to the mother planet.

WE HAVE enough now to make a accurate rendering of space station of the The method of constr will determine what it like. By using orbital doc we can have stations of weight and size and with number of modules. T modules will probably spherical or cylindrical. T geometric shapes can en the greatest volume with least weight, and they are most convenient for as bling the station and ma ing equipment in it. The tion proper can be any th a cylinder, sphere, a nave vanes, toroidal, and so on.

A relatively light statio be made up of several m ules: a command mo which will hold the co panels of the onboard ap ratus (the same module c also serve as a rem vehicle); a laboratory ule with research equipm an orbital module, for members of the crew not duty (this will be a sm variant of a one-room e ciency apartment). It will a have room for food sto The instrument-and-unit m ule (pressurized or non surized) will accommodate main apparatus, onboard s tems, electric supply sour orientation, stabilization rendezvousing engines, the fuel they need.

A Cylinder Or a Toroid?

Each of the possible ge metric shapes has advanta and disadvantages. A cy inder, for instance, is ide for arranging the station b falls short when it comes t the artificial gravity whic must be created during rot tion around the main axis o inertia. Since the main ax in such a cylinder are ap proximately the same, th station will become unreliab if anything goes wrong w the stabilization system the movements of the cr can then cause fluctuati However, the cylinder does into the general arrangem of the carrier rocket, some thing which we cannot say a toroidal shape. On the oth hand, toroidal stations a good for creating artifi gravity and are also m easily assembled in orbit.

A Station With Its Own Gravity

Now let us picture a orbital station of the fut

Continued on p

SPACE STATIONS OF THE FUTURE

BY ANATOLI ANDANOV AND GENNADI MAXIMOV
Engineers

Continued from page 24

It can be in the shape of a wheel with a dodecahedral-dioctahedral rim, a hub and six or eight spokes connecting the rim with the hub. Such a station can be assembled out of cylindrical modules placed in orbit in advance. The modules will be isolated and may or may not be pressurized. They will be joined with pressurized hatches. Every module will have an autonomous life-support system. A station designed for lengthy flights can create its artificial gravity by rotating at° about three revolutions per minute. This is necessary for the health of the crew.

The modules in the rim are designed for living and working, and they will be equipped much like comparable facilities on Earth.

Working and living modules will be connected with spokes and these with the hub. The spoke modules will hold service and research equipment, engine fuel, etc.

The hub can serve as a docking place for transport spaceships as well as a research laboratory. Transport ships will bring crew replacements, replenish the life-support system, deliver engine fuel and new research equipment. Several such ships will also be near the station at all times to evacuate the crew in case of emergency.

Decentralized Laboratories

The orbital station will probably be group-flying with special laboratory modules which will be placed in the same orbit as the station but not docked with it. Such sputnik laboratories are indispensable because some research makes special demands on the onboard systems and equipment (for instance, installing a telescope for astronomical observations where it will not oscillate). Besides, it is practically impossible to create a single laboratory module which will do for all the research planned, especially on small orbital stations. Therefore, cosmonauts will have to make trips between the orbital station and these laboratories.

The flight of spaceships Soyuz 4 and Soyuz 5—they constituted the world's first space station—gives us reason to believe that large orbital stations will be helping us see deeper into the cosmos in the not too distant future.

SOVIET SPACE RESEARCH

AS OF FEBRUARY 27, 1969

The Soviet Union has a large and comprehensive space research program. Annually several dozen Cosmos series satellites are launched for scientific studies, as are satellites of the Electron and Proton series. Some of the Cosmos satellites are sent up for meteorological observations (Cosmos 144, Cosmos 156 and others), some to perfect space-borne systems (Cosmos 186, Cosmos 188 and others). Also for this latter purpose spaceship-satellites were launched in 1960 and 1961 and maneuvering satellites of the Polyot series in 1963 and 1964. The Molniya 1 is a communications satellite. The Luna, Venera, Mars and Zond automatic stations are for studies of the Moon, the planets and interplanetary space. Finally, for manned travel such spaceships as the Vostok, Voskhod and in recent years the Soyuz have been orbited.

Soviet space research is expanding, as indicated by the following diagram.

SPACE VEHICLES LAUNCHED BY THE SOVIET UNION (1957-1968)

Number of vehicles launched

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Total
First artificial Earth satellites	2	1	—	—	—	—	—	—	—	—	—	—	3
Cosmos satellites	—	—	—	—	—	12	12	27	52	34	61	64	262
Electron satellites	—	—	—	—	—	—	—	4	—	—	—	—	4
Proton satellites	—	—	—	—	—	—	—	—	2	1	—	1	4
Molniya 1 satellites	—	—	—	—	—	—	—	—	2	2	4	3	11
Maneuverable Polyot satellites	—	—	—	—	—	—	1	1	—	—	—	—	2
Luna automatic stations	—	—	3	—	—	—	1	—	4	5	—	1	14
Venera automatic stations	—	—	—	—	1	—	—	—	2	—	1	—	4
Mars automatic stations	—	—	—	—	—	1	—	—	—	—	—	—	1
Zond automatic stations	—	—	—	—	—	—	—	2	1	—	—	3	6
Spaceship-satellites (tests of Vostok ships)	—	—	—	3	2	—	—	—	—	—	—	—	5
Manned Vostok ships	—	—	—	—	2	2	2	—	—	—	—	—	6
Manned Voskhod ships	—	—	—	—	—	—	—	1	1	—	—	—	2
Manned Soyuz ships	—	—	—	—	—	—	—	—	—	—	1	2*	3
Total:	2	1	3	3	5	15	16	35	64	42	67	74	327

* One of the spaceships (Soyuz 2) was unmanned.



Earth will remember them forever. They gave their lives to space exploration.

. . . Nothing is given to man gratis. Not a single victory over nature was won without sacrifice. We have begun learning something about near-Earth space. But were not our discoveries on Earth paid for with the lives of unusual men, heroes of many countries, courageous sons of mankind? The Norwegian Amundsen and the English Scott, the American De Long and the Frenchman La Pérouse, our Arctic hero Georgi Sedov and the indomitable traveler Alexei Fedchenko—how long is this dramatic list of the discoverers of our planet! People died, but new ships were launched and new aircraft took off, and new explorers set out for the wilderness.

Yuri Gagarin

Earth will remember them forever. . . .

AROUND the COUNTRY

A 68-YEAR-OLD STUDENT

Vasili Yerofeyev of the city of Gagarin, Smolensk Region, at 68 is the oldest student in the correspondence department of a higher school. He graduated from an agricultural technical school 35 years ago, worked as a zoo technician and then as chairman of a collective farm. Yerofeyev is now continuing his education in the Timiryazev Agricultural Academy in Moscow and very successfully—his marks are all "excellent."

MUSEUM CURATOR

Chief Curator of the Darwin Natural Science Museum in Moscow is Pyotr Smolin. On his seventieth birthday, this distinguished scientist was congratulated by professors and doctors of science. Pyotr Smolin's career does not fit into the traditional pattern of degrees and titles. He is a biologist with wide-ranging interests. An eminent ornithologist, he is also the author of many original studies of fur-bearing animals. He has worked in genetics, and several of his studies are being applied nationally. Many of his students have become leading biologists.

WORLD OF NATURE

A World of Nature show at the exhibition rooms of the All-Russia Nature Lovers' Society in Moscow displayed more than 100 different kinds of birds, 20 different kinds of fish and more than 50 different kinds of animals. They were provided for the occasion by Muscovites, including schoolchildren, and residents of Tula, a city not far from the capital. Cameraman Nikolai Savkin lent his collection of 30 varieties of songbirds, among them a wheatbird, a nightingale, a finch and a tree pipit.

OPERATION IRON STORK

Wizard transport men of Chukotka hauled a mammoth tubular tower crane across 125 miles of rough Arctic terrain to the community of Iultin in a 48-hour operation they labeled "Iron Stork." The crane has a five-ton hoisting capacity and a 72-foot-long boom. Built for extra-heavy duty, it is very stable and can thus work in strong winds—a matter of large importance in Arctic areas. The crane had to be brought in before the winter so that precious time for building would not be lost.



FORESTER'S HUT

A new restaurant near the city of Novorossiysk (on the Black Sea coast of the Caucasus) is built like a hunting lodge. The main structure and its several outbuildings have log walls. Called "The Forester's Hut," it is furnished with large wooden tables and massive stools. The walls are decorated with hunting trophies. A fence made of birch tree poles carries out the theme.

SHREWD WOLF

Nikolai Reshetov, a combine operator at the Shiryaiski State Farm in the Volga valley, acted on a hunch that day when he took his rifle with him. He had just reached the end of the wheat field when a she-wolf with two cubs dashed out of the tangle of bramble. Reshetov shot and killed the attacking she-wolf only when he pressed the trigger for the fifth time, after his rifle had snapped harmlessly four times in a row. The she-wolf's lair was only 200 paces from the threshing floor, in a place where hunters would have never thought to look for it.

SENIOR CITIZENS KEEP BUSY

A new home for the aged and disabled in the suburbs of Moscow accommodates 665 people. The state covers their full maintenance, including clothing. A well-stocked library and a club with a movie auditorium are at their disposal. The home has a staff of 200 including three doctors, 37 nurses and 70 medical attendants. Because these elderly men and women have been gainfully employed all their lives and want to go on contributing to the common good, the home has two enterprises—one for sewing, the other for the production of simple cardboard articles. Several such homes are soon to be built in other parts of Moscow.

LONGEVITY IN YAKUTIA

Our statisticians tell us that we have more centenarians in the Caucasian highlands of Azerbaijan, Daghestan, North Ossetia and Chechen-Ingushetia than anywhere else in the country. Curiously enough it is not the climatically favorable Crimea, Moldavia or Central Asia, but Yakutia, that land of cold, where even the mercury freezes at times, that rivals the Caucasus for numbers of ancients.

CAR EXHAUST PURIFIER

The Institute of Chemistry of the Kazakh Academy of Sciences has just completed trials of new catalysts devised to clean the exhaust gases of internal combustion engines of carbon dioxide, aldehydes, carbohydrates and nitric oxides. These new palladium catalysts are highly effective. They do a 50 to 100 per cent cleanup job, depending on the type of engine and its operating regime. The toxic components in the exhaust gas burn on contact with the palladium granules, which are packed into a latticed cylinder mounted on the car exhaust pipe.

SPACE BALLPOINT PEN

The Soyuz fountain pen factory in Leningrad received an order for a consignment of ballpoint pens which could be used under conditions of weightlessness. The first to try the new product under zero gravity conditions was Vladimir Shatalov, commander of the spaceship Soyuz 4. "The pen writes very well under all kinds of conditions," was his testimonial.



EQUIPMENT FOR THE ARCTIC

The Minsk Auto Plant's 40-ton Belaz-548 dump truck, designed especially for Arctic hauls, has started trials on the fields of the Mir (Peace) diamond pipe deposit in Yakutia. Over the long winter these trucks will travel some 20,000 miles. Also being tested there is a new EKG-8 (280 cubic-foot-capacity) excavator, made by the Leningrad Izhorsk plant. Its assemblages and parts are made of frost-resistant steel. Its cab is heated, elevated and positioned for maximum visibility and comfort.

PIANO MUSEUM

A permanent display of the musical instruments of different times and different peoples is housed in the old building of the Institute of Theater, Music and Cinematography in Leningrad's St. Isaac's Square. The museum has several pianos which belonged to great composers. Mikhail Glinka's grand piano was brought to St. Petersburg and donated to the museum by Ludmila Shestakova, the composer's sister. The instruments of Alexander Dargomizhsky and Anton Rubinstein are in the collection as well as the piano with which Nicolai Rimsky-Korsakov composed his last operas: *Kashchei the Immortal, The Legend of the Invisible City of Kitezh,* and *The Golden Cockerel.* This rare collection is being augmented.



MINIBOOK

Naziko Chidzhavadze, who lives in the Georgian city of Batum, is the possessor of a rare copy of Alexander Pushkin's famous novel in verse *Eugene Onegin.* The volume, no bigger than a matchbox, contains the complete text and can be read with the naked eye. The minibook was published in St. Petersburg (now Leningrad) at the turn of the century.

HYDROPOWER PROJECT IN THE MOUNTAINS

Construction of the Tetersk hydroelectric project in the mountains of Azerbaijan was begun recently. Located on the Teterchai River, it will be one of the largest in the republic.

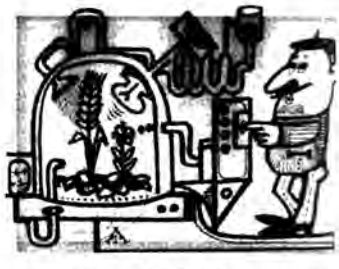
Earth and rock work has started. A 395-foot dam will be thrown across the river, which has already been channeled into a tunnel. The river bed is presently being cleared. The dam will back up an artificial lake with a capacity of 650 million cubic yards. Along the tunnel cut in the rock the water will flow under strong pressure to the turbines and pass through them into another reservoir underneath the dam. From there streams of water will flow through canals to four farm areas.

URBAN TEMPO GIVES ELK HEART ATTACK

One day an elk from the Znamenskaya Groves, which are inside the city limits of the Central Russian town of Kursk, went for a look at the central part of town. After two days of wandering, during which it fed on the bread and water offered by townspeople, it sneaked into a streetcar depot. The noise and the electric flares frightened the animal. The drivers tried to help but the beast kicked and struggled, with the result that two of the men landed in the hospital. Instead of bolting through the open gates it crashed through the massive wrought iron fence. However, the traffic on the Moscow-Simferopol Highway scared the animal into a courtyard where it got caught in a swing. Hunters and militiamen released the elk but the tempo of urban life apparently proved too hectic for the animal—it died of a heart attack.

NEW POWER PLANT FOR KAZAKHSTAN

A river in Kazakhstan called the Ili very often runs dry. Its flood plain is extremely fertile. The Kapchagaisk Hydroelectric Power Plant is being constructed on the river. Its capacity is not great, but besides supplying electric power to nearby villages and factories, it will have a reservoir with a capacity of 1,024 billion cubic feet of water after the river is dammed. On the banks will be sanatoriums, rest homes and Young Pioneer camps. The reservoir will irrigate more than a million acres of collective and state farm land.



PLANT MICROCLIMATE CREATED

The USSR Academy of Sciences Central Design Office of Unique Instruments has built an installation called Phitotron-KF-2 for study of plant development under various climatic conditions. The phitotron can be programmed to automatically control temperature, humidity, gas composition of the atmosphere, root nutrition regimen and lighting inside the chamber.

WHERE DID THE NEANDERTHALS LIVE?

Ethnographers and archeologists of the Komi Autonomous Republic (in the northern part of the European USSR) have found the remains of a Neanderthal settlement on the bank of the Pechora River, not far from the Arctic Circle. From the primitive stone implements they conclude that the settlement is about 70,000 years old. The discovery changes previous ideas of the location of stone age man in Northeast Europe.



SUBWAY IN TASHKENT

The 1,350,000 inhabitants of the fourth largest city in the USSR, Tashkent (Uzbekistan) will soon have a subway. The first underground line, 10 miles long, will connect the center of the city with residential districts and industrial areas on the southwestern and northeastern outskirts. The line will have 12 stations.

WEATHER STATION ABOVE THE CLOUDS

A glacier in the Pamirs, named for Alexei Fedchenko, a famous geographer, has long held the attention of scientists. The biggest mass of ice in the country, almost 46 miles long and hundreds of feet thick, it is constantly changing its shape. The regimen of the mountain rivers of Central Asia depends on the volume of the ice mass and the rate at which it melts. It also affects the weather in the valleys. A hydrometeorological field station has been set up in the very heart of the glacier. Five of its workers make observations of the weather, the sun radiation and the behavior of the glacier. The station is the higest manned metereological center on Earth, situated at an altitude of more than 13,000 feet.



PIANO AND ORGAN IN ONE

A factory in Zhitomir (the Ukraine) makes many kinds of electromusical instruments. Its latest product is a piano that works on semiconducting elements. The six-octave instrument's several registers make it possible to change the timbre and tone color over a wide range—from the sound of an ordinary piano to that of an organ.

STUDENT TV STUDIO

Students at the Novosibirsk Electrical Engineering Institute have set up a television studio in which they are the technicians, cameramen and announcers. Educational programs, music and amateur films are broadcast from the studio and the institute lecture halls and laboratories to 50 television sets installed in the auditoriums and corridors.

NEEDLELESS INJECTION

The All-Union Research Institute of Surgical Instruments has invented a pneumatic injector that dispenses with a needle. It gives intracutaneous, subcutaneous and intramuscular injections without breaking the skin. Gas under great pressure forces a thin jet of medicinal solution through a nozzle; the patient feels almost nothing at all during the treatment. Dosage and depth are controlled. The needleless injector simplifies administering of medicines and reduces the personnel involved. The apparatus remains sterile regardless of the number of injections.

VOLCANIC GLASS

Millions of years ago there was an active volcano near the present city of Semipalatinsk (North Kazakhstan). The great mass of volcanic glass it left behind is now valued highly by construction engineers, who use it as a raw material for building. The glass has other uses also: Chemical analysis indicates that it makes a good container for unstable liquids.

STONES FROM HEAVEN

More than 20 fragments of the largest meteorite reported in the last 200 years have been brought from the Sikhote-Alin mountain ridge in the Far East to the laboratory of the Ukrainian Academy of Sciences. Scientists calculate that the total mass of this "stone from heaven" that fell to Earth in 1947 must have been a hundred tons; 35 tons of fragments have already been collected. Students of meteorites, the only nonterrestrial substance available for laboratory investigation, say that the Sikhote-Alin meteorite did not originate in an oxygen environment like other rocks found on Earth, but in a hydrogen environment. It looks to them more like the product of an asteroid, one of the small planets of the solar system.

EXHIBITS 5000 YEARS OLD

The Moscow Museum of Fine Arts has been showing the works of masters of Egypt, Urartu and other ancient civilizations. Some of the 1,500 exhibits are more than 5,000 years old.



CLOCK NO. 1

Eight o'clock every morning and six o'clock every evening Pavel Novikov climbs up the ancient stone steps and the cast-iron staircase of the Spassky Tower of the Moscow Kremlin. For 20 years he has been checking on the Soviet Union's major timepiece. The Spassky Tower chime has been there for centuries. The first one, historians say, was installed in 1491 when the tower was built. The present chime, the fourth, consists of 10 quarter-hour bells and a big bell for the hour. The 25-ton clock, three stories high, is wound twice a day by an electric motor.

RESERVATION ON THE VOLGA

The Astrakhan natural preserve in the delta of the Volga marked its fiftieth anniversary this year. During its comparatively short life it has done wonders to enlarge the size of flocks of birds which were almost extinct. Unique reed thickets and willow woods have been preserved. Ondatra, beaver and other valuable animals have been brought here and have adapted to the climate. The reservation has become an important research center for biologists.

ARTIFICIAL OYSTER BEDS

Oysters have almost completely disappeared from the Black Sea in recent years, except for small beds in Yegorlyksky Bay. Scientists found the oyster beds were depleted because the sea bottom was covered with slime. They planted oysters in suspended tanks. The tank oysters grew much faster than those in the natural environment. Economists believe this method of breeding oysters is practicable.

LIBRARY IN A FIELD BAG

Geologists on field trips often have to travel hundreds of miles from the nearest populated area. Every pound they carry is taken into account, including the heavy reference and technical literature they need for their work. Krasnoyarsk (Southern Siberia) geologists met the problem by microfilming 100 books. The whole "library" fits into a field bag.



ART FOR SALE

The Art Fund of the USSR has opened its biggest art showroom in the country in Moscow. Four large halls display the works of painters, sculptors and graphic artists for general sale.



NEW MEDICAL TOOL

A new medical tool to accelerate the healing process has been designed at a medical equipment factory in Volgograd. The principle behind this is simple: It creates a vacuum which forces a flow of blood to the affected area, thus promoting healing. Doctors recommend the new piece of equipment for treatment of ulcers, tonsilitis and inflammation of the gums. The factory, which also makes operating tables, dentists' drills and electric scalpels, sells its products to 40 countries.

CHILDREN STUDY COSMONAUTICS

A department of astronomy and cosmonautics has been opened at the Moscow City Pioneer Palace. The two-year curriculum includes astrophysics and space biology. Undoubtedly it will influence the choice of career of some of the 300 children enrolled and will enrich the general background of all. The course is offered after the regular school day.

CURATIVE WATER . . . IN THE ARCHIVES

Rafail Gurevich, a history student at Perm University (the West Urals), looking through the archives of one of the local factories, found a document full of intriguing figures and chemical formulas.

In the early 1930s, when the factory was still under construction, geologists bored a deep hole in the taiga; they were looking for common drinking water. Instead of drinking water they found a hydrogen sulfide spring. The document was an analysis of the water. Soon after its discovery, the spring was closed and drinking water found in another place. Now the factory medical department plans to make use of the curative properties of the spring.

AROUND the COUNTRY

THE LEGAL STATUS

OF THE MOON

Space law is a recent offspring of international law. The legal questions involved in this new field of human endeavor are far from solved. But one thing is clear, that in outer space there must be cooperation among all countries for the ultimate benefit of all mankind.

By Gennadi Zhukov

Director of the International Institute of Space Law affiliated with the International **Astronautical Federation**

Dramatic advances in cosmonautics suggest that the day is not far off when manned flights to the Moon will be routine. This makes the legal position of our natural satellite a vital problem

The Moon's status as a legal entity was first defined in the Treaty on Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (January 27, 1967). It gave all states free access to the Moon. The Moon and other celestial bodies cannot, therefore, be annexed by any state. Nor can it be annexed by proclaiming it sovereign territory, by utilizing or occupying it, or in any other way.

The Moon, like other celestial bodies, is to be used exclusively for peaceful purposes. No military bases, installations or fortifications are to be built, no weapons tested and no military exercises conducted on it.

However, there is no prohibition against the use of military personnel for scientific research or for any other peaceful goals. This reservation is for practical considerations. It must be obvious to everyone that the courage and stamina, training and skill of military pilots make them the best candidates for cosmonauts. Furthermore, the peaceful or non-peaceful nature of space activities depends not on whether they are carried on by a civilian or a military man, but on the particular objective. It is essential that this reservation with regard to the use of military personnel, as well as of equipment, not provide a loophole for using the Moon for military purposes.

With the Moon declared fully demilitarized and neutralized, no state has a military advantage. Nor is the defense of any state affected. Banning the military use of the Moon was therefore possible before agreement on general and complete disarmament. A point to note: Full demilitarization and neutralization applies only to the Moon and other celestial bodies; it does not cover outer space as a whole.

Freedom of access to the Moon does not give any state the right to engage in activities that may harm other states. One of the clauses in the treaty requires states that explore outer space not to contaminate other celestial bodies and not to bring back to Earth any contaminants from other celestial bodies.

The potentially dangerous consequence of experiments in space has been considered repeatedly by the UN Committee on the Peaceful Uses of Outer Space and by a number of non-governmental bodies, for example, the International Committee for Space Research (COSPAR) of the International Council of Scientific Unions.

The UN committee has urged all UN member states to apply to COSPAR's consultative group for a scientific determination of the quantitative and qualitative aspects of space experiments and to take due account of the conclusions arrived at.

No matter how small the likelihood of there being microorganisms on the Moon, scientists still must consider their possible harm to terrestrial forms of life. Lunar microorganisms may find their way to the Earth via returning spacemen. So an appropriate procedure was devised for the sterilization of a ship coming from the Moon, its contents and, above all, the sealed containers with samples of Moon soil and the cosmonauts' space suits.

The treaty on outer space cannot be expected to provide answers to the many questions which will arise as the Moon is explored. Many of the provisions of the treaty, for example, will need to be further developed and detailed as they apply to research stations set up on the Moon. Legal adjustment will eventually be required with regard to the problems created by people landing on the Moon, leaving it, and their mutual relations while living at scientific stations.

The January 27, 1967, treaty gives a state the ownership of space hardware it brings to or erects on the Moon.

A space object on the Moon can be built from materials brought from Earth, from local raw materials and from both. The space treaty does not refer to stations constructed on the Moon of local raw materials. There is every ground, therefore, for listing such stations in the national register of the states that build them. The argument raised by some people that this runs counter to the treaty clause banning annexation of the Moon by any state has no serious foundation.

International colloquiums on space law have also debated whether an abandoned station becomes no man's property. Can it be occupied and used by another country? Can it be relocated or destroyed? In our view an abandoned station continues in principle to remain the property of the state that brought it to or built it on the Moon. For such a station to be declared no one's property, a clear-cut statement to that effect is needed from the owner state.

The international status of Antarctica, as we know, does not prevent individual states from setting up scientific stations. The 1959 Treaty on Antarctica gives each state jurisdiction over its own nationals there. The situation with the Moon will probably be somewhat different. A state which has set up a scientific research station or a community on the Moon, by virtue of its responsibility for everything that happens there, will undoubtedly have to exercise jurisdiction over its own citizens and the nationals of other states as well.

Of course, if the states concerned prefer to apply the principle of personal jurisdiction throughout, they are at liberty to conclude an appropriate agreement. Practice will probably decide whether or not a different legal status will be necessary for foreign nationals who are members of the station's permanent personnel and for those who are only visiting.

It should be borne in mind that the activities of states in the exploration and use of the Moon must be conducted "in conformity with international law, including the United Nations Charter, in the interests of preserving world peace and security and promoting international cooperation and mutual understanding." This means that states concerned have the right to resolve any disputes arising on the Moon in accordance with Article 33 of the UN Charter.

As separate countries set up stations on the Moon, it will probably become necessary to conclude special international agreements to settle questions that may arise.

Very important for cosmonauts landing on the Moon will be a service to predict dangerous flares on the Sun and to provide timely warning of increased radiation from an unexpected solar flare. That is taken care of by the space treaty's clause requiring states to provide each other with information on phenomena they discover in outer space, including on the Moon and other celestial bodies, which might constitute a hazard to the life or health of cosmonauts. Agreements for the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched in Outer Space (April 22, 1968) provides that the launching authority and the UN Secretary-General be informed immediately of an accident on the Moon, of a foreign spaceship crew in distress or of an emergency landing on the Moon.

Exploration of the Moon will possibly require an appropriate rescue service which might, among other things, be ready to launch a rescue ship from Earth to Moon on a distress signal from cosmonauts who land on the Moon, launch a rescue ship into around-the-Moon orbit in anticipation of such a signal or send rescue facilities to the supposed landing site on the Moon.

The rigorous and unfamiliar conditions man will inevitably face on the Moon will demand the close cooperation of the people there from different countries. Arrangements for mutual assistance would include a halt to experiments which might impede the operation of any station on the Moon (for instance, interfere with its radio communication with Earth).

Besides the right to set up stations on the Moon, each state will have the right to the Moon's natural resources. This right will cover: 1) prospecting, extraction and development of the mineral and other natural riches of the Moon; 2) utilizing and processing them for local needs and for export to Earth.

Recognition of the right to use the Moon's re-

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SOVIET SPACE AGE CHRONOLOGY



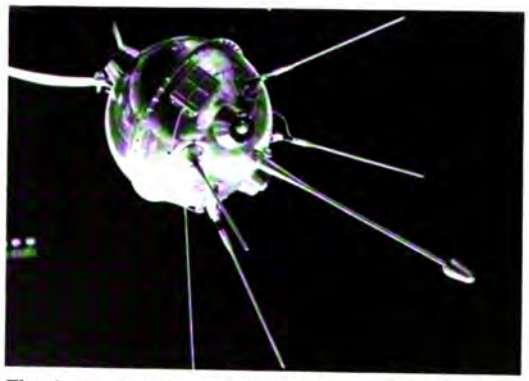
It is now 12 years since Sputnik 1 was launched.

October 4, 1957. *The world's first artificial Earth satellite was placed in orbit. Orbital velocity (about 5m/sec) had been imparted to a man-made vehicle. The International Astronautical Federation declared that this launching marked the beginning of the space age.*

November 3, 1957. *The world's second artificial Earth satellite was launched. The first animal (the dog Laika) was orbited.*

May 15, 1958. *The third Soviet Earth satellite was launched, with the phenomenal weight, at the time, of 2,925 pounds and scientific apparatus weighing 2,134 pounds. This was the first orbital automatic station equipped for comprehensive research in outer space.*

January 2. 1959. *The Luna 1. automatic station was launched. It passed within 3,728 miles of the Moon's center, made its scheduled observations, and went into orbit around the Sun to become the world's first artificial planet in the solar system. A man-made vehicle had been accelerated to escape velocity (over 7m/sec).*



The Luna 2, first spacecraft to reach the Moon.

September 12, 1959. *The Luna 2 automatic station was launched, made observations in near-lunar space and conveyed the Soviet Union's coat of arms to the Moon's surface on September 14. This was the first man-made vehicle to reach another celestial body.*

October 4, 1959. *The Luna 3 automatic station was launched on a Moon-circumventing trajectory. From a distance of 40,400-46,600 miles the station photographed the reverse side of the Moon and, on approaching Earth, transmitted the pictures by television. This station gave us our first view of the hidden side of the Moon.*

May 15, 1960. *The first spaceship-satellite was launched, the beginning of flight tests in preparation for placing a manned spaceship in orbit.*

August 19, 1960. *The second spaceship-satellite was launched. On August 20 the ejector capsule with the dogs Belka and Strelka returned to Earth. This was the first time living animals were brought back to Earth from a satellite.*

February 12, 1961. *The Venera 1 automatic station was launched on an interplanetary trajectory. This was the world's first automatic station launched to a planet of the solar system. It was also the first time an automatic station started from a heavy satellite orbiting around the Earth. According to calculations, on May 19-21, 1961 the station flew past Venus at a distance of less than 62,000 miles.*



Pioneer space explorer Yuri Gagarin (1934-1968).

April 12, 1961. *The world's first manned spaceship, the Vostok 1, was launched. Cosmonaut Yuri Gagarin spent 1 hour 48 minutes in space.*



Gherman Titov, cosmonaut No. 2, spent 24 hours in space, a full cycle of work, eating and sleeping.

August 6, 1961. *The world's second manned spaceship, the Vostok 2, was launched. Cosmonaut Gherman Titov spent 25 hours 18 minutes in space.*

March 16, 1962. *The Cosmos 1 satellite was placed in orbit. Tass announced a program of regular launchings of the Cosmos series to conduct research in terrestrial space, and to test and perfect various space-borne systems.*



Cosmonauts Pavel Popovich and Andrian Nikolayev were the first to make a group flight in space.

August 11, 1962. *The Vostok 3, carrying*

Continued on page 33

"Spaceships will fly deeper and deeper into the Universe. Our object in reaching the other planets of our solar system is to stand on the surface of these unknown celestial bodies, to learn their nature and, thereby, learn more about the Universe around us and about the Earth on which we live."

Sergei Korolyov.

SERGEI KOROLYOV: DESIGNER OF SPACE ROCKETS

SERGEI Pavlovich Korolyov (1906-1966) was born in Zhitomir (in the Ukraine), the son of a teacher. He completed his studies in an Odessa vocational school for building workers in 1922, began to work in the aviation industry in 1927, and graduated from the Moscow Higher Technical School and a Moscow flying school in 1930.

His talents were responsible for many of the great achievements in space exploration. A brilliant organizer and a great scientist, Korolyov for years directed the work of numerous research and design groups. His scientific and technological ideas were used widely in Soviet rocketry. He headed projects for the development of many ballistic and geophysical rockets, carrier rockets and the Vostok and Voskhod series spaceships, the vehicles for the first manned flight and the first walk in space, respectively. The space rocket systems developed under his guidance made possible the first launchings of artificial satellites of the Earth and the Sun, the launchings of automatic interplanetary stations to the Moon, Venus and Mars and the soft landing on the Moon. He directed the projects to build the Electron and Molniya 1 satellites, many of the Cosmos series satellites and the Zond interplanetary probes.

Korolyov himself designed rockets proper, space stations and ships. Rocket motors, flight control systems and some of the other onboard systems, as well as all ground start facilities, were developed by other designers. The joint efforts of these design groups and of research institutes and factories account for the progress of Soviet space technology. Korolyov was the mentor of many distinguished engineers. The biggest formation (tallassoid) on the reverse side of the Moon has been named for this man, who contributed so much to the founding of practical cosmonautics.



April 12, 1961—a historic moment. Sergei Korolyov during the launching of Vostok 1, the first manned spaceship.



Continued from page 31

Andrian Nikolayev, was launched. The Vostok 4, carrying Pavel Popovich, was launched on ***August 12, 1962.*** *The two made the world's first group flight. Nikolayev's flight continued for 94 hours 22 minutes and Popovich's for 70 hours 22 minutes.*

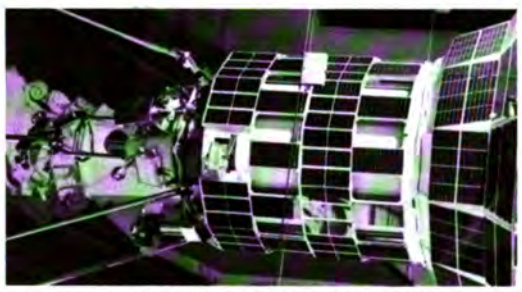
November 1, 1962. *The Mars 1 automatic station was launched on an interplanetary trajectory. This was the world's first automatic station launched toward the planet Mars. The station set a record for long-distance radio communication (66 million miles). According to calculations, the station flew past Mars on June 19, 1963.*



Cosmonauts Valentina Tereshkova and Valeri Bykovsky, who made a joint flight in Vostok 5 and 6.

June 14, 1963. *The Vostok 5 manned spaceship was launched. Valeri Bykovsky made a joint flight with the world's first and only woman cosmonaut, Valentina Tereshkova. She was launched in Vostok 6. Valeri Bykovsky's space flight lasted 119 hours 6 minutes (USSR record), Valentina Tereshkova's 70 hours 50 minutes.*

November 1, 1963. *The Polyot 1 maneuverable satellite was placed in orbit. This was the world's first satellite capable of varying both its altitude and the inclination of its orbit.*



The Electron 2 investigated changes in the magnetic field of the Earth's outer radiation belt.

January 30, 1964. *The Electron 1 and Electron 2 satellites were launched to study the radiation belt at different heights. For the first time in space history a single carrier rocket placed two satellites in substantially different orbits, making possible simultaneous investigation of the "outer" and "inner" radiation belts.*

April 2, 1964. *The Zond 1 automatic station was launched, the beginning of launchings of the Zond series designed to study the Moon and interplanetary space and to perfect space-borne systems.*

October 12, 1964. *The world's first multimanned spacecraft, the Voskhod 1, was launched. Pilot-cosmonaut Vladimir Komarov, scientist-cosmonaut Konstantin Feoktistov and physician-cosmonaut Boris Yegorov spent 24 hours 17 minutes in space.*



Engineer Komarov, physician Yegorov and scientist Feoktistov made the first multimanned flight.

March 18, 1965. *The Voskhod 2 multimanned spacecraft was launched, and a cosmonaut took the world's first "walk" in open space. Cosmonaut Alexei Leonov spent 20 minutes in open space, including 12 minutes outside the air lock chamber, and moved 17½ feet away from the spacecraft. The craft's commander, Pavel Belyayev, and Alexei Leonov spent 26 hours 2 minutes in space.*



Cosmonauts Alexei Leonov and Pavel Belyayev. Leonov was the first man to walk in space.

April 23, 1965. *The Molniya 1 satellite was launched, the beginning of a satellite communication system serving the territory of the Soviet Union. This system includes several dozen Orbita ground stations for relaying television broadcasts to remote parts of the country.*



The Molniya 1 was the first in a series of communications satellites serving the Soviet Union.

The Proton 1 is one of a series of heavy orbiting automatic stations weighing from 12 to 17 tons.



July 16, 1965. *The Proton 1 satellite was placed in orbit. The Proton satellites are the heaviest orbital automatic stations in the world (Proton 1, Proton 2 and Proton 3 weigh 13.4 tons each; Proton 4 weighs 18.7 tons).*

July 18, 1965. *The Zond 3 automatic station was launched. It flew past the Moon at a distance of about 6,200 miles, photographed an area of 3,820,000 square miles on the reverse side of the Moon (including areas not covered by the Luna 3 automatic station in 1959) and went into orbit around the Sun. In order to test the station's space-borne equipment, the pictures were transmitted to Earth twice, from distances of 1.3 million miles and 19.5 million miles.*

Continued on page 45

WHAT AWAITS MAN SPACE?

SOVIET LIFE correspondent Ludmila Borozdina interviews Lev Gindilis and Boris Panovkin of the Sternberg Astronomical Institute, Moscow.

We have grown accustomed to artificial Earth satellites, as we have to jet planes, nuclear power plants and cybernetic systems. Another satellite launching is no longer a sensation. In a matter of decades orbital flight around the Earth will be routine. Even earlier, we will be traveling to the Moon and then to other planets of our solar system. What then?

Question: Where will the further development of cosmonautics lead us?
Answer: In long-term prospects, to populating the solar system. Konstantin Tsiolkovsky believed that man would gradually populate interplanetary space and create an artificial biosphere around the Sun, that people would live in artificial cities rotating around the Sun in nearly circular orbits. In recent years similar ideas have been advanced by the well-known American physicist Freeman J. Dyson.

Question: Will we ever be able to take the next step: the stars?
Answer: Probably not. The jump from interplanetary to interstellar travel is too big. To escape the pull of terrestrial gravity, we would have to reach a velocity of 7m/sec. To leave the solar system, we would have to reach a speed of 26m/sec. A rocket racing at a speed of 31m/sec would take 27,000 years to reach Proxima Centauri, the star closest to the Sun. Millions of years would be needed to travel to the more distant parts of the Galaxy. We could cut down the time with a photon rocket flying at the velocity of light. But the difficulties of building such a rocket are so formidable that many experts despair.

Question: Let us be optimistic. Let us suppose that our descendants create a photon ship. Would the ship be able to reach remote areas of the Universe within some realistic time, say, the lifetime of the crew?
Answer: It is possible in principle: If the spaceship moves at a velocity close to the velocity of light, the rate of time flow in the ship will slow down. But the flow of time on Earth will remain the same. Therefore, a journey to the center of the Galaxy will take about 60,000 years (according to the clock of a terrestrial observer) and a journey to the famous Andromeda Nebula, closest to the galaxy M31, about two million years. On Earth thousands of generations will have come and gone in the meantime. The astronauts might come back to a society which has moved so far ahead as to be entirely incomprehensible to them. Say, a society of zoophytes, according to Tsiolkovsky, or a society of synthetic intelligent beings, or perhaps they would find no one at all.

Probably it is this moral-psychological factor, rather than physical restrictions, that rules out the possibility of interstellar there-and-back journeys. As for the gradual diffusion of mankind into outer space, this process is physically possible. Flights will be made first to the nearest stars (such a flight is feasible at a speed considerably lower than the velocity of light, for example, at a speed of one-tenth the velocity of light, in which the most formidable difficulties are done away with), then flights will be made to the next stars, and so on. Therefore, we agree with Dyson that interstellar journeying is a problem of social motivation rather than of physics.

Question: Do you believe that there is intelligent life outside the Earth?
Answer: We can't give either a yes or no answer to this question.

Question: But many scientists do argue for widespread, technologically developed civilizations in the Universe. What is your opinion?
Answer: The arguments sum up this way. Our present telescopes can scan a region of space with a radius of several billion light years. Within this area lie approximately 10^{10} galaxies and about 10^{21} stars. All the data of modern astronomy indicate that the basic laws of physics are valid throughout the observed region of the Universe—and a similar chemical composition is observed everywhere. Our Sun is an ordinary star in an ordinary galaxy. There is not a single parameter which would differentiate our solar system from these 10^{21} stars. It would be surprising indeed if life and intelligence could originate near only one of this stupendous number of stars, near an ordinary star, our Sun. Add to this the serious arguments advanced in recent years for a considerable number of planetary systems in the Galaxy (we can suppose that at least 10 per cent and perhaps most of the stars in the Galaxy have planetary systems).

Modern cosmogonic theories go along with this conclusion, in contrast to the catastrophe concepts which predominated at the beginning of our century.

Logic tells us that life and intelligence are common phenomena in the Universe, that there are many inhabited worlds. There is much evidence in favor of this theory (Dyson calls it orthodox), but it cannot be regarded as irrefutable.

Question: Why?
Answer: To estimate the possible number of civilizations in the Universe (or in our Galaxy alone), we should know first the proportion of stars with planetary systems. Second, we should know the proportion of planets with conditions suitable for life. (For this we must also know the conditions necessary for life to originate, and speaking more generally, what life is, what is essential for life.) Third, we should know what the probability is for life to originate on a planet with suitable conditions. Fourth, what the probability is for intelligent life to originate in the process of evolution of animate nature on a certain planet, what the probability is for the evolution of technologically developed civilizations with means for interstellar communication. Fifth, what the lifespan is for technologically developed civilizations. The vagueness or complete absence of data on all this makes for very indefinite estimates of the number of inhabited worlds. To put it plainly, our level of knowledge being what it is, we cannot estimate the number of civilizations in the Universe even approximately. Strictly speaking, we cannot rule out even the extreme and improbable consideration that our civilization is the only one in the Universe. In other words, the existence of intelligent life in the Universe still remains a hypothesis, highly probable, but no more than a hypothesis.

Question: Are there ways of verifying the hypothesis?

Answer: One such way is the detection in outer space of traces of activity of more developed civilizations. No such traces have yet been discovered.

Question: However, there are quite a number of mysterious and inexplicable celestial phenomena. Would you interpret any of them as evidence in favor of intelligent activity of intelligent beings?
Answer: Quasi-stellar radio sources or quasars are especially interesting in this regard. Interesting also are sources of master emission of molecules of hydroxyl OH, and the famous pulsating sources or pulsars. Each of these has been conjectured to be artificial. Indeed, they all have surprising properties, and the astronomer has to batter down very real obstacles to explain them. But this is not reason enough to contend they are artificial. We cannot pass a verdict until and unless the "guilt" of these sources has been fully proved. This legal presumption must be applied to celestial objects as well.

To prove that the object (source of radioemission, for example) is artificial, we must have reliable criteria, but establishing such criteria is a highly complex and baffling problem.

Question: Do you think that there may be forms of life different from those we know?
Answer: Yes. We are psychologically influenced by the fact that the terrestrial form of life, our terrestrial biosphere, is the only form of life we know. We incline to be anthropomorphic or geocentric, to believe that all other "quasi biospheres" in the Universe have much the same components as our biosphere. Having established in advance a certain preconceived norm of existence, we then try to calculate the probability for these "normal conditions" in other areas of the Universe. It should not be forgotten that the Sun and the Earth can be regarded as ordinary cosmic bodies, while from other viewpoints, they can be regarded as nonstandard variations (for example, the fact that the Earth has a heavy satellite, the Moon, is an obvious cosmic accident, but this accident has affected the entire course of biological evolution).

Besides, it is wrong to estimate a dynamic plastic phenomenon like life from the point of view of probability. We should not consider the appearance of life as a "thermodynamic miracle of a second type," that is, a manifestation of purely combinatory spontaneous connection of atoms into molecules under favorable conditions. Incidentally, calculations on this basis lead to infinitesimal chances of the possibility of life's originating anywhere.

Question: And what about intelligence? Do you think that evolving life always produces intelligence?

Answer: Today cybernetics investigating the laws of life and intelligence in the most general form (investigation of the principles of self-organization of systems) comes to the conclusion that highly organized types of systems (analogues of life and intelligence) will inevitably appear under cer-

N OUTER

"... There are innumerable suns and innumerable earths, which revolve around their own suns, just as our seven planets revolve around our Sun.... Living beings inhabit these worlds."

Giordano Bruno

tain conditions which must obtain in some areas of the Universe. However, specific environments produce their own specific organisms which cannot be compared on the strength of some absolute criterion of development or perfection with organisms developing in other environments. Every life or intelligence fits its own specific environment. The organization which is ideally adjusted to existence on planet X may be completely unsuitable for life on planet Y. Therefore, the following thesis seems to be plausible.

The appearance in the Universe of highly organized kinds of matter—complex self-organizing systems—is legitimate and evidently inevitable for numerous environments in the Universe. However, forms of existence are different and specific for different environments and are determined by nonstandard variations of concrete space objects.

Question: Do you think it possible to make contact with extraterrestrial civilizations?
Answer: We have spoken of the difficulties involved in direct contact (mutual visits of worlds). Radio contact is much more promising. The possibility of making radio contact with extraterrestrial civilizations was first analyzed by Cocconi and Morrison; they suggested using the frequency of the hydrogen radio line: 8⅛ inches. The first steps in this direction were taken by Frank Drake (Ozma project). Suggestions have come from Soviet scientists Nikolai Kardashev, Vsevolod Troitsky, Vladimir Kotelnikov, Vladimir Siforov and others (see, for example, the collection *Extraterrestrial Civilizations*. Proceedings of the Byurakan Conference, May 20-23, 1964, Armenian Academy of Sciences Publishers, Yerevan, 1965).

It should be borne in mind that the construction of a communication system with extraterrestrial civilizations is a very particular problem. Communication systems are always designed as a unit, both transmitter and receiver, and are mutually coordinated. In a communication system between civilizations the situation is different. Neither partner knows what the other one is doing, and each can only make more or less plausible conjectures on the basis of which he tries to coordinate his actions with the actions of his partner. For example, the receiver may make certain conjectures regarding the system of transmission used by the sender and work out methods of reception to correspond. Similarly for the sender, he must make conjectures about the methods of reception the receiver will use. The result is a typical game situation. The rules of the game are established in this case by definite and objective laws of nature. Therefore, we can hope that the game is not infinite and that the problem has a solution.

Question: But do you think that a semantic contact is possible between civilizations?
Answer: That is a complex problem. If we assume that forms of life and intelligence in the Universe vary, this applies even more to forms of communities of complex systems, or civilizations. Theoretically, we can imagine civilizations which have developed along nontechnological lines. We can also imagine a difference not only in the means of internal communication between organisms in a civilized community (to put it more simply, its language) but also in their sense-making mechanism.

Even if we assume that there is a similarity between systems of concept and language means of two civilizations, the attempt to communicate through the semantic channel would involve vast difficulties. A thorough scientific analysis of the proposed "interstellar" languages for "cosmic communication" (for example, the well-known Linkos system developed by Hans Freudenthal) indicates that these forms of language system will not do, since they must be intelligible to a faraway communication partner who may have transcended the limits of language terms. That is, there should be at least graphic explanations of the semantic meaning of code signs.

It may be that no semantic contact between different civilizations is possible.

However, it should not be forgotten that apart from semantic understanding, a civilization seeking other civilizations has its basic cognitive tool: the direct investigation of behavior of complex civilization-type systems. Observing evidence of specific activity, we may, in principle, detect the existence of another highly organized system in the Universe.

Cybernetics offers us definite possibilities of making judgments on the mechanism of an emitting system by analyzing the signals reaching us from this system in the form of electromagnetic radiation. This kind of analysis may, for example, help us to find that an object under study has greater abilities than an ordinary physical object.

This approach rules out the ambiguity of interpreting phenomena by the dual classification: artificial or natural. Every phenomenon can be shown to possess certain concrete peculiarities of its mechanism. If we are able to prove that these peculiarities constitute a "quasi-civilizational complex system," only then will we be able to claim that we have discovered such a system.

In practical terms the solution is very difficult. Again vast distances in outer space have to be reckoned with. Of course, the astroengineering of complex systems can be observed more easily. Alas, there is no evidence that astroengineering is the norm of behavior of civilizations.

Progress in the search for sufficient criteria of high organization in outer space depends largely on progress in the corresponding scientific disciplines, mainly the fields of cybernetics investigating the difference between the "live" and the "dead," the "intelligent" and the "unintelligent."

Question: What consequences of contact with other civilizations can you perceive at this time?
Answer: We have seen that the existence of other intelligent worlds involves several problems which are not, in general, connected with the astronomical aspect of contacts. In a sense we can say that the first consequences of still unrealized contacts are already in evidence. We have started specifying our concepts of the origin and development of life on Earth, our very notions of "animate" and "intelligent," the ways to further develop our terrestrial civilization, the most general laws of this development which might prove to be quite typical of any "quasi civilization," and so on.

The discovery of highly organized systems in the Universe will be an event of immense scientific importance. It will enrich our knowledge and concretize our idea of the world, including the properties of the cosmic macroenvironment in which we live. However, this event cannot be expected very soon. Painstaking, humdrum observation will be needed to investigate the many cosmic phenomena with incomprehensible and mysterious properties, and certainly 99 per cent of these phenomena will be explained in natural astrophysical terms.

Should contact ever be established, it will certainly have a great impact on mankind, whether the contact is semantic or otherwise. There has been much speculation on the psychological shock which mankind will experience. The very fact that such contact has been established will undoubtedly have a profound influence on the religious views of people, for instance, and on ideology in general. The contact may lead to startling sociological changes. We have no way of forecasting what these changes will be.

Question: Will this contact help to unite mankind confronted by an alien intelligence, or will it intensify the contradictions in human society?
Answer: Unfortunately, the consequences of contact with extraterrestrial civilizations have not been thought through, although the problem is by no means academic. The dramatic discovery of pulsars points this up.

Question: Are we ready for contact with extraterrestrial civilizations?
Answer: The American writer Clifford Simak (see C. D. Simak, *All Flesh in Grass*, New York, 1965) concludes that we are not. It is quite possible that he is right. However, we should be mindful of the fact that the objective development of science and society always confronts us with unexpected problems, whether or not we are ready to solve them. Moreover, the emergence of these problems, independent of our subjective attitudes, shapes our psychology and determines the further course of history. Recall the consequences of the discovery of atomic energy. And who can say how transplanting human organs will transform our life style and psychology?

Anyway, these discoveries have been made and we cannot repeal them. Of course, the best plan is to prepare ourselves, at least theoretically, for surprise. From this it follows that the problem of extraterrestrial civilizations has profound and basic importance. Our awareness of its complexity will help cushion the shock should we stumble on an extraterrestrial civilization fantastically unlike ours.



Cosmonaut Gherman Titov's second job is assistant editor of the journal Aviation and Cosmonautics.





Evening tea and snacks at the Leonovs.

STELLAR TOWN: THEIR EARTHLY HOME

By Mikhail Rebrov

IT'S A HALF-HOUR DRIVE from Moscow to Stellar Town and pretty lonely driving alone. A boy thumbed a ride. Gherman Titov pulled up.

"Give me a lift, please!"

The cosmonaut opened the door; the boy got in and in a peremptory tone gave the order:

"Let's go!"

They rode in silence for a while; then the boy said:

"Cosmonauts drive along this road. They've given me lifts, too."

"Who, for instance?" inquired Titov.

"Gherman Stepanovich Titov," the boy answered.

"Do you know him?"

"Yes," answered the passenger offhandedly. "We're friends."

"Really?"

"He always stops when he sees me on the road. We talk about space, about rockets."

"Hm, so that's who you are. Well! You never know."

"Thanks, I get off here."

"Let's get acquainted first. What's your name?"

"Nikolai. . . ." The boy hesitated a little and added, "Semyonovich. But you can call me just Kolya."

"Why just, Nikolai Semyonovich?" the cosmonaut said seriously. "Let's use our full names. Mine is Gherman Stepanovich . . . Titov."

The boy blinked.

"Don't kid me. You're Titov? Let's see your papers."

The cosmonaut took out a certificate:

"Here!"

The boy opened the booklet carefully. Read. Said nothing for a while.

"I'm sorry. . . . I told a lie. Can I tell the kids in school that I rode in your car?"

"Of course you can. We're old friends, aren't we?"

Their Home Is the Planet Earth

"No other planet waits for us as this one . . . ."

This song is for those first men who were



A marriage literally made in heaven: cosmonauts Valentina Tereshkova and Andrian Nikolayev.



Music is the family hobby at the Pavel Belyayevs.



Local tennis champ is Yevgeni Khrunov, engineer-researcher of the Soyuz 5 mission.

homesick for Earth. Not just for their town, their friends, the land of their birth, but for Earth, their planet.

All those who have been out in space know that flights to the stars will never be easy. If for no other reason, because a spaceship cannot take along these elements of home: the wind, the pattering rain, birds, a cool stream, the vivid woods of autumn.

For the cosmonauts home is in Stellar Town. They have settled with their families in tall houses among the birches, pines and firs of this Moscow suburb. Every morning they leave to study or train; their wives leave for their jobs or keep house. The children go to school.

There is little free time. But what there is is used to the second.

Stern-looking Konstantin Feoktistov likes to let his imagination run wild telling funny stories, to play chess, to read and read.

Boris Yegorov, Master of Science (Medicine), roots like a boy for his favorite Moscow Spartak soccer team, goes in for mountain climbing and dashes about on his motorcycle every chance he gets.

Vladimir Shatalov's first love is underwater hunting.

Georgi Beregovoi makes amateur movies. Sometimes they all go hunting for wild boar or elk and follow up with a feast.

Pavel Popovich and his wife Marina sing old folk songs.

Singing is a popular pastime in Stellar Town.

In the Belyayev family everybody sang, musically or not, songs about Vologda, about people's lives, about nature in the harsh north country. Pavel Belyayev's mother and sisters all had their favorites, merry songs and sad ones, sung softly, with a lilt, accenting the "Os."

But that was a long time ago. Now the cosmonaut's daughters, Lyuda and Ira, make music for him. The ringing sounds of the piano fill the house. The father listens and smiles, remembering his own first chords on an accordion.

Alexei Leonov has his own avocation, far removed from cosmonautics, from the theory of rocket engines and the laws of celestial mechanics.

His friends call him an artist. But Alexei qualifies the title. He is not an artist-cosmonaut, but a cosmonaut-artist, he says—first things first. But an artist, even if he's not a great one. It helps him to see the unusual in the ordinary, to find both rigorous science and artistic harmony in the colors of a sunrise, to hear the message conveyed by mute things.

Alexei's books reflect his love for line and color: *Old Masters of Painting, Pushkin Illustrated, Landscapes of the Barbizon School, Bryullov, Shishkin, Dutch and Flemish Painting*. By their side stand *Introduction to Rocketry, The Theory of Engines, Astronomy* and *English Grammar*, evidence of his other interests.

Many pictures hang on the walls of his apartment. On easels stand unfinished studies: a landscape of the Moscow suburbs and a picture with a cosmic theme. In the bookcase there is a stack of pencil drawings.

Sometimes the cosmonauts put on hockey outfits. Stellar Town has a good proportion of players.

There was a cold snap that evening. The wind stung the face; the earlobes tingled. The temperature was below zero, but they played anyway and worked up their own heat and the inevitable "casualties" that testify to their passion for that rough game.

The earliest cosmonauts are called oldsters, and they have their own rituals—birthdays, for example. The hero of the occasion has to stand on his head in front of guests for as many seconds as he has years. The time increases with age, but the ritual is sacred. Many of the cosmonauts have been to India, where they picked up yoga.

Fun? Certainly. But then cosmonauts love to joke.

For instance, the Nikolayevs live in Apartment 12 and the next apartment is not 13 but 12(a). Why? Fun!

Devil's Dozen

After the Vostok flight in 1961, Yuri Gagarin was named Cosmonaut 1. Later Gherman Titov became Cosmonaut 2 and Andrian Nikolayev Cosmonaut 3. This year No. 13 was reached. One the eve of the launching of Soyuz 4 there were claims that 13 was a lucky number, and evidence was cited:

Ptolemy's famous astronomical work *Almagest* (written in the first century A.D.) consists of 13 volumes.

The thirteenth century included many landmarks in astronomical history; John Halifax's book *The Sphere* was published, for example.

The planet Uranus was discovered on the thirteenth of March 1781. Venus is 13 times as bright as Saturn. The first society in our country for the study of interplanetary travel was located at 13 Dzerzhinsky Street.

The first Soviet liquid fuel rocket, designated "Object 09," was put into production in factory No. 13. Many satellites of the Cosmos series (14th, 23rd, 45th, 147th, 253rd, 263rd) were launched on the thirteenth day of the month.

Vladimir Shatalov became Cosmonaut 13 (incidentally, he had often flown in airplanes numbered 13).

Add to the list the fact that the engineer on Soyuz 5, Alexei Yeliseyev, was born on the thirteenth of July. On that January day when Soyuz 5 was launched, the night temperature at the cosmodrome was 13 degrees (Centigrade) lower than the day temperature.

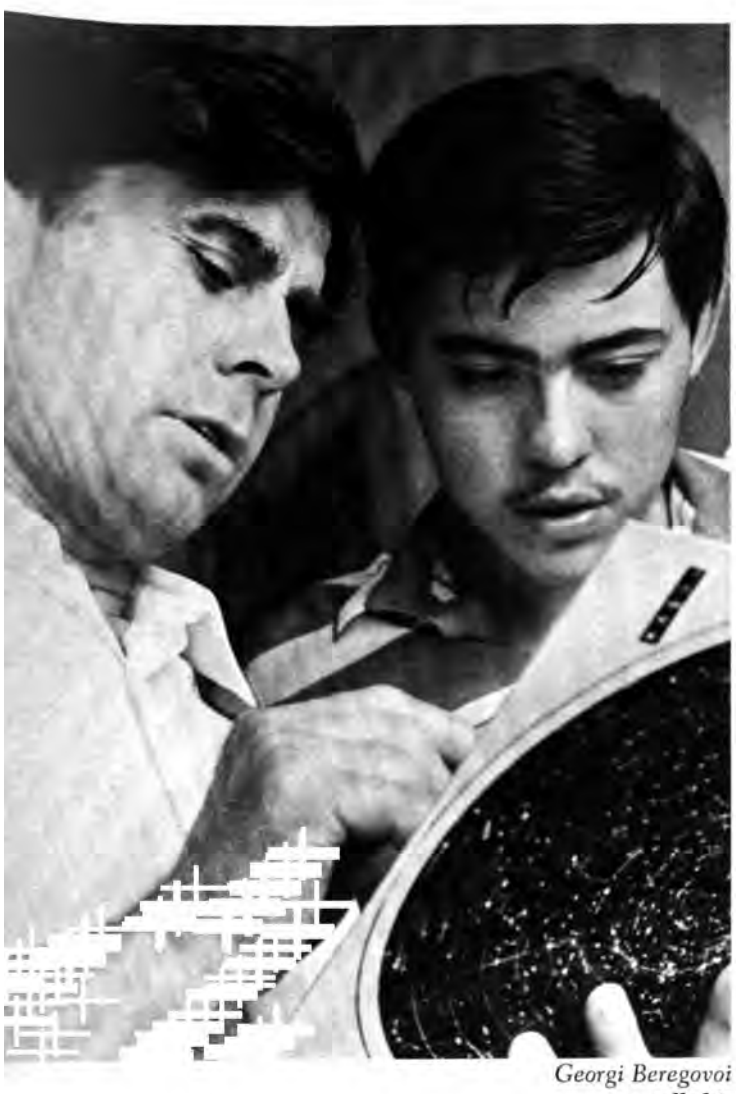
When the group of journalists who visited the cosmodrome was flying home, their takeoff time was 13 hours 00 minutes. More evidence. Whichever way you look at it, 13 is a lucky number.

* * *

In the center of Stellar Town is a huge panel made up of marble slabs. The names of the Soviet cosmonauts and the dates of their flights are inscribed in gold on the dark gray squares. Some of the slabs are blank—the chisel has not yet touched the polished surface of the hard stone, but it will before too long.

Gherman Titov likes the speed and hazards of hockey.





Georgi Beregovoi tells his teenage son what it's like to be adrift in the starry ocean.



Boris Yegorov in a not too frequent moment of relaxation.

MEETING ON A FAMILIAR PLANET



United Press Internationa

Soviet and American spacemen get together at the International Aeronautical and Space Show in Paris on June 2. Shaking hands in front of the Apollo 8 module, (from left) are David Scott, USA; Vladimir Shatalov, USSR; James McDivitt, USA; Alexei Yeliseyev, USSR, and Russell Schweickart of the USA.



Path of Glory

Leninsky Prospect has been since 1961 the path of glory for cosmonauts. Here, the motorcade with the first space trio: Feoktistov, Komarov and Yegorov.



EMOTIONS



AND OUTER SPACE

BY YURI GAGARIN AND VLADIMIR LEBEDEV

This is a chapter from *Psychology and the Cosmos* by cosmonaut Yuri Gagarin and medical researcher Vladimir Lebedev. It was published in 1968, after Gagarin's death.

NOT EVERY MAN can become a cosmonaut, but that does not mean that a space pilot has to be a superman. Cosmonauts are tough and tested people, but they are very human, subject to all the usual emotions. Like everybody else they have their moments of happiness, depression and alarm.

Some emotions mobilize all of a man's spiritual forces to cope with what seems at first an insoluble problem; other emotions do the reverse—they inhibit will and drive, make a man indecisive and helpless. Orbital flights and numerous terrestrial tests have proved that a cosmonaut, like a flier, is under great nervous strain, that the job calls for will power and emotional control of a very high order.

The research mission of a space flight, its exploration of hitherto unknown areas and phenomena will, of course, evoke feelings of exhilaration and excitement. But a flight is inevitably fraught with danger. Every space flight is a test flight with no guarantees.

This is what the director of the British experimental radioastronomical observatory said on the subject: "The risk is so great that a man has to call on an absolutely new, unprecedented kind of courage. The Russians and Americans have demonstrated this new kind of courage. Still we must realize that while the risk in coming out of a near-Earth orbit is great, the risk in landing on the Moon and coming back to Earth is simply infinite."

And this is how Andrian Nikolayev described his emotions on his return to Earth:

"It is very interesting to see your ship beginning to burn as it enters the denser layers of the atmosphere. Flames leap about in the portholes, and you hear things cracking. You think, 'What if a part of the ship's heat shield should come off?' But I know the ship's design and therefore there is no reason to have any doubts. I say to myself, 'Be calm, let it burn, it is normal landing procedure.' "

This testifies to the cosmonaut's control. This is precisely the kind of situation which requires an extraordinary effort of will to suppress natural alarm, if the cosmonaut is to make a rational estimate of the situation. Otherwise he becomes panicky, confused, unable to perform. Emotional weakness, inadequate response to stress mean a drastic falloff in quality of performance.

Fliers first had to learn to handle electronic equipment during the Second World War. They had to perform several operations simultaneously. Under great nervous tension, when they were attacked, for instance, they made blunders: forgot important calculations, arrived at inaccurate estimates, lost the ability to make a sober assessment of a situation.

There is considerable nervous tension, for example, in such an operation as refueling a plane in air. The pilot must execute an absolutely faultless maneuver to get into the refueling stream, otherwise the planes will collide. No wonder he will show psychological aberrations. The pulse will sometimes run as high as 145-160 beats a minute and with trainees even 180 beats, as much as 2-2½ times more than normal. The frequency of respiration increases correspondingly to 35 and 50 per minute (2½-3 times more than normal).

Maneuvering for a spaceship rendezvous and docking in orbit is much more complicated than refueling a plane in the air. The cosmonaut must use manual control to bring the ship to the object of docking. The closer the ships come the lower must be their speed, so that there will be no impact linking. The ship and the object of docking must be oriented to their linking units, another very difficult maneuver. Keep in mind that in outer space aerodynamic laws do not operate. And often the shortest way to dock is not along a straight line, but along a somewhat curved trajectory. Also, far from our planet, a different system of bearings must be used than the one we use on Earth.

The cosmonaut is subjected to almost incredible emotional strain in emergency situations, for instance, when he has to land his ship manually, because of a breakdown in the automation complex. Even the slightest inaccuracy in orienting when he switches on the retrorockets can carry the spaceship into an orbit from which it may not be able to return to Earth. Even with correct but extended orienting the ship could land in bad areas (mountains, taiga, ocean, desert).

We indicated earlier that during the landing procedures for one spaceship (Voskhod 2) one of the signals for switching on the automatic orienting system did not come through. Pavel Belyayev, in command of the ship, was instructed to make a manual landing. He analyzed the situation, oriented the ship and switched on the retrorockets at exactly the time calculated.

Belyayev was confident and cool when he carried out the maneuver—the result of his long professional experience: As a flier he had had good schooling in stress situations, and on many occasions he had been called on to respond to the dangerous and unexpected.

Once, as assistant commander of a squadron, he was taking a group of planes from an island to the mainland. Over the sea his engine started spluttering, and the fighter began losing altitude noticeably. Belyayev revved up the engine; it pulled poorly—there was not enough fuel. But the instruments showed that there was fuel in the tanks, fuel which for some reason was not flowing to the engine. He grabbed the handle of the wobble pump. The engine started working better, and the plane stopped losing altitude. And so Belyayev kept his left hand on the controls and used his right hand for the pump handle. From the outside, the flight looked very strange—the plane kept rocking all the time. And indeed, try to keep a plane in a straight line when one of your hands and your body have to keep moving up and back sharply. His hand turned so numb it refused to obey him. But he mustered all his will and energy and forced himself to pump, keep pumping; it was his only chance. When he finally landed and got out of the cockpit, his arm hung motionless; he tried to raise it but couldn't.

There was another case. In flight over the sea the weather suddenly turned bad. Belyayev had already carried out his assignment and was approaching his airfield when he saw the clouds closing in around the hilltops, and fog covering the ground.

Landing on that airfield was tricky. There were hills on both sides, and it was dangerous to swing in from beyond them in bad weather. The instructions of ground flight control were: "Land without maneuvering."

Belyayev explained afterward that there was no time to deliberate. He gunned the engine, pulled the stick toward him and then to one side, so as to make the landing maneuver, thinking: "Where are the hills? I hope I don't hit them!" In a fraction of a second he pictured the airfield area, recalled his former landing, and timed the operations: "I'm flying at such and such speed, there are three seconds of flight, then several more seconds of straight flight. . . ." His calculations were perfect. He saw neither the ground nor the hills, but the picture was all there in his razor-sharp mind.

He felt cold sweat trickling down his back, though only a minute before it had seemed to him that it was stuffy in the cockpit. . . . Now he would have to fly through the valley and around a hill. He looked at the clock. It was time for the last maneuver. He reduced the rpm and pushed the stick forward slightly. The plane began losing altitude. Through the mist and the fog he saw the red lights of the landing strip. It was not easy to make out, but he felt it coming closer. Finally the long-awaited bump, and the wheels started rolling on the ground. End of the tension.

There are cases—very rare, though—when the pilot becomes confused, with tragic consequences. Once a plane carrying two men besides the pilot caught fire. The pilot managed to save himself: He used the eiection seat in time, but the other crew members were killed, though they also had ejection seats. In the investigation that followed the pilot maintained that before he used the seat he had given the signal to abandon the plane. According to him, he received no answer, although he waited for it several minutes. In reality it came out that there were only a few seconds between the time he gave the signal and the time he used his ejection seat, not enough for the other members of the crew to abandon the plane. The nervous strain obviously distorted the pilot's idea of time, and so two people died.

We do not want to give the reader the impression that the dominant emotion of fliers and cosmonauts in dangerous situations is fear. Their emotions before and during the flight are mixed and complicated. There is the natural desire to understand the unknown, the feeling of duty and responsibility to their job, an element of the daredevil and fear. These are dynamic feelings which alternate or occur simultaneously, often at cross-purposes.

The dominant emotion of the first man in history to fly in orbit around the Earth was great joy that he was the one entrusted with the job. This is what he said in a statement before the launching.

"Dear friends, the ones I know and the ones I do not, my countrymen, people of all countries and continents!

"In a few minutes a powerful spaceship will carry me to the distant voids of the Universe. What can I say in these last minutes before blastoff? For me my whole life appears now like a preparation for this one instant. Everything I went through and did prior to this moment was done for its sake. You will understand that it is difficult for me to explain how I felt when I was chosen to make this flight, the first in human history. Was it joy? No, it was not only joy. Was it pride? No, it was not only pride. I had a feeling of great happiness at being the first man in space, the first man to engage nature in this unprecedented single combat. Can anyone hope for greater honor?

"Then I thought of the enormous responsibility. I was to be the first to do something generations of men had dreamed of doing. I was to be the first to blaze a trail into outer space. Could there be a more complex problem than the one I had been assigned to resolve? This was a responsibility not to a few dozen people, not to a single collective, it was a responsibility to the entire Soviet people, to its present and future. And if, despite all that, I venture to make this flight, I do it because I am a Communist and because I have behind me the unparalleled heroism of my compatriots—the Soviet people. This gives me the will to carry out my assignment to the best of my ability, to carry out the assignment of the Communist Party and the Soviet people.

"Am I happy that I am going to make a flight in space? Naturally I am, for in all times and centuries it has been man's greatest happiness to participate in great discoveries.

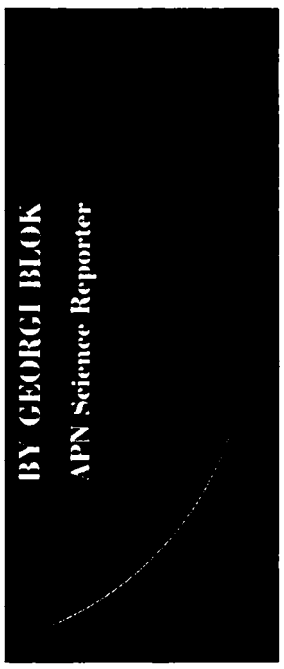
"I want to dedicate this first space flight to the people of Communism, to the society our people are in process of setting up, a society which, I am sure, will be set up by all the peoples of the globe.

"There are only a few minutes remaining before blastoff. Dear friends, I would like to say 'till we meet again,' as people do when they start on a long journey. I would like to embrace all of you, the ones I know and the ones I do not, people near and remote!

"Till we meet again, soon!"

METEOR IN ORBIT

BY GEORGI BLOK
APN Science Reporter



THE FIRST Soviet automatic weather forecaster, the Cosmos 122 artificial satellite, was placed in near-Earth orbit three years ago, in June 1966. Circling at an altitude of 390 miles, it again confirmed the old saying that "the spectator sees the game best."

It is more than two years since the experimental Meteor system began operating: man-made satellites of the Cosmos series, numbered 144, 156, 184, 206 and 226, replacing each other. The automatic observers, as they round our planet in what is close to polar orbit, gather information on atmospheric phenomena and transmit the data to ground tracking stations.

That was how space meteorology originated. Not so long ago scientists were skeptical of its possibilities. But practice very soon showed that the information supplied by weather satellites was indispensable. Daily forecasts have swept away all doubts—more than 80 per cent have been accurate.

What is the experimental Meteor system like? How does it operate? How accurate does it make weather forecasting? Do we have a long wait for a world weather service?

For answers to these questions I paid a visit to one of the two existing World Meteorological Centers of the Northern Hemisphere—the one in Moscow. There I met Professor Victor Bugayev, its director, the chief Soviet meteorologist and a specialist in numerical weather forecasts based on mathematical models.

Entire Planet Is Visible

Two walls in the director's office are lined with large oak bookcases on which are striking photographs of nature's formidable phenomena—the eye of a typhoon, the fluffy vortexes of cyclones, continuous clouds of atmospheric fronts. Very impressive, the "landscape" of our globe floating in the expanses of the solar system, the oceans and continents visible through "windows" in the clouds.

Nearby are two globes—a large and a small one—a selector communication desk and a model of the meteorological container of a Cosmos man-made Earth satellite with spread-out wings, one-fifth its actual size.

All this constitutes an invisible thread stretching into outer space with the "telescope eyes" of the researcher at the end of the thread. Pointing to the container, Professor Bugayev said:

"A weather satellite is probably the peak of meteorological technology. The ground network of meteorological and hydrological stations used to cover only a small part of the continents. The two-thirds of the planet that are covered by the world ocean remained a blank spot for researchers. And this applies to the Arctic and Antarctic, too. Now we have at our disposal not only pilot balloons and air reconnaissance, but also radar, electronic computers and modeling machines.

"No serious researcher can do without these completely reliable and foolproof machines today. Thanks to the ever growing speed of our electronic helpers, we can now deliver as 'perishable a product' as a weather forecast on time. The Soviet Union's Hydrometeocenter prepares forecasts in advance—three to five days and a month in advance, as well as long-range forecasts.

"Satellite information collected by the Meteor system yields the most important data for all types of weather forecasts. In addition to space observatories, this system includes ground stations for the reception, processing and circulation of data, as well as a service for checking the board systems and controls.

"An automatic weather satellite orbits the Earth in an hour and a half. With the inclination of the orbit plane to 81 degrees relative to the plane of the equator, the satellite scans a strip of the Earth's surface about 600 miles wide."

If You Open the Container

"If you look into the container, you will see a multitude of instruments and devices," Professor Bugayev went on. "They are all controlled from the Earth. The container's wings are retracted on liftoff, they open when the container detaches from the carrier rocket. The wings function as solar batteries which convert sunrays into the electric current that powers all the systems.

"The container is partitioned into two compartments. One of them houses the meteorological equipment, the other the control devices. A telemetric system connects them to ground stations which give all the commands.

"Oriented satellites of the Meteor system carry out a varied and extensive program of meteorological observations. They carry TV and infrared equipment to get images of clouds and the snow and ice cover in the visible and infrared areas of the spectrum.

"Actinometric devices measure the Earth's radiation, which gives us the temperature of clouds and the Earth's surface, as well as the radiation balance of the Earth-atmosphere system.

"Two TV cameras photograph the strip of the Earth's surface and clouds with a small overlap of adjacent shots. The resolving power of the telescopic lens gives clear images of clouds, their structure and vortexes. Satellite photographs make it possible for the forecaster to judge how and to where atmospheric fronts are moving and the origin of pressure systems, to analyze where it will rain or snow and where fog will settle, and to track the movement of ice fields.

"Infrared devices of the TV type detect and record on film the clouds on the night and day sides of the Earth. Since the film is sensitive to radiation fluxes in the atmosphere's 'permeability window,' within whose range there is practically no heat energy absorption, clouds can be located against the background of the Earth's surface.

"The panoramic shots radioed to Earth by the space weather forecaster resemble an endless band containing a record of what has been taking place in the air ocean and on the surface of the world ocean and land. Researchers can see with their own eyes how mighty typhoons originate in the Pacific, and storms and hurricanes in the Atlantic, how the outlines of ice hummocks in the Arctic and the snow cover in the mountains are changing."

The Planet's Radiation Balance

"The actinometric devices on weather satellites have complex duties. They measure the radiation coming from the Earth.

"With their special resolving power the actinometric instruments have a zone of vision 1,500 miles wide.

"The radiation flux from the Earth to outer space is measured in the spectral range of 0.3 to 30 microns.

"This makes it possible to study reflecting and heat-radiating properties of clouds and exposed surfaces of oceans and continents, and to determine the components of the Earth-atmosphere system's radiation balance. With actinometric studies we have been able to fill the first pages of the global heat balance of our planet."

Professor Bugayev pointed out that, "unfortunately, American weather satellites carry no actinometric equipment. This deprives meteorologists of the opportunity to make comparisons of the planet's radiation emission, important for compiling a forecast."

Satellites and Forecasts

"The stream of satellite information recorded on magnetic tape and photofilm is great indeed. A space telescopic lens supplies more information in a day than all the meteorological stations on the planet put together. This mass of information cannot be processed manually, with the ordinary mechanical arithmometers; the army of calculators would have to be enlarged many dozen times.

"True, photographs are still being decoded by visual methods. And not all the elements of the photo information lend themselves to decoding thus far. Forecasters are gradually learning to read photographs and to analyze the details of the picture of the atmosphere as photographed from above. The experience gained will be passed on to electronic computers and modeling machines."

Professor Bugayev gave some examples of weather forecasting practice and of discoveries made with the flying meteorological stations. For instance, they helped answer some of the unknowns about medium vortexes, small cloud vortexes which give rise to local storm winds. Forecasting these phenomena is very important for agriculture. They were undetectable by the ground weather network; now they no longer catch us by surprise.

With the help of the telescopic lens we have learned that cyclones—which are to blame for cloudy weather, rains and storms—often travel "in pairs," following each other. After a short clearing, the remnants of a dying cyclone form another, its descendant. This is an important piece of information for long-range forecasts.

Weather satellites help vessels on seas and oceans to bypass typhoons and tropical hurricanes. They plot the "roads" on the Northern Sea Route and locate passages in the ice. They provide the data with which the forecaster calculates how much moisture is stored in the mountains. That tells him how much water the rivers will supply the farmer and at what times.

Satellite information, after being processed and analyzed into usable shape, is circulated via communication channels to many foreign countries. It also goes to Washington, which has the same kind of World Meteorological Center as Moscow.

"My story would not be complete if I did not spend a minute on the future of the Meteor space system," the scientist went on. "It will become a truly worldwide system when four or five satellites in the near-Earth orbit, more extensive complexes of ground stations, and two or three more weather satellites at the altitude of tens of thousands miles, scanning half the planet each, start operating. Such a geosynchronous telescopic lens will be able to transmit, on request from Earth, a panoramic photograph of any half of our planet.

"By that time any air or sea navigator will be able to read TV and infrared photographs. Receiving equipment could even be installed on a yacht. The first specimens of these devices are already operating reliably and accurately today."

OUTER SPACE HELPS MAN

As space science develops and builds up its own arsenal of information, it draws on the knowledge accumulated by the other sciences. It repays the debt thus incurred by enriching our knowledge of physics, chemistry, biology, mathematics, radio engineering and electronics with its findings. How does man benefit from this interpenetration? Vasili Parin, eminent Soviet space biologist, answers the question.

BIOLOGICAL TELEMETERING is a new science that makes it possible to conduct research at distances of hundreds of miles. So far it is used mainly in outer space, but in the very near future it will surely be used in clinical practice. It is easy to imagine the radical change in the doctor's work when he is able to determine the patient's state in a matter of minutes as information from the hospital wards goes directly to the control panel in his office.

On April 12, 1961, Yuri Gagarin became the first man to travel in space. With each successive launching the flight program was more complicated and with it the tasks of biological research. New microminiature transducers and instruments were developed that transmitted very full and versatile information on the state of the organism without discomforting the cosmonaut. Many of these transducers and instruments subsequently came to be used in terrestrial medicine.

A miniature magnetoelectric transducer with a single transistor preamplifier made it possible to investigate the vibration of Gherman Titov's thorax during flight. The contraction function of the myocardium and the duration of the phases of the cardiac cycle were figured out from the readings thus obtained. The same transducer and the new method proper — seismocardiography — were also used on Earth in tending patients suffering from arteriosclerosis, myocardial infarction, hypertension and heart defects.

To investigate the vestibular apparatus during extended periods of weightlessness, the flight program of Andrian Nikolayev and Pavel Popovich included electrooculography, the recording of the measurements of the difference of action potentials of the front and rear poles of the pupil caused by eye movements. This recording was carried out with the help of the miniature electrodes fastened in plastic fixtures mounted on springs. Now a switch operated by eye movements is used in mechanical wheel chairs for paralyzed people, who drive the chair by shifting their eyes.

One could almost say that the medicine of the future is being born in outer space. At any rate, this is certainly true of medical electronics.

One of the most remarkable and promising discoveries is connected with the use of computers for improving the quality of the photographs of the Moon and planets. The same technique used clinically substantially improves the quality of the pictures obtained in X-raying patients.

Or take hearing aids whose current is supplied by the electricity of the human body in a closed circuit. This has made the conventional hearing-aid batteries unnecessary.

The new titanium alloy developed when an especially durable material was needed for mechanical supports in space is now used for the manufacture of artificial elbow and hip joints. And the special electrodes developed for objectively measuring the physical state of pilots and cosmonauts during flight are now used for determining how much therapeutic physical activity to prescribe for patients.

Of great importance in space medicine are the programs for automatic electronic instruments signaling certain ailments. These will certainly be used extensively in various branches of general medicine and will be of tremendous help to the physician.

Whereas in the first flights we only registered the reactions of the cosmonauts, we can now pretty much anticipate them. Naturally, actual flight experience and our learning how to simulate certain flight factors, such as acceleration and vibration, the lowering of barometric pressure and the restriction of movement, were necessary prerequisites.

When the crews of the spaceships Soyuz 4 and Soyuz 5 were establishing the world's first orbital automatic research station, we continually checked the state of health of space pilots Vladimir Shatalov, Boris Volynov, Yevgeni Khrunov and Alexei Yeliseyev. The main channels of information were radio conversations with the cosmonauts, telemetered observation of the crew and telemetered data on the microclimate in the cabin and the space suits.

Selected from the physiological investigations were the indices most rational for a short flight, especially those dealing with blood circulation and respiration. We received an electrocardiogram and seismocardiogram as well as a pneumogram of the cosmonauts. Simultaneously a short-wave telemetering system was used to receive pulse beat signals for each crew number.

During the walk which Yeliseyev and Khrunov made from one ship to another, Vladimir Shatalov and Boris Volynov helped the physicians by checking their comrades' pulse and temperature. The ground tests of the space suits guaranteed that they would divert the heat of the cosmonaut's body. But we do not as yet know enough about the expenditure of energy in weightlessness.

In space biology and medicine it is essential to be able to anticipate and prevent possible upsets in the health of the crew members and in the operation of the life support systems. Electronic computers can help in this. Hence, the automatic processing of medical information with an onboard computer is of great importance.

In the future the onboard computer will apparently not only be able to make a diagnosis, convey it to the crew and send it to the Earth, but will also render the necessary aid to the cosmonauts and prescribe medication. These investigations are extremely important to hospitals for automatically checking the reactions of patients during operations, automatically controlling the administering of anesthesia, and examining patients.

Yet it is man who will have to program the machine, and this calls for a thorough knowledge of the internal mechanisms which make it possible for the organism to readjust itself and adapt to completely new conditions. One of the main services of space research is that biotelemetering provides new data on healthy man who, paradoxically, has been studied much less than sick man. This knowledge is particularly indispensable now, when terrestrial medicine, too, places ever increasing emphasis on preventive measures. Research shows that the reserves of the human body are much greater and more diversified than people heretofore thought, and we must learn to use these reserves. This may very well be the key to relieving mankind of many ailments.

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November 12, 1965. *The Venera 2 automatic station was launched on an interplanetary trajectory. According to calculations, on February 27, 1966, the station flew past Venus at a minimum distance of 14,912 miles.*

November 16, 1965. *The automatic station Venera 3 was launched on an interplanetary trajectory. According to calculations the station reached Venus on March 1, 1966, the first man-made vehicle to reach another planet of the Solar System.*



Luna 9

January 31, 1966. *The Luna 9 automatic station was launched. On February 3 at 21 hours 45 minutes 30 seconds, the station made the world's first soft landing on the Moon and transmitted television pictures from its surface.*

February 22, 1966. *The Cosmos 110 satellite was launched with the dogs Veterok and Ugolyok on board. The satellite was in orbit for 22 days and was then returned to Earth. This experiment of record duration was to study the effect on animal organisms of space flight conditions and return to Earth.*



Luna 10

March 31, 1966. *The Luna 10 automatic station was launched on a trajectory to the Moon. On April 3 at 21 hours 44 minutes it became the world's first artificial Moon satellite.*

October 22, 1966. *The Luna 12 automatic*



The Moon as photographed by Luna 13. It was launched in December '66 and made a soft landing.

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An array of antennas at the Space Communications Center.

SPACE EXPLORED BY SEAGOING LABORATORIES

By IVAN PAPANIN

Doctor of Science (Geography)
Head of the Department
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USSR Academy of Sciences

The scientific research ship *Cosmonaut Vladimir Komarov.*



TWO DECADES AGO sea expeditions studied the ocean water, the ocean bed and the atmospheric layer touching the ocean. Today research vessel instruments permit scientists to penetrate deep into the ocean floor and extract ultrabasic rock, and to investigate all layers of the atmosphere over the ocean, to reach into the stratosphere and outer space.

Last year the vessels *Dolinsk, Bezhitsa, Ristna, Aksai, Morzhovets, Kegostrov,* Nevel, Borovichi and *Cosmonaut Vladimir Komarov* were added to the research fleet of the USSR Academy of Sciences.

Regular observations of the satellites and vehicles used for space exploration must be made from various parts of the world. The academy's research vessels make those observations in the Atlantic Ocean and the Indian Ocean.

The *Cosmonaut Vladimir Komarov* is fairly typical. This is the largest modern research vessel in the Soviet Union (displacement 19,690 tons, length 512 feet, beam 76 feet 4 inches and draft 28 feet 2 inches).

The ship carries 240 men (115 crew members and 125 scientific workers, engineers and technicians). She made her maiden voyage in autumn 1967 from Leningrad to the tropical zone of the west Atlantic and cruised the same waters in 1968.

The *Cosmonaut Vladimir Komarov* is equipped with sophisticated instruments to measure the parameters of movement of the Earth's man-made satellites and space vehicles, including probes of the Luna and Venus series, to receive information on the operation of instruments on board spacecraft, and to transmit that information to scientific centers in the Soviet Union.

The research fleet also makes studies of the upper layers of the atmosphere and the spread of radio waves. The volume of research is to be expanded. More specifically, some of the ships are incorporating into their research programs studies in physical oceanography, hydrochemistry and a number of the geophysical disciplines, primarily gravimetry and magnetometry.

"THE SOVIETS IN SPACE"

Joint NBC and Novosti Production Produced by George Vicas Narration by Kenneth Bernstein NBC Correspondent in Moscow

IN THE SPRING OF 1968 the TV screens of many countries featured *The Soviets in Space,* a documentary prepared jointly by NBC and the Novosti Press Agency TV Service.

The idea for such a program had been proposed by American, British, French and Japanese TV broadcasters.

After preparatory talks an NBC film team, headed by the gifted producer George Vicas, came to Moscow. Earlier the team had made such joint TV documentaries as *The Kremlin, Day in a Siberian City* and *Leningrad.*

Among the illustrious consultants on the film were Academicians Mstislav Keldysh and Anatoli Blagonravov; Colonel General Nikolai Kamanin of the Soviet Air Force, and cosmonauts Yuri Gagarin, Alexei Leonov and Konstantin Feoktistov.



Cameraman Dedo Weighert, narrator Kenneth Bernstein and producer George Vicas preparing to film *The Soviets in Space* at the Space Communications Center of the USSR Academy of Sciences.

Most of the filming was done by camera crews from NBC and Novosti TV. The NBC crew was the first foreign TV group to film Stellar City, where the Soviet cosmonauts live; the Space Communications Center of the USSR Academy of Sciences, and the facilities where the cosmonauts are trained. The Novosti crew shot scenes at the Baikonur Cosmodrome.

Kenneth Bernstein's narration underscored the point that this TV documentary was the first comprehensive presentation to Western televiewers of the Soviet space program.

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station was launched, placed in the orbit of a Moon satellite and photographed the Moon from that orbit.

December 21, 1966. *The Luna 13 automatic station was launched. It made a soft landing on the Moon on December 24 and made the world's first studies of the physical characteristics of its soil.*

April 23, 1967. *The manned spacecraft Soyuz 1 was launched to test the craft and perfect the space-borne system. Cosmonaut Vladimir Komarov carried out the test program and, approximately 27 hours after launching, took the craft out of orbit and returned to the atmosphere. As a result of faults in the parachute system, the craft descended at excessive speed. It crash-landed and the cosmonaut was killed.*

April 27, 1967. *The Cosmos 156 was launched and with the Cosmos 144, which had been launched earlier, on February 28, 1967, formed the Meteor meteorological system, later joined by other satellites.*

June 12, 1967. *The Venera 4 automatic station was launched on an interplanetary trajectory to Venus. On October 18, 1967, it made the world's first direct observations of the planet's atmosphere.*



Venera 4 began transmitting information about atmospheric conditions on Venus in October '67.

October 27, 1967. *The Cosmos 186 satellite was launched. On October 30, 1967, it carried out the world's first automatic docking maneuver with the Cosmos 188 satellite launched* **October 30.**

September 15, 1968. *The Zond 5 automatic station was launched on a trajectory round the Moon. Circling the Moon on September 18 at a minimum distance of 1,210 miles, the station returned to Earth on September 22, splashing down in the Indian Ocean. It was the first vehicle in space history to return to the Earth after circling the Moon.*



Photo of the Earth at 56,000 miles made by Zond 5, first vehicle to circle Moon and return.

CHIE
ROCKE
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DESIGNE
INTERVIEWE

BY LEV EKONOMOV

***Literaturnaya Gazeta* Correspondent**

Q: When did our country start doing space research?

A: The first rockets to investigate the upper layers of the atmosphere went up soon after the Second World War. But preparations for space flights started much earlier.

Problems involved in reaching very high altitudes with rockets were on the agenda of the First All-Union Conference for the Study of the Stratosphere organized by the USSR Academy of Sciences in Leningrad in 1934.

A special conference of the Jet Propulsion Institute and the Stratospheric Committee, held in Moscow in 1935, was devoted to the study of the atmosphere "with rockets." This world's first forum of rocket engineers resolved (as recorded in its minutes) to build a winged rocket-laboratory for high-altitude manned flights and a stratospheric rocket for research with automatic instruments.

But it was not until October 4, 1957 that the chains of gravitation were broken. A new era—the space era—opened. The first satellite was followed by a second and a third. By now, more than 250 Cosmos satellites alone have been placed in various round-the-Earth orbits by rockets of different carrying capacities.

Q: When rocket construction was in its infancy, many people did not believe that interplanetary travel was possible. How was this pessimism broken down?

A: Well, there are always trail blazers, enthusiasts, pioneers. Konstantin Tsiolkovsky called such people "forerunners." And who is an enthusiast? A man inspire by an idea, the interplanetary travel id in this case, a man with enough faith the idea to infect others.

Nikolai Kibalchich, Konstantin Tsi kovsky, Yuri Kondratyuk, Friedrich Tsa der, Nikolai Rynin, Yakov Perelman— of them were great enthusiasts. They fused to admit defeat, they lecture wrote. Y. Perelman's excellent book *terplanetary Travel,* published in 19 ran through 10 editions. Tsiolkovs thought highly of it. Many people beca space conscious after reading the bo I myself was influenced by it and ev met its author.

As for concerted efforts to tackle problems of interplanetary travel, th were such efforts way back in the e years of Soviet power. An interplanet travel section was set up in 1924 un the Zhukovsky Air Force Academy. T same year the section was reorgani as the Society for Interplanetary Tra Study with Grigori Kramarov as ch man. The lectures delivered by memb of this society; the debates it held; first international exhibition of interpl etary spacecraft, organized by memb of the Inventors' Association, which d played the work of Kibalchich, Tsiolk sky, Tsander and other Russian scienti and inventors (Moscow, 1927)—the were the first practical steps to bring gether jet propulsion and space flig enthusiasts.

Q: Have many ideas of the theoretici of cosmonautics and rocketry been re ized?

A: Many of Tsiolkovsky's ideas have been applied. His rocket principle of movement in airless space is actually the only one we have had thus far. His ideas on fuels, gas rudders, artificial Earth satellites, and so on have also been applied.

We have utilized the ideas of Ukrainian scientist Yuri Kondratyuk. As far back as 1916-1919 he was working on basic problems of rocketry and the slowdown of a rocket's flight on its descent to Earth.

Tsiolkovsky's ideas on fitting out rockets with atomic and electric engines, on organizing production in space and tapping its power resources, on industrial construction in space, on exploring the planets of the solar system and exploiting their mineral wealth are becoming increasingly current.

Kondratyuk's ideas for interchange stations circling the Moon and the use of artificial satellites as interplanetary refueling stations are worth looking into.

Today we are even taking a new look at the fantastic prophecies of scientist-philosopher Nikolai Fyodorov, one of Tsiolkovsky's teachers, who called for "spreading the area of human endeavor to the stars." "Human activity," he wrote in his *Philosophy of the Common Cause,* "should be scaled to the Universe." He dreamed of the time when "people will sow the seeds of their work far beyond the confines of our planet by aero- and cosmonautical media." Man, he said, "will learn to rejuvenate dying worlds."

His amazingly bold ideas strike a responsive chord in modern scientists.

New proposals and projects worked out by scientists, designers and engineers would fill several books. Researchers are looking into such ideas as the possibility of moving industries which present health hazards off the Earth, farming in outer space, tapping the mineral resources of other planets, simulating Earth conditions on those planets.

There are even suggestions that in the future, when it becomes necessary, our Earth, complete with the Sun and all the planets revolving around it, could be turned into a spaceship.

Q: Can we do without space exploration?
A: Once upon a time, when man had not yet evolved, the boldest inhabitants of the sea ventured onto dry land to broaden their environment. They found the alien medium tough going. Some gave up and went back to their native element. They are still there—I'm talking of the dolphins. From among those who left the sea for good, people evolved. That is what some leading scientists think, at any rate. But even if this is only a beautiful tale, it has a great deal of meaning. If we become frightened of venturing into a new medium, we may share the fate of the dolphin and arrest our development.

Q: Besides its values, doesn't space with its energy possibilities have certain dangers, considering mankind's misuse of so many of nature's gifts?
A: We must have a harmonious development of all our faculties. The exploration of space and the mastery of its energy sources make man so powerful that to use his potentialities rationally he will have to grow much faster as a social and ethical being. This is an absolute necessity. If he does not, the consequences are too grim to contemplate.

We must believe in a happy future for mankind no matter what obstacles stand in the way.

October 26, 1968. *The manned spaceship Soyuz 3 was launched to test the craft and perfect its space-borne systems. Cosmonaut Georgi Beregovoi performed various maneuvers in orbit; in particular, he approached the unmanned spacecraft Soyuz 2 launched* ***October 25.*** Beregovoi's *space flight lasted 95 hours 53 minutes.*



Cosmonaut Georgi Beregovoi in Soyuz 3 maneuvered and closed in on Soyuz 2 by manual control.

November 10, 1968. *The Zond 6 automatic station was launched on a Moon-circling trajectory, flying round the Moon on November 14 at a minimum distance of 1,500 miles. Utilizing its aerodynamic properties, the station reentered the atmosphere and made a soft landing in a predetermined area of the Soviet Union on November 17.*

January 5, 1969. *The Venera 5 automatic station was launched on an interplanetary trajectory. Having flown 217,480,000 miles in 130 days, it made a smooth parachute descent into the Venusian atmosphere on May 16. During the 53-minute descent, measurements of the atmospheric temperature, pressure and chemical composition were made.*

January 10, 1969. *The Venera 6 was launched. It entered the Venusian atmosphere on May 17, 1969, approximately 186 miles from Venera 5's entry place. During Venera 6's 51-minute descent, atmospheric measurements similar to the Venera 5's were taken.*



Cosmonautical quartet: Alexei Yeliseyev, Boris Volynov, Vladimir Shatalov, Yevgeni Khrunov.

January 14, 1969. *The Soyuz 4 manned spaceship was launched with cosmonaut Vladimir Shatalov on board. On January 16 Shatalov, by manual control, docked with the spaceship Soyuz 5, launched* ***January 15, 1969,*** *with cosmonauts Boris Volynov, Yevgeni Khrunov and Alexei Yeliseyev on board. For the first time two manned spacecraft were docked, thus forming the first experimental manned orbital station. After the two craft were docked, cosmonauts Khrunov and Yeliseyev transferred by way of open space from spaceship Soyuz 5 to spaceship Soyuz 4 . The two cosmonauts walked in open space for about an hour. A few hours later the satellites undocked and landed on January 17 and 18, respectively. Vladimir Shatalov spent 71 hours 14 minutes in space, Boris Volynov 72 hours 46 minutes, Yevgeni Khrunov and Alexei Yeliseyev 47 hours 39 minutes each.*

T Minus Zero

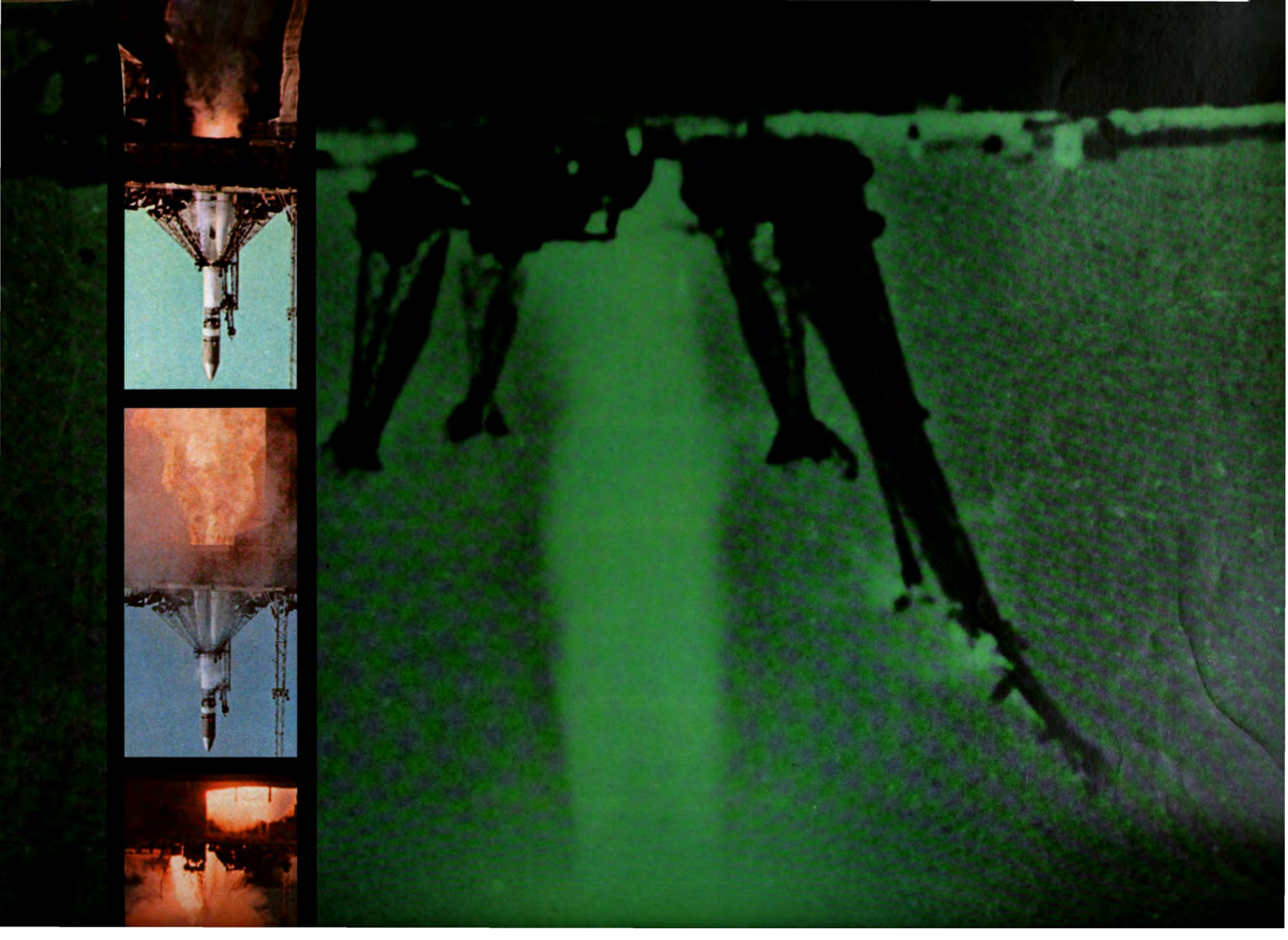
There she goes! The thrilling moment for Baikonur space scientists—and for millions who followed the takeoff on TV—as this mighty Vostok was launched.











LUNA: THE SEVENTH CONTINENT

Movements of the Earth and Moon crusts are synchronized.
The Himalayas and the lunar crater Aristarchus were born simultaneously.
Thermonuclear fusion and radioactive fission do not totally account for the energy of cosmic bodies.
Time is an active factor in the Universe.
Thermal death of the Universe is impossible.
These are the highlights of an article by Nikolai Kozyrev, Doctor of Science (Physico-Mathematics), which follows.

Among the physical signs of the globe's tectonic activity that can be measured qualitatively, the most striking are earthquakes. On the Moon, such a sign can be any of the phenomena observed on its surface.

A comprehensive catalogue of these phenomena was recently published by American astronomer Barbara Middlehurst.



Earth and Moon: A Celestial Unit

Since 1904, scientists have been registering every earthquake on the globe. Singled out were those that derived from tectonic processes of close to global scope, that is, earthquakes of great magnitude and with deep-lying centers. The register totaled 630 quakes, all of which took place between 1904 and 1967. In the Middlehurst catalogue about 370 phenomena were marked in the same period on the Moon.

The Earth and Moon are a system of bodies which are under strong tidal, that is, gravitational influence from each other. Under the influence of lunar tides the Earth crust makes elastic, undelayed 12-hour fluctuations with an amplitude of about 7 inches. And the Earth's tidal influence on the Moon should be much greater. The level of the tide is determined by the ratio of the potential of tide-forming forces to the force of gravity. This potential is in proportion to the square of the body's radius and to the mass of the other interacting body. That is why the potential of tidal forces on the Moon is five times as large as on the Earth. The force of gravity on the Moon is six times smaller. Hence it follows that the deformation of the lunar surface should be 30 times as great as the deformation of the Earth surface, amounting to approximately 19 feet. Yet, due to the Moon's synodical revolution and its rotation around the Earth, the fluctuations of the level of the tidal wave, that is, the fluctuations of the lunar crust, can take place only as a result of the change in the distance from the Moon to the Earth. This distance, due to substantial eccentricity[2] of the lunar orbit, changes on an average of 24,850 miles, which is about one-tenth of the average distance. The change in the potential of the tidal forces is inverse to the cube of the distance and therefore amounts to approximately three-tenths of its average magnitude. That is why one can expect fluctuations of the lunar crust with a period amounting to an anomalistic month—whose average length is 27.55 (mean solar) days—and with an amplitude of about 6½ feet. Naturally, these estimates hold good granted the mechanical properties of the lunar and terrestrial surface are the same.

The change of geocentric distances of the Moon should create in the fluctuations of the Earth crust changes of the same three-tenths of their average magnitude. Consequently, there should be lengthy (lasting an anomalistic month) fluctuations of the Earth crust with an amplitude of about 2¼ inches. For the Earth crust, equally and perhaps even slightly more important is the combination of lunar and solar tides, whose magnitude is five-elevenths of the lunar tides. In syzygies[3] the fluctuations of the crust should be 3½ inches greater and in quadratures[4] 3½ inches less than the average fluctuations. Thus, we have another lengthy period amounting to a half of the synodical month (that is, one half of 29½ days). It is quite possible that these two periods affect in some measure the Earth's tectonic activity and specifically the frequency of earthquakes. Simple mathematical estimates show us that favorable times for earthquakes are not only the days of the Earth crust's maximal tides but also the days immediately thereafter. Thus, maximal tides in some measure violate the state of the globe's outer layers, and this retains the favorable conditions for earthquakes for approximately a month.

Speaking of the synchronic nature of tectonic activity on the Earth and the Moon, we notice a certain shift of one or two days in lunar phenomena, in advance of earthquakes. If this shift is real, it can be explained by the greater tidal influence of the Earth on the Moon, causing a more rapid (than on the Earth) reaction of the outer layers of the Moon. Maximal phenomena in the perigee are apparently explained by the lessening of the crust's strength during maximal tide. Other maximal phenomena are apparently also connected with the state of the crust and mantle during rapid changes of tidal stress and maximal compression, near apogee. These phenomena are indications of the affinity of the mechanical properties of the Earth's and Moon's outer layers.

Apart from the statistical connection of tectonic phenomena on the Moon and Earth (which is seen from the gravitational interaction of these bodies), tectonic phenomena of of the Moon and Earth also have direct genetic connections.

Consider, for instance, the phenomena which took place in 1897. That year there were four devastating earthquakes with a magnitude of more than 8.5: the great Indian earthquake of June 12 and the earthquakes of August 5 and September 20 and 21. The initial Middlehurst catalogue is the first to indicate that a phenomenon took place on the Moon then, on September 21. The second catalogue offers information on four phenomena: June 14, September 21, October 8 to 15, and December 9. It would be unjustified to assume that the lunar phenomena of June 14 and September 21 and the earthquakes of June 12, September 20 and 21 were purely coincidental. This is more likely a case of direct causative connection between phenomena on the globe and the Moon, a connection which should be studied.

[1] Nikolai Kozyrev was born in 1908. He graduated from Leningrad University in 1928 and received his Doctor of Science degree in 1948. In the 30s he evolved the theory of extended atmospheres of the stars. Subsequently, his work on the physics of planets, especially Venus and Mars, was widely acknowledged. So were his spectral investigations of gas emission from the lunar crater Alphonsus and the spectral investigations he made of volcanoes on Kamchatka, for comparison. In the past several years Kozyrev has been working on a theory of causative or nonsymmetric mechanics. Presently he heads a laboratory at the Pulkovo Observatory. This article is an abridgment of one he wrote for a scientific journal.

[2] Eccentricity is a constant magnitude characterizing conic-shaped departures from the sphere, that is, ellipses, parabolas, and hyperbolas.

[3] Syzygies are the points at which the Moon is most nearly in a line with the Earth and Sun. They correspond with the periods of new Moon and full Moon.

[4] A quadrature is a position of the Sun, the Earth and in this case the Moon when the line connecting the centers of the Earth and the Sun forms a right angle to the line of the centers of the Earth and the Moon.

Cosmic Interplay and Its Nature

The maximum number of lunar phenomena occurring approximately two days after earthquakes shows that the process in the outer layers of the Earth is the direct cause of a similar process in outer layers of the Moon. As for the maximum number of lunar phenomena preceding earthquakes, that can be explained in two ways. First, that before the earthquakes begin, there are global processes which affect the surface of the Moon and manifest themselves there earlier than on the surface of the Earth. The behavior of animals before earthquakes testifies to some preliminary phenomena. The second and simpler explanation is that not only does the Earth influence the Moon, but the Moon influences the Earth as well. In that case the preceding maximum will not be the maximum of lunar phenomena before earthquakes, but the maximum of the number of earthquakes after the lunar phenomena. Thus, we have approximately the same lag in the cause-effect relations between the Earth and Moon.

The coincidence of lunar phenomena with earthquakes can, for the most part, take place only under specially favorable conditions of strong fluctuation of Earth and Moon crust under tidal influence. Had the preceding maximum been connected with the peculiar apprehension of earthquakes, then the same or even more favorable conditions would have been necessary for phenomena corresponding to it. In reality, these phenomena occur under almost the same conditions as the phenomena of the following maximum. Hence we can confidently conclude that our second explanation is the right one—the preceding maximum occurs as the result of the influence of lunar processes on the Earth's outer layers. Hence we can draw the conclusion that the influence of the processes taking place on the Moon as regards the Earth is almost the same as the influence of the Earth processes on the Moon.

The symmetric lag of two or three days in the reciprocal influence of terrestrial or lunar processes shows that the connection of lunar phenomena with earthquakes cannot be relegated to some outer cause affecting the Moon and Earth simultaneously, for instance, solar activity. Incidentally, in the distribution of lunar phenomena no influence of solar activity has been discovered. And in the statistics of earthquakes this influence is manifest only in microseismic phenomena. There is one more factor. On days relatively far removed from earthquakes there is a secondary growth: A number of lunar phenomena occur on the thirteenth-fourteenth day prior to or following the earthquakes. This is particularly striking in relation to the phenomena caused by the influence of the Earth on the Moon. Apparently these secondary maximums are realistic, and it is probably no accident that they are removed from earthquakes by a half period of the Moon's rotation. Hence, regardless of when the lunar phenomena or earthquakes take place, half a month later we once again have a moment favorable for these phenomena. This apparently means that secondary maximums, like main maximums, have a causal relation to earthquakes. However, the nature of this two-week lag is unclear. It is hard to imagine physical conditions inside the Moon and Earth that could produce this rhythm.

The close connection between lunar phenomena and earthquakes cannot be explained by a tidal interaction of the Moon and Earth that almost simultaneously creates the favorable conditions. Assessment of the number of lunar phenomena and earthquakes depending on the position of the Moon in orbit shows that the triggering mechanism of tidal interaction does really exist. This mechanism operates through the increase, simultaneously for the Moon and Earth, of the probability of events, and it is demonstrated by the statistics compiled for a large number of anomalistic periods. Consequently, independent of each other, the triggering mechanisms of tidal interaction of the Moon and Earth also have affinity, just as there are direct connections between tectonic processes on these bodies.

Very much apparent in the double planet Earth-Moon is the possibility of such connection; its signs are characteristic of the systems of double stars also. Even in the distant visual pairs, when there is no possibility of connection via gravitation or other fields of force, the main star has a kind of influence on its satellite. The satellite becomes more radiant; a leveling out is observed of the spectral types of components, that is, of the density of energy fluxes coming from the surface of these bodies. It is interesting that this latter quality is seen in the Earth-Moon system, too. The density of the heat flux coming from the surface of the Moon, according to measurements taken by Vladimir Krotikov and Vsevolod Troitsky, is $1.3.10^{-6}$cal/cm²sec, and this almost exactly coincides with the density of the heat flux of the Earth: $1.4.10^{-6}$cal/cm²sec. All these circumstances indicate that the problem of power production of the celestial bodies is not resolved by thermonuclear reactions in the stars and fission of radioactive elements in the planets. This conclusion has now been interestingly confirmed by the negative results of the experiments of R. Davis; they did not show the expected quality of nutrino coming from the Sun.

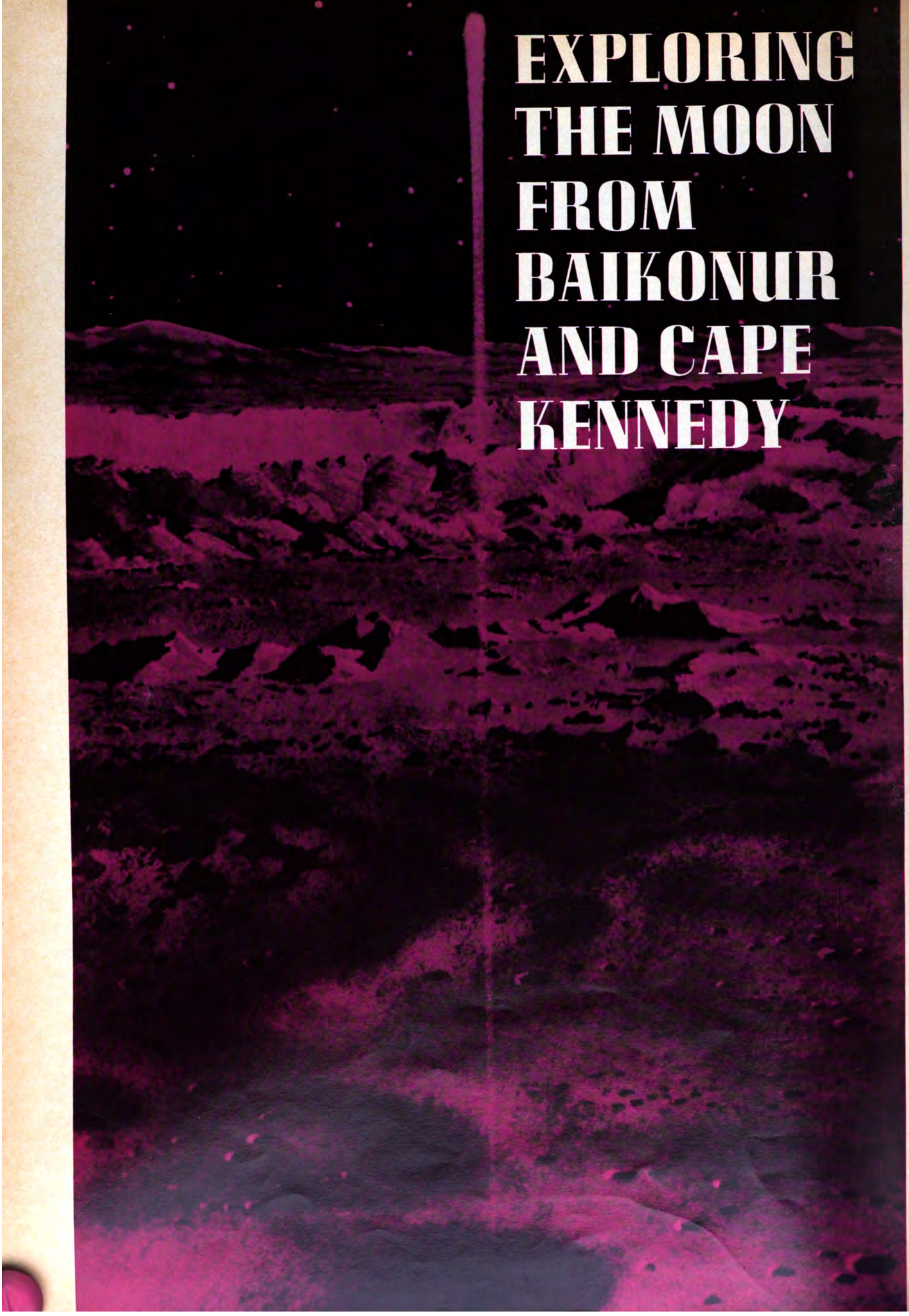
The Link Between Systems

Objective analysis of the main characteristics of the stars —mass, radiance and radius—makes it possible to conclude that stellar configurations lack the restrictions which should be part of the sources of energy which are independent of heat transmission. The production and transmission of energy proved a single process in the stars, as is the case in the cooling of bodies. Yet, the stars do not cool and thereby do not change into a state of balance with the space surrounding them.

Thus, the radiance of the stars is a special case of a general and very profound quality of the Universe precluding the possibility of balanced states, that is, the possibility of heat death. The absence of balanced states means that in the systems of the Universe there is always a difference between the past and the future. Such a general principle is possible if time itself has an objective quality of action independent of our psychology, a quality distinguishing the past from the future. The realistic and objective nature of existence of such time qualities as direction and density means that these qualities should be manifest in material systems. Time becomes not merely one of the components of the four-dimensional arena in which the events of the Universe take place, but an active participant in these events. In other words, time may be the vehicle of communication between processes taking place in systems at varying distances from each other. The smaller the distance between the systems, the more noticeable should be their interaction. That is why the affinity of the physical qualities of double stars' components is a good illustration of reciprocal interaction of processes. And now in the Earth-Moon system we see an even more vivid manifestation of these contacts.

In analyzing the closely related (as to time) manifestation of tectonic events on the Earth and Moon as a consequence of the physical law of relationship between processes, we come to an important conclusion: The growth of activity of one of the bodies should be accompanied by the growth of activity of the other body. As far back as 1949, Alexander Khabakov used morphological analysis to discover that in the history of development of lunar surface orogenesis[5] cycles occurred, similar to the orogenesis cycles on the Earth. Now one can take another step and maintain that there is a synchronic quality in these cycles. Therefore, there is an opportunity to figure out the chronology of tectonic processes on the Moon proceeding from the history of the Earth. The latest great mountain formation period of alpine type on the Earth should coincide chronologically with the latest Copernicus period in the history of the Moon. Accordingly, Copernicus, Tycho, Aristarchus and other craters with ray systems appeared on the Moon simultaneously with formation of the Alps, the Caucasus and the Himalayas, approximately 20 million years ago. Tectonic processes on the Earth and Moon are connected with each other as though the Moon were in direct contact with the Earth, that is, as if it were our seventh continent. This contact is established by endlessly moving time, and it is through this medium that the Earth, as the more massive body, maintains the Moon's power production and its cosmic life.

[5] Orogenesis is the process of mountain formation.


EXPLORING
THE MOON
FROM
BAIKONUR
AND CAPE
KENNEDY

The Moon, Earth's closest neighbor, has long ceased to be an object of study by ground observers alone. The space age has ushered in a period of experimental exploration of this Earth satellite with the help of automatic probes and lunar expeditions. What new things have been learned about the Moon in the last few years? This question is answered below by a prominent Soviet journalist, Valentin Mikhailov, who has written several books on space research, including* Man Strides Into Space, As Told by Space Pilots *and* Three Buddies *(about Feoktistov, Komarov and Yegorov).

Mikhailov is presently working on a new book, dealing with lunar explorations carried out by automatic probes. This work is being prepared for publication by the Novosti Press Agency (APN) Publishing House.

FROM THE BEGINNING of the space age, scientists planned to use automatic space probes in exploring the Moon. Lunar studies with this new equipment were regarded by scientists in both the Soviet Union and the United States as an essential step toward knowledge of the solar system.

The scientists were interested in a possible lunar magnetic field, and also in the Moon's gravitational field, the structure of its crust, and composition of the gas envelope in near-lunar regions. These could shed light on the processes of the Moon's formation and on its cosmogonic history.

Lunar exploration with the aid of space probes began on October 11, 1958, when the first of the American Pioneer spacecraft was launched from Cape Kennedy (then Canaveral). But technical malfunctions prevented this and later Pioneer probes, launched in the period 1958-1959, from supplying hoped-for data.

Flights of the Soviet Union's Luna automatic probes started in 1959. Luna 1 blasted off on January 2 and passed within 3,728 miles of the Moon; Luna 2 reached the Moon's surface at the Autolycus Crater, in the vicinity of Mare Imbrium, 500 miles from the center of the lunar disk, on September 14. Both of these mooncraft carried magnetometers to measure the intensity of the magnetic field in the area of the Moon, charged particle counters to determine the intensity of cosmic radiation, instruments to investigate the composition of cosmic rays, and proton traps to ascertain the composition of the gas medium through the entire flight.

Soviet scientists launched the Luna 3 automatic probe on a round-the-Moon flight on October 4 to take pictures of the reverse side of that celestial body. The pictures showed for the first time about 60 per cent of that side of the Moon which had seemed hidden from the human eye forever. They also established that the greater part of the Moon's invisible hemisphere consisted of continental areas with high reflectiveness and a large number of craters, frequently superimposed; the earlier hypothesis that an extensive "ocean of the reverse side" existed on the back side of the Moon was disproved.

Another 35 per cent of the invisible side of the Moon was snapped by the cameras on board the Soviet Zond 3 spacecraft in 1965. Pictures of practically the whole of the back side of the Moon had now been relayed to Earth by Soviet automatic probes.

It became clear to the scientists that the southern and northern continental regions of the visible hemisphere are parts of a single continental massif occupying the greater part of the lunar surface. A new kind of formation, thalassoids—depressions hundreds of miles in diameter with a bright continental-type bottom—and a chain of craters, exceptional in length (about 620 miles) and number (about 40), were discovered on the reverse side of the Moon.

The years 1966 and 1967 saw a global picture of the Moon taken by electronic cameras in the U.S. Lunar Orbiters. People on Earth became acquainted with illustrations of the surface of the Moon's visible and invisible sides.

The Structure of the Lunar Crust

What is the surface layer of the Moon composed of? What are its physicomechanical characteristics and its color? Almost every explorer has his individual opinion.

Some claim that the lunar crust is of sedimentary origin, that is, a product of the destruction of rock. Others see it as a kind of volcanic lava in the form of unstable slag, while Thomas Gould of the Harvard Observatory stated back in 1958 that considerable expanses of the Moon are covered by a layer of very fine dust several miles thick in some places.

The picture was hardly clarified by the U.S. Ranger probes, which were supposed to yield answers to these questions. As an American astronomer wittily put it, the TV pictures of the lunar surface obtained by Ranger cameras served as a mirror in which each scientist saw the reflection of his own theory.

Credit for obtaining the first direct information about the Moon's surface belongs to the Soviet Luna 9 automatic probe which, on February 3, 1966, for the first time in space history, made a soft landing on the Moon. The probe's TV camera sent back clear pictures of the lunar surface from a distance of about five feet. Exploration of the Moon was continued by the U.S. Surveyor 1 probe, which made a soft landing on the lunar surface on June 2, 1966. Neither Luna 9 nor Surveyor 1 sank into the ground.

In December of that year, the data acquired by the Luna 9 and Surveyor 1 cameras was supplemented with information obtained by Luna 13. A dynamograph, recording the stresses which occurred upon Luna 13's impact, supplied additional data concerning the physicomechanical characteristics of the lunar soil. A ground-testing device measured the crust's carrying capacity, and a radiation density meter determined the specific gravity of lunar rock.

The probes confirmed the astronomers' conclusions that the Moon's surface is corroded and porous. It is also rough—some particles are more than one-tenth of an inch in size. The particles form larger groups measuring one inch and more. The top crust of lunar soil, several inches thick, is not too firm and will depress even under the insignificant weight of a man in a space suit. At the same time, there are no sizable dust layers on either the maritime or continental parts of the Moon. It was also established that the mechanical properties of the Moon's soil to a depth of about one foot are almost the same as those of terrestrial soil of average density. The density of surface lunar rock is similar to that of porous or poorly-cohering granular rock; it does not exceed 1 g/cm^3. Measurements of radiation intensity on the Moon's surface showed that radiation is mainly determined by cosmic rays, with the dose amounting to 30 millirads per day.

In April 1966, the gammameter on the first artificial Moon satellite, the Luna 10, relayed the first information on the chemical composition of lunar soil.

It turned out that the content of natural radioactive elements in lunar rock resembles that of the Earth's basaltic rock.

In the period 1967-1968, scientific knowledge of the Moon was further enriched by the exploratory work of Surveyor 3, 5, 6, and 7. The three last-mentioned probes were the first to make chemical analyses of lunar soil with the help of automatic laboratories, which observed the characteristic scattering of alpha ray particles from the Moon's surface. These analyses confirmed that "the greater part of the lunar surface material is much like terrestrial basalt."

The American scientists ascertained the color of lunar soil: It proved to be grayish-brown.

The Moon's Gravitational Field

Automatic probes have also given scientists more exact information on the gas envelope encircling the Moon, on the lunar gravitational field and the numerical values of its potential of coefficients, and on the degree of danger from meteors in near-lunar orbit. These questions were answered largely by three Soviet luniks, Luna 10, 11 and 12, in 1966 and by the American Lunar Orbiter probes in 1966 and 1967.

The Luna 10 automatic probe, for instance, confirmed the absence on the Moon of any atmosphere whatsoever and established that the near-lunar regions have low energy ions as well as mildly penetrating radiation. The probe's instruments also measured the degree of this radiation, which proved to be 100,000 times less than that of the Earth's radiation belts. At the same time, the instruments ascertained that the intensity of gamma rays emitted by the Moon's surface is somewhat higher than that of gamma radiations at the surface of the Earth. Its average is 20-30 microroentgens/hr. About 90 per cent of the Moon's overall gamma radiation is the result of cosmic rays' interaction with lunar material. Measurements taken over various parts of the lunar surface, including the areas of lunar "continents" and "seas," showed that no noticeable difference exists in the level of gamma radiation intensity over these regions.

The micrometeorite counters set up aboard the Luna 10 established that a hundred times more micrometeorites pass through each 10.7 square feet per second in near-lunar space than through interplanetary regions.

The Luna 10 magnetometer, 15 times more sensitive than the one installed on Luna 2, made it possible to measure with greater precision the intensity of the magnetic field in the Moon's vicinity. It was learned that the near-lunar areas have a magnetic field with fairly uniform structure and an almost invariable and rather low intensity, but this intensity changes depending upon the index of magnetic activity on the Earth's surface. Soviet scientists believe that the lunar magnetic field may be an interplanetary one of solar origin, deformed or trapped by the Moon.

By obtaining information concerning the evolution of orbits of the Moon's satellites, the scientists were able to define the numerical values of 11 factors of the lunar gravitational potential. They also established quantitative characteristics of the eccentricity of the Moon's gravitational field itself. From these data they construed that the Moon was a sphere slightly elongated on the reverse side. The scientists were also able to gain more exact information about the dimensions and mass of the Moon.

More detailed conclusions were obtained by analyzing the movements of the Lunar Orbiters. Notably, it was discovered that in the round lunar seas there are usually considerable anomalies of gravity—presumable evidence of the increased concentration of mass in their cores.

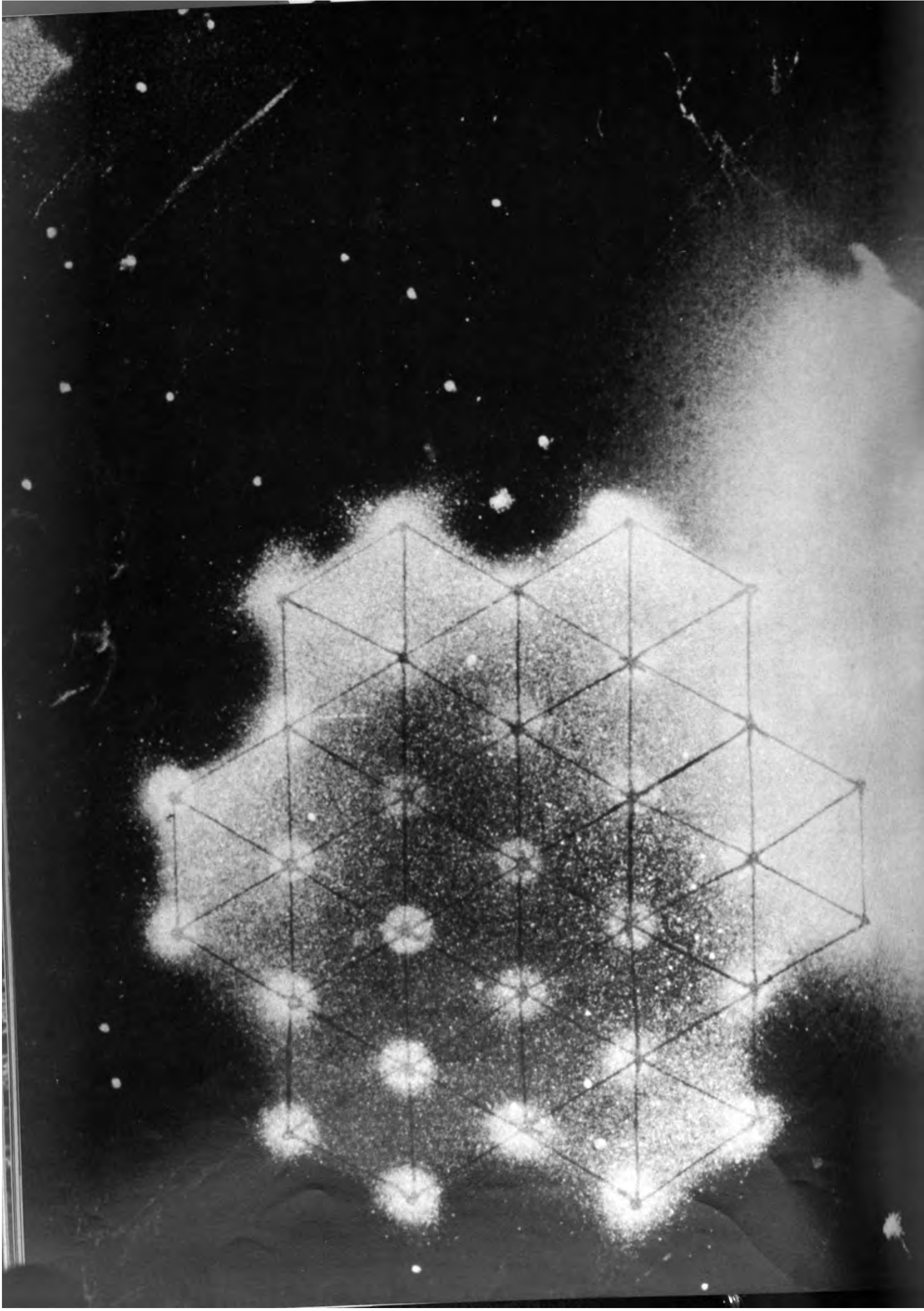
Secrets of Lunar Craters and Poles

Pictures of the Alphonsus Crater taken by the Ranger 9 TV cameras in March 1965 confirmed the seemingly incredible assumption of Soviet astronomer Nikolai Kozyrev that there is volcanic-type activity on the Moon.

In November 1966 Lunar Orbiter 2 passed down to the scientists pictures of the Copernicus and Marius Craters as well as of several lunar cupolas, analogues of terrestrial laccoliths. An analysis of these pictures also established traces of erosion, volcanic-type eruptions and "lunar tremors." The Kepler and Hyginus Craters were photographed by Luna Orbiter 3 in February 1967.

The year 1968 culminated a series of fine successes by Soviet and U.S. lunar probes: The Soviet Zond 5 and Zond 6 circumnavigated the Moon and returned to Earth. The latter brought back closeup pictures of the Moon. In the same year the Apollo 8 flight began manned exploration of the Moon.

The automatic probes launched from Baikonur and Cape Kennedy enabled us to learn many secrets of the Moon. Furthermore, the system perfected in the course of this exploration helped to start unraveling the mysteries of other planets. But only the opening chapters in the study of the Moon have been written: The exploration continues.



A SECOND EXPEDITION TO A STRANGE PLANET

Andrei Sokolov's illustration for the science-fiction story "A Second Expedition to a Strange Planet."

By Vladimir Savchenko

Vladimir Savchenko, born in 1933, an electrical engineer, wrote his first science fiction stories in the late fifties. He has since published several short novels, a full-length novel, **Self-Discovery**, and a play, **A New Weapon.** This story describes a collision and interaction of two kinds of intelligent life, protein and crystalline.

1.

The shaggy, burning disk of the Nearest was dipping behind the yellow-red crenelations of the horizon. Neighboring stars dived behind the rocks. All of these dazzling sundown fireworks lasted no more than a minute.

The scout rocket stood inclined on the rocky ground. It was quiet and dark in the module; no one felt like talking.

An oval screen glowed on in the upper part of the wall, and on the screen they saw the longish face of the stellar ship's telemetrist, the man Patrick Low, as he reported.

"Captain, they just transmitted something about us again. I managed to record it. Look at the slowed-down record."

The screen flickered with diffuse bright lines; then the fast, bright images flashed on.

Their scout rocket was gliding slowly in the magnetic field over the surface of the Strange Planet, an abstract landscape of rocks and stones. Here they were—Anton Novak and Sandro Reed—here they were jumping clumsily out of the porthole to the ground, wandering around. Then their heads in transparent helmets inclined, then they bent and picked up something, then they clung to the rock in absurdly tense postures.

"Well, this is how it all happened and this is how it all did not happen," said Sandro.

Precisely. They did land, did walk, did bend and did cling to the rocks. But the images on the screen were not photographs or newsreel shots: Everything was much more terse and expressive. They might have been images drawn by a gifted artist. They looked like generalized ideas the artist wanted to express in line and color because words were not adequate. Certainly those images on the screen meant something. But what?

"Anton, do you remember anything like this on the previous expedition?"

"No."

Novak gasped: His own face, but drawn in a few simplified and generalized strokes, floated out of the screen. It was a drawing made by a genius. Anton was ill at ease looking at it. "Can it be that I have such ruthless eyes, and lips like that, dogmatic, intolerant! I look like a capricious bureaucrat, not the captain of an astral rocket." His face on the screen suddenly grimaced horribly, then twitched paralytically, shrank and deflated like a crushed ball. Sandro chuckled.

"That was yesterday when their tiny rocket buzzed me," Novak muttered. "Hey, here you are in the picture!"

On the screen Sandro Reed played a pantomime he would never play in life. Exaggerated movements of his lips, eyes, chin told everything about him: about his youth, inexperience and enthusiasm, about his worship and fear of the captain, about his longing for his home on Earth, about his vanity and hypersensitivity. "Some comedians! That's none of their business!" Reed complained.

Now a whole group appeared on the screen: Maxim Likho, Patrick, and Julie Torrena. Simplified, multihued images flashed on. Then the Little Rocket flew into the oval screen: They could distinctly see four sharp protrusions on its nose, and along the fuselage finlike stripes which ended in three triangles, looking like the stabilizers of large caliber bombs.

"I don't understand one thing: Why do those Little Rockets have tails?" asked Sandro. "The planet has no atmosphere."

"Hm . . . only one thing. The rest is perfectly clear to you, isn't it?"

"Look!"

The Little Rocket vanished. Lo Vey appeared on the screen. There was an air of concentration about his face; he was unhelmeted against a background of stars. The image faded out.

"But Lo Vey did not descend on the planet."

"That means they are observing the Photon as well. He went out several times to check the reflectors.

"They're watching."

"Watching!" Sandro was indignant. "Why are they hiding? Are they afraid of us? Where are they and who are they?"

The telecast and Reed's reaction made Novak uneasy, made him hostile toward this Strange Planet. Now he realized that their second expedition would end in nothing, as had its predecessor. They would bring back a multitude of small observations that would delight the gravitologists, magnetologists and cosmologists, but their target No. 1—contact with this civilization—would not have been reached. "They don't want to get in contact with us. Nothing we can do about it. And expectations are so high on Earth. It will be a disgrace if we fail!"

"Please tell me, Anton, did you see any Little Rockets on the first expedition?"

"No. There were Winged Little Planes. They were flying, resting on the atmosphere. There was a rather dense atmosphere of inert gases. There were red-green, irridescent sundowns and sunups on this Nearest. When we came the second time, I thought it was the wrong planet, but there are no others anywhere around!"

The planet was rotating so precipitously that centrifugal force at the equator nearly balanced gravitation. In the middle latitudes where the scout rocket had descended, the rapid rotation of the Strange produced a peculiar gravitational effect: They could stand on the surface only by bending at a 50° angle toward the pole. Novak and Reed climbed the rocky slope towering up to the horizon, scanned the environs through their binoculars and examined the stones under their feet and in the hollows.

This search was as futile as before. They found no sign of artifacts, not even any accumulation of debris or rubble which intelligent beings inevitably leave behind when they stay for even a short time.

The red signal flickered on in Novak's helmet—the stellar plane was calling him.

"Captain!" they heard Vey's singsong voice. "We have an idea. Can you hear me?"

"Yes. What is it?"

"How about transmitting at the frequencies in which these beings are broadcasting—not the tests of the Commission for Contacts but simply information on ourselves. Let us introduce ourselves."

"Good." Sandro joined the conversation. "As a matter of fact, those Egyptian triangles and the periodic table mean nothing to them in the binary system!"

"What do you suggest we transmit?" asked Novak.

"Something about the solar system, its place in the Galaxy, about the Earth, our cities and structures. Torrena suggests that we transmit our art. Of course, we have to transmit everything at double quick. Otherwise they won't perceive it."

"I see," Novak thought for a while, his hand clutching the edge of the rock. "Don't transmit any information on the solar system and its coordinates. But try to transmit all the rest."

"Why not, Anton?" Sandro interfered again. "They should know where we come from."

"Don't do it for the time being," Novak cut him short. "Trust should be mutual. Also, don't transmit art because they are not likely to understand it."

"O.K., Captain. I'll start setting up the cinegram."

Lo Vey switched off. For a while Novak and Reed trudged in silence through the rocky desert. The stars were everywhere around: an infinite stellar abyss. The two men clung to the craggy cliff. The constellations moved so rapidly they were dizzy. The long brilliant hull of Photon 2, hanging silent and high, seemed the only fixed point in space.

Novak looked back and saw beads of perspiration on Sandro's face.

"Let's take a rest, Sandro!"

"Well, this planet is strange. You can't tell what's up and what's down." Sandro sat down next to him and was about to settle more comfortably when he suddenly froze.

"Anton, look. Little Rockets northwest!"

The captain looked up.

"Yes, I see them."

Little silvery droplets appeared low over the northern part of the horizon against the background of stars. They seemed to move in huge leaps: Now they dropped to the surface of the planet, but without touching the ground they swept upward and forward. The Little Rockets described a regular circle above the plain.

"I'm sure there are no living beings inside," said Sandro as though carrying on an old argument. "No living being could

stand such accelerations. Look what she's doing!"

One of the rockets had separated from the flock and was racing toward them like a silent silvery shadow. Then suddenly, as though meeting an invisible barrier, she stopped and hung in space. She began to fall at an increasing velocity on the sharp craggy rocks. Then something happened like a silent explosion; the Little Rocket swept up, looped and began to fall again.

"She's looking for us."

"Yes." Novak was watching the Little Rocket with a thoughtful frown. "Shall we try?" Otherwise we'll fly home with nothing to show." He pushed the button calling the stellar plane: "Photon 2! Photon 2!"

"Aren't you afraid the Little Rocket will take our bearings?"

"It's all right. Let's play hide-and-seek with her. Photon 2, I'm calling you!"

"Yes, Captain!"

"Is that you, Patrick? Switch on the radio interference system and keep it aimed at us. At my signal send a ray toward us."

"Very well."

The Little Rocket was diving at them. Silent and dazzling, it looked like a streak of lightning without the thunderbolt. Sandro's heart sank and he felt like closing his eyes and dropping down or running away. The silvery drop kept growing so precipitously that their eyes could not grasp the details. A split second short, it stopped, hanging in space. A strong thrust of the magnetic field distorted the horizon, and the contours of the nearest rocks grew white hot and then dark. The Little Rocket somersaulted. Novak and Reed gave a sigh of relief simultaneously.

"Well, this thing has some radar!" Sandro was delighted. "Beats ours!"

"Patrick," Novak radioed again. "Switch the interference system over to control by my biocurrents. Also, set a maximum ray energy."

"It's done!" came from the stellar plane.

The Little Rocket dived at them a second time. Novak was all alert to gauge the right moment. The Little Rocket was a dozen feet from the rocks. "Now she'll brake." Anton's consciousness materialized in one unpronounced word of command: "Ray!"

The interference system responded immediately. A flood of radio waves shot toward the Little Rocket; the head phones of the scouts gave a screeching howl. Within a split second the Little Rocket lost control and cut into the rocks. The ground shook. The splinters of the rocket shot in all directions; flashing in the slanting rays of the setting Nearest, they mixed with an avalanche of stones and precipitated "downward," toward the equator.

Novak jumped and almost lost his balance.

"Quick!" he shouted to Sandro. "We must find several of the fragments before dark!"

They spent this fleeting night in the laboratory of the ship. Novak looked at the fragments through a microscope and watched oscillograph readings as he touched them with electric sensors. At first Sandro helped him with an analysis of the components of the Little Rocket: The result was a combination of nearly every element in the periodic table. But he was too tired to go on and dozed off in his soft chair.

Brown hexagonal cells, veins of white and red metal, occlusions of yellow transparent crystals and gray streaks of some mineral—all formed a highly complex but certainly not arbitrary structure. Novak examined it through the microscope again and again; his surmise was frightening him. "So this is how it is. He also felt the fear of death, despair and pain in the last milliseconds of his life. Yearning for life and fear of death—this is perhaps the only thing which makes us kindred. Which makes us kindred and separates us too."

The white-pink Nearest again shot into the black sky. Novak looked up, his eyes red with tension. He touched Sandro's shoulder.

"Go to the command module. We're leaving."

"What do you mean? We still have six hours to go."

"Yes. But the trouble is that we've killed a living being. And perhaps a more highly organized living being than ourselves."

"What? Do you mean in the Little Rocket?"

"No, not in the Little Rocket," Novak interrupted him. "We ought to have figured that out. The rockets themselves are living beings. There are no other beings on this planet."

2.

Though Novak was in a hurry, he had to explain why they had to leave ahead of time. The crew gathered in the Proton's command module. Anton showed them fragments of the rocket and gave them his observations.

"We have come across crystalline life. That's it: We stumbled into it, but we were not prepared for the encounter. There on Earth our self-conceit told us that the only life possible was organic life, whose highest manifestation is human life. And that if we came across intelligent beings in other worlds, they would differ from us only in detail: in the shape of their ears or the size of their skulls. More probing minds argued that highly organized life is possible on the basis of other chemical elements: germanium or silicon instead of carbon, fluorine or chlorine instead of oxygen. However, all previous expeditions could neither prove nor disprove this supposition, since no complex forms of life were discovered either on planets of the solar system or on many other stars. Though we came here for a second time, to the Strange, to establish contact with some unknown but no doubt intelligent beings, we still visualized them in our human terms! If not for that, we would perhaps have realized the obvious: These rockets are living beings. The planet is rightly named the Strange. Evidently, its life is kindred not to ourselves but to what our minds and hands have created: electric engines, photocells, rockets, electronic machines and crystals."

For a while Novak was silent.

"Let me try to explain the difference between them and ourselves," he continued. "We are solutions and they are crystals. We are assembled by nature out of cells which are nothing but complex solutions of complex compounds in water. Our life is based on water, and two-thirds of our tissues are water. Those rockets consist of complex and simple crystals: metallic, semiconductive and dielectric."

"You mean they are something like robots," Torrena interjected.

"On the contrary, our electronic robots were produced by the mind and imagination of people for their purposes and adjusted to our movements and our life. The rockets are products of the natural evolution of crystalline life."

"You think so?" Maxim Likho, a red-haired giant with intelligent blue eyes, Novak's friend on the first expedition, asked with a tinge of irony.

"There is no other explanation," Anton turned to him. "Let us be logical. Life originating spontaneously begins at the atomic-molecular level. In other words, with the association of protein molecules in the cell in our case and with the crystalline cell in their case. In protein tissues the main carrier of energy is the ion; in crystals it is the electron. The chasm between these two forms of life—organic and crystalline—is determined by a simple physical fact. Having equal electric charges, ions possess thousands and indeed dozens of hundreds of thousands larger masses than electrons. In ourselves all vital processes—both nervous and muscular—occur because of the translation and variation of the energy of ions and neutral molecules, because of metabolism. In crystalline beings there can be no metabolism, only the exchange of electron energy. To generate a wretched kilowatt hour of energy necessary for our activity, we have to produce, digest, decompose and excrete a great deal of food. Now, rockets can feed directly on light, heat, oscillations of a magnetic field—just as crystalline thermo- and photocells. Therefore, right from the beginning crystal-

loids had no need for small mechanical movements of organs whether with the aid of muscles or levers or anything else."

"In other words, you mean," Maxim leaned back in the chair, "that it is not for nothing that there was no wheel in nature. A wheel had no need to be a wheel."

"Precisely. The wheel was needed by man. The living rockets can concentrate immense charges of energy and develop cosmic velocity of movement. But the difference lies not only in velocity but first and foremost in rates of internal processes. In our body any elementary process is restricted by the rate of translation of ions, and therefore the rate of processes in our organism cannot exceed the rate of propagation of sound in water. Now, the rates of electron processes in living rockets are restricted only by the velocity of light. Hence they have a different idea of time and a different idea of the world in general. What man had attained after thousands of years of labor and search was a natural part of the organism of living rockets: electromagnetic motion, television, radar, cosmic velocities."

"God!" Patrick slapped his knee. "You're right! Now I understand why the rockets transmit images in a different frequency when they move rapidly than when they move slowly—remember we couldn't understand that. They make allowance for the theory of relativity!" He almost jumped. "It's quite simple. They move at a speed of 12½ miles per second, and their counting of time is hundreds of thousands of times more accurate than man's. Now do you understand what it means?" Low looked at them wildly. "Those living rockets sense and use in their daily life what we can hardly imagine: change in the rhythm of time, contraction of lengths, increase of masses, curvature of space. Probably they also feel the wave properties of particles of the microworld?"

Torrena bent forward and pushed back a lock of black hair with his hand.

"But tell me, Anton, what sort of life can there be without metabolism? Can we regard it as life?"

"True enough," Maxim supported him sympathetically. "Not without a good drink or a hearty meal!"

Everyone laughed. Torrena's weakness was well known—he volunteered for duty in the galley with suspicious frequency.

"Cut it out," Torrena stopped him short indignantly. "I'm serious."

"It's life all right," Novak shrugged. "They move, exchange information, develop."

"Do they develop?"

"They develop fast, Torrena. In our last expedition we saw living planes, now we see living rockets. This is how they changed in 20 years, perhaps equivalent to the development from Pithecanthropus to modern man."

"Wait a moment." Torrena got to his feet. "Intelligent life should be creative. Now, what have they created? The planet certainly looks uninhabited."

"I was thinking of that," the captain nodded. "I believe there is a very simple explanation: Crystalline beings don't need all that. They don't need buildings and roads, machines and instruments, because they themselves are the most powerful and universal machines, most sensitive and accurate instruments. They have not passed through the machine stage of civilization and will not pass through it. Instead of building and improving machines and instruments, they are improving themselves."

"But can we regard them as intelligent beings if there is no trace of their collective activity?" Torrena insisted. "Perhaps they are just 'crystalline beasts'?"

"There are such signs," Maxim Likho interfered. "Though you can hardly call them creative. Take, for example, the disappearance of the atmosphere of the Strange. Evidently, the atmosphere interfered with their flying at speeds they wanted. Therefore, the living rockets destroyed it and that's all."

"Now look here!" Sandro exclaimed, his eyes shining. "They must be practically immortal, those intelligent crystalloids. At any rate, in their system of reference. Look: Living conditions for them are now ideal—vacuum, no atmosphere, no moisture or corrosion. The probability of breakdown of one part is insignificantly small, once a year according to our time reference system. Now, our year is equivalent to their thousands of years of life. Just think about it: In minutes they can invent, learn and understand more than we can in a month! A whole Niagara of ideas, and what ideas too! I wish I were a living rocket for a few hours."

Anton was watching his comrades with some surprise. They were discussing the problem academically. Surely they realized that it could turn out very badly for the expedition. However, the concept of danger and especially "danger from other intelligent beings" had long been abstract for terrestrians.

Torrena still defended his points.

"If they are intelligent, why don't they communicate with us; why don't they respond to our signals, tests or our cinegram?"

"I'm afraid that it is much harder for them to understand us than vice versa," Novak answered. "They move and think so quickly that it is harder for them to observe us than for us to see a tree growing. Do you remember the rockets diving to get a better look? Who knows: Perhaps they think our stellar plane and scout rocket are the living things rather than we ourselves."

Maxim looked up.

"Well, now that we have it straight, do you think this is the time to investigate?"

"No," said Novak. "I firmly believe that this is the time to get out of here."

The response was a chorus of indignation and bewilderment.

"Keep your shirt on." Novak raised his hand. "I'll explain why. First, we have learned the most important thing: that there is intelligent crystalline life here. Thus, we have received information perhaps as valuable as the solution to the mystery of organic life in general. We should bring our information back to Earth. What we would be able to investigate and understand would be additional information. It's not worth the risk. Now, a considerable risk is involved because we . . ." He noticed Sandro Reed's gesture of protest. "Well, not we but I killed a Little Rocket. Sandro is right. They are immortal in their own way, these beings. Therefore, every life is of immense value here. Indeed, they have no other values."

Novak looked at his watch. His voice became firm:

"In half an hour I want everyone at his post ready to start."

3.

The ship Photon 2 was in its tenth day around the parabola of the Nearest and was entering the calculated inertial trajectory. Riveted to their seats by overloads, the crew members passed their time in forced idleness and immobility. Sandro had chosen a good vantage point, the observatory astern—and was watching stars and nebulas. He noticed a semitransparent spot which partly blocked out the disc of the Nearest. The stellar ship was speeding at more than 25,000 miles per second but the spot was not falling behind; it was approaching. Because of the dazzling flashes of antihelium it emitted, he could not make out the exact shape of the spot.

Reed called the control cabin:

"Anton, we must stop the engines."

On the screen he could see that Novak tried to sit up in his chair:"What's the matter?"

"A body is following us."

Perhaps it was not a body; perhaps it was a dense flock of dozens of thousands of rockets now racing through space. Rockets milled inside the swarm; the swarm now shaped itself into a sphere and then into an ellipsoid. There was a bright, variable glow from inside and a rhythmic connection between this pulsating glow and the changes in form and movement. The impression was that the flashes were impelling the swarm forward, extending the rockets into an ellipsoid, reshuffling them into a sphere.

The astronauts gathered in the observatory astern and watched the approaching swarm in silence. It grew with each pulse.

"What is moving them?" Maxim asked himself.

"Captain, they're after us," said Lo Vey with some anxiety, though usually he was silent and reserved. "Only six or seven thousand miles away."

When no more than 600 miles separated the Photon and the swarm, the glow in the center dulled. The swarm became invisible in cosmic space. Sandro switched on the

radio telescope: The sphere of rockets reappeared on the screen.

"They are not going to attack us, it seems," Lo said with relief.

"Of course not; they could have done that on the Strange. The rockets intend to follow us into the solar system!" Novak looked at all of them. "What do you think?"

"Good for them!" Sandro was delighted. "That will really be exhaustive information on crystalline life! Here are our neighbors in space, dear terrestrians. They are our guests—please receive them in state."

"I see. What do you think, Patrick?"

"I say let them follow. What's important is that they're not going to attack us. It's a long way, and perhaps we'll work out a kind of mutual understanding as we go."

"In the solar system we'll find a good base for them," added Maxim. "Mercury. The conditions there are similar to those on the Strange. Anyway, this planet is wasted. I know what's worrying you, Anton." He looked at the captain. "Don't worry. Mankind is strong enough to cope with them just in case. But I don't think that there will be any conflict. Intelligent beings will always find a way of understanding each other."

Novak set his lips but said nothing and turned to Lo Vey: "What's your opinion, Lo?"

He thought for a while.

"They didn't want to contact us. Nor did they try to tell us that they would be following. That's alarming. I think they could transmit their information to us if they wanted to."

"And what's your opinion, Torrena?"

"Well, we should at least know how they're flying. There are no magnetic fields here. There is no closed construction like an engine although the swarm is flying at 25,000 miles per second. Perhaps they get their energy of motion directly from vacuum. I wonder whether they can reach a velocity near that of light."

"Suppose they can, what then?"

"What then? I don't know. What do you think, Captain?"

"My opinion . . ." Novak paused and then said with decision, " . . . is that we ought to get rid of them by any means possible."

Novak and Lo Vey dragged a container of compressed antihelium toward the entrance chamber of the electromagnetic catapult.

There was sharp objection to Novak's statement, except from Lo Vey.

"I also believe that if they keep following us, we may bring an unknown danger to Earth."

"Even if we merely indicate the direction to the solar system, we may jeopardize mankind," Novak insisted. "It is ridiculous to think that they will act as we want them to."

"For some reason or other you regard them as invaders," Sandro exclaimed. "Surely we people do not go to other worlds for conquest. Maybe they too are motivated by the desire to know."

"I don't regard them as invaders," Novak beat off the attack. "It's much simpler than that: We don't know what they want. That's enough for me."

"Excuse me, Captain, but according to you, everything unknown is hostile," Patrick Low joined the argument. "That's a very primitive approach. Why should we suspect that the rockets will try to destroy people?"

"It's enough to know that they may, that they have the possibilities."

"But what would be their purpose?"

"Their purpose would be simply to get rid of us because we're a nuisance," Lo Vey interjected. "There is nothing in common between us and these crystalline creatures. The raving of a faulty electronic machine is closer to our thinking because we programmed it. As for them—they don't know our feelings or our perceptions, and they won't understand our thoughts. We are different in principle. We need air, while for rockets air is simply an obstacle. We need water, while for them water is more harmful than nitric acid. We need organic food, while they subsist on radiant energy."

"However, we should bear in mind that it is the first contact between two kinds of intelligent life that is at stake," Torrena said in deep agitation. "The rest will depend on the contact we make. Our start was poor enough as it was."

"Don't forget that the destiny of mankind is also at stake."

"Let's not pile up fear," Maxim's confident basso resounded. "There can be no gap between thinking beings. They will understand us."

"That will not make things much easier for us." Lo Vey's piping voice was not very convincing after Maxim's basso. "They will merely understand that we are bits of gelatinous matter with insignificant stores of internal energy, who think and move at a snail's pace. They will understand that we are unsuccessful creations of nature and will feel neither respect nor sympathy nor pity for us."

4.

The Nearest was already lost in rotating space. The swarm was floating at that spot where the stellar circles converged as though dipping into a tunnel. Lo Vey trained the parabolic antennas of the radio telescopes. A multitude of green points appeared on the screen. They could see the rockets shifting to and fro in the swarm.

"Switch on, Lo!" Anton shouted.

Everyone froze. But instead of the recoil which announced that the antihelium-charged rocket had been catapulted into space they heard Lo Vey's surprised voice:

"Look! Look what they are doing!"

Now they could see it, not only on the screen of the radio telescope but also through the portholes: The swarm of rockets was alive and glowing! It was turning inside out—the rockets were diverging in all directions. The swarm burst into a glittering flower which soon became a large ring.

"They have sensed the danger," Novak decided. "They are making preparations. Here you are!"

But the rockets merged again into a dense sphere, the inside flashing. At first the astronauts could not understand why each subsequent layer was dimmer than its predecessor.

"They are going away," Maxim brought out with a sigh.

"They are going away to the Nearest."

"They are going back."

Soon it was difficult to discern the rhythmically glowing point among the stars. The image of the swarm faded out on the screen as well. The astronauts exchanged glances.

"Do you think they got scared?" Patrick asked, and shrugged.

"No. They understood," Maxim said thoughtfully. "Certainly they were not afraid. A few of the rockets in this swarm could have smashed our plane easily. They understood us. That's the point. Or rather 'understood' is not the word. The rockets evidently understood what we were even on the Strange. Judging by the fact that they could make out what was going on in our plane at a distance of 600 miles, this is no problem for them. But now they really knew what we were. Yes"—he shook his head. "They realized that we were not only something—some weak and barely alive protein matter, but that we were beings. You were right, Anton; for the rockets it was a far more difficult problem than for us. And yet they caught on. They realized that they had encountered a different kind of highly organized life developing according to its own laws and striving for its own purpose. They understood that they could not either neglect this life nor interfere with it unceremoniously. It is difficult to say what makes them respect us: the container of antihelium trained on them or our arguments.

"At any rate the only point on which you were right, Anton, is: You cannot measure them by our yardsticks and our concepts," concluded Maxim.

"Well," Novak dropped his eyes, tired. "If you think that is the only point I'm right about, I do not think I should remain your captain. Choose someone else."

"Why so?" Torrena said. "For the time being no one is right. We still don't know what those beings wanted."





Planes and helicopters circle the expected landing area. The soft-landing system operates with such efficiency that the traveler in the capsule just barely feels the impact (left)

The capsule of the Vostok with its burnt insulation cover is packed in a special tarpaulin for transport to the cosmodrome where scientists and engineers will check its complex inside.



Back Home



Asked what the most thrilling moment of his space flight was, one cosmonaut said: "The moment I heard a helicopter." In the photo Valentina Tereshkova (left) is welcomed to Earth.

These photos are already past history. The pioneer Vostok was followed by the Voskhod multiseater and the Soyuz space "buses." New ships are on the slips, trained on deeper space.

NEXT ISSUE



Samarkand is marking its 2500th anniversary. This ancient city in Soviet Central Asia is world-famous for its architectural monuments dating back to Tamerlane and Ulugh-Beg. A magnificent ensemble of minarets, mosque cupolas and a university campus have survived the ravages of time. These were indeed master craftsmen who fashioned the enamel mosaics that still glitter in the sun as they did centuries ago. An article tells about the city's history, the great scientists who lived and worked in Samarkand long ago, the changes that have taken place in that museum city and in the Uzbek Republic in the past 50 years, and modern day living there. Accompanying color photographs convey without words why Samarkand is fast becoming the *sine qua non* for tourists who travel from all over the world to see its beauty.



A Jewish wedding ceremony in Vilnius is not a rare phenomenon because the city has quite a substantial Jewish population. Most Vilnius Jews hold to the traditions of their fathers and grandfathers, particularly when it comes to the wedding ceremony. It's a gala affair. Two hundred guests dance the dances, sing the songs and make the toasts just as they have done at Jewish weddings for as long as anyone can remember. And the gayest of the guests are the oldest people there—the grandparents of the bride and groom. A picture story.

Music hall companies are becoming increasingly popular. One of the leading companies, the Leningrad Music Hall, is offering a production that combines the elements of the classical concert and ballet with circus acts, right down to clown shows and the traditional Russian jesters.

The Institute of Cybernetics in Kiev is famous for its computers both in the Soviet Union and abroad. The machines developed at the institute are being used more and more extensively in all branches of industry, while the theoretical research done by institute scientists is helping to bring cybernetics into biology and medicine. One of the latest wonders of the institute is the machine that produces machines in its own image.

Can a Soviet republic secede from the Union? If it can, what keeps it in the Union? This is one of the questions considered in "The Federation and the Nation," which deals with the Marxist approach to the national question, the formation of the Union of Soviet Socialist Republics and the implementation of the autonomy of the peoples which inhabit it.

A recently adopted government decision says that all Soviet workers must have a secondary technical education. This measure, together with the introduction of compulsory 10-year schooling, is supposed to raise the standard of general education and special training for young people to meet the requirements of the revolution in science and technology. An article deals with the development of the system of vocational and technical training and a young worker who attends one of the new schools.

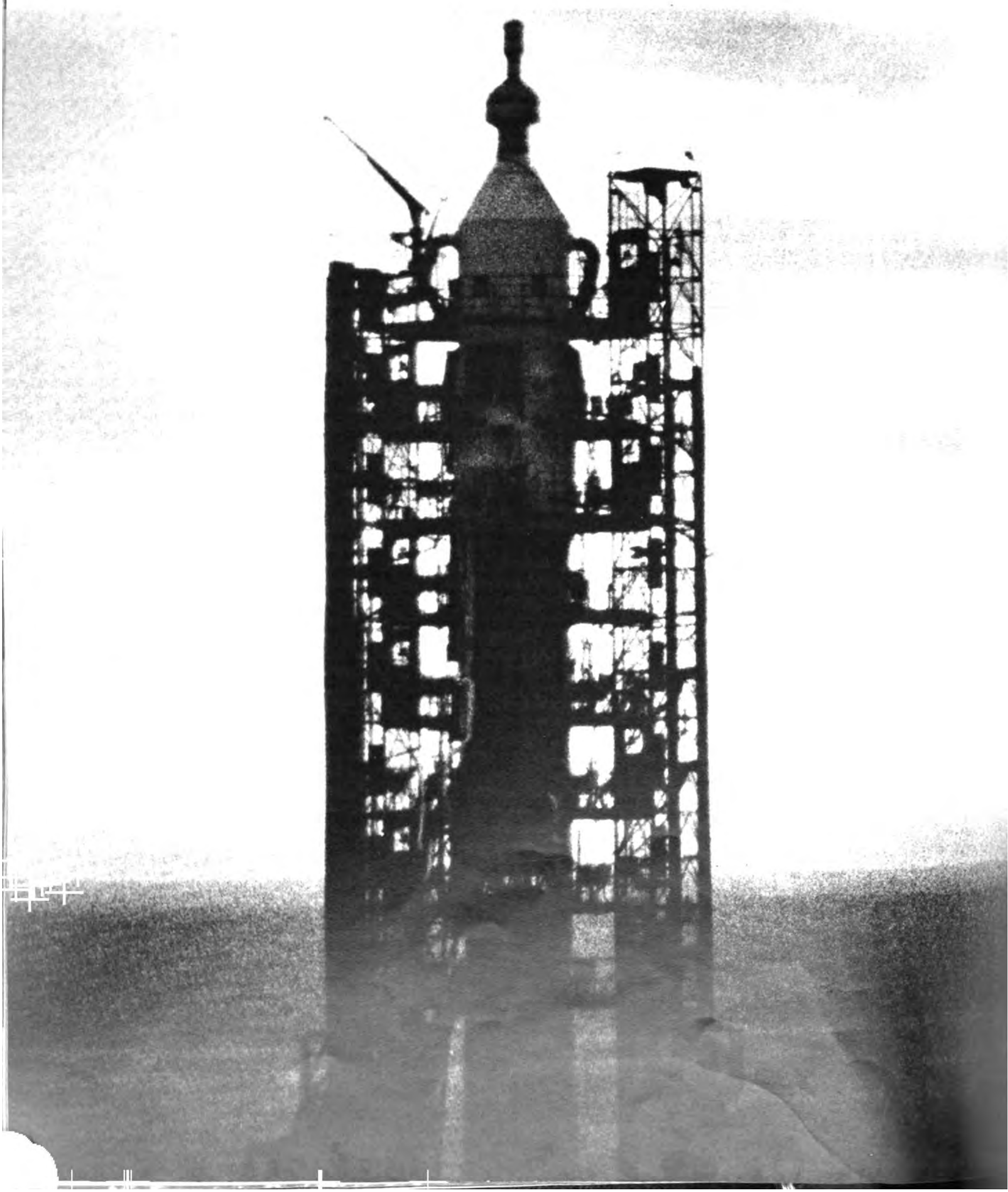
The increasing role of young people in politics and state administration.

COMING SOON

College students get summer jobs at construction sites and collective farms.

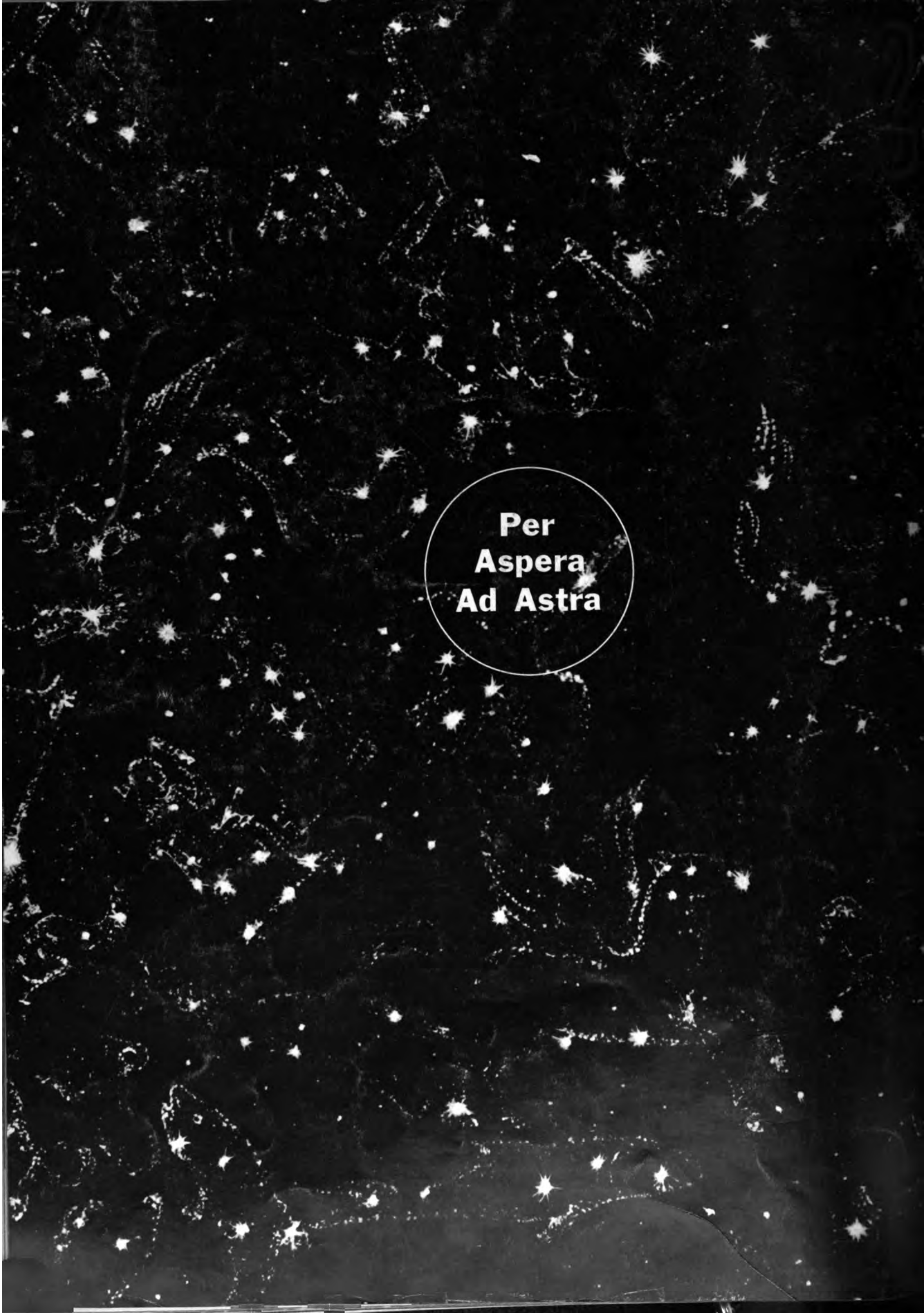
AT DAWN

Carrier rocket of Soyuz spaceship at the launching pad in Baikonur.



LENINGRAD MUSIC HALL PRESENTS ITS FIRST PROGRAM




Per
Aspera
Ad Astra

SOVIET LIFE

SAMARKAND: 2500 YEARS OLD

WEDDING JEWISH STYLE

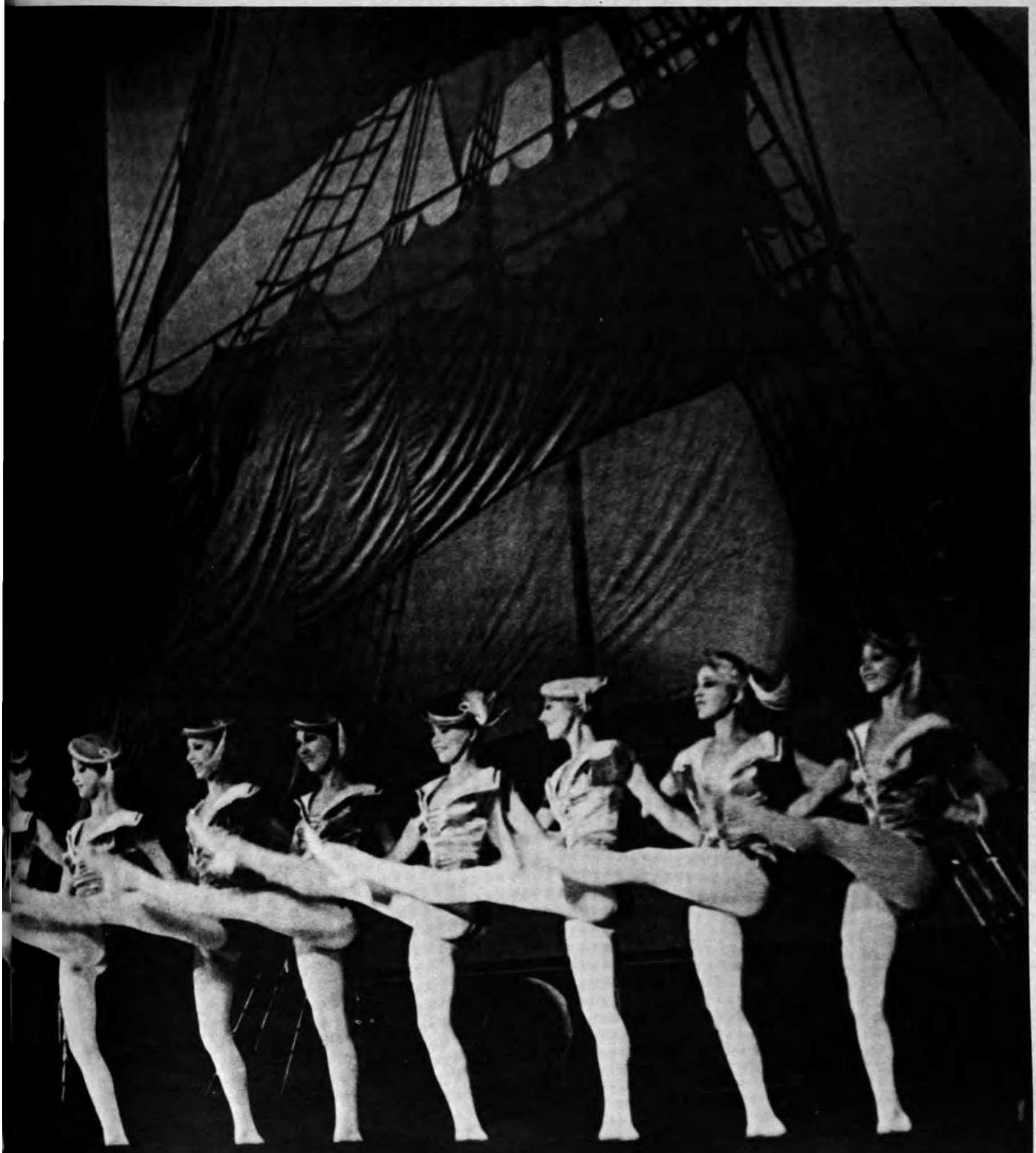
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LENINGRAD MUSIC HALL PRESENTS ITS FIRST PROGRAM





Photographs by Leonid Bergoltsev

The Leningrad Music Hall's opening program was None More Wonderful Than You. *The plot is simple—just enough to weave the variety acts together: A young Leningrader shows a visiting Estonian around the city. The action is set on the waterfront, in a park, aboard the yacht* Tovarish, *against the background of the celebrated Petrodvorets Fountains and on Nevsky Prospect, Leningrad's main street.*

Continued on page 61

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Front Cover: On the deck of the "Tovarish" a scene from the Leningrad Music Hall's program "None More Wonderful Than You." Photograph by Miroslav Murazov.

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COMPUTER TOWN

CYBERNETICS TODAY AND TOMORROW

By Yuri Kanin
APN Science Reporter



Lenin Prize winner Academician Victor Glushkov.

Cybernetic machines are tools and will go on being tools, nothing more, which man uses to exert his control over nature.

Academician Victor Glushkov

A cybernetics town is going up in what used to be orchard country in scenic Teremki District, a southern suburb of Kiev, the Ukrainian capital. This will be the first research and residential center built in the Soviet Union for specialists in cybernetics.

The Kiev-67 high-speed digital computer is one of many types designed at the Cybernetics Institute in Kiev, which was founded in 1957 and is directed by Victor Glushkov. The institute has developed equipment for program training and devices to automate bookkeeping, designing and scientific experimentation. The first Soviet electronic computer to diagnose disease was made in Kiev.



Anatoli Verlan is a cyberneticist. The average age of institute staff members is 27.



Vadim Pavlov, who was awarded his Doctor of Science degree at 31, is head of a group.



Philip Andon, 30, is chairman of the institute's very active Council of Young Researchers.

In the World of Robots

The center, a division of the Ukrainian Academy of Sciences, will include research institutes of theoretical cybernetics, computer methods, economy cybernetics, system technology, specialized computer technology and technical cybernetics, biology cybernetics, and a computer section. The institutes will offer undergraduate students in cybernetics from various colleges two or three years of apprenticeship as part of their course of study. The center will also train working specialists.

It is not by accident that this center was set up in the Ukraine. Ukrainian scientists have done yeoman work in cybernetics. More than a hundred research and design institutions, laboratories and special university chairs in the republic have been creating cybernetic equipment and applying cybernetics to industry. The Cybernetics Institute of the Ukrainian Academy of Sciences, founded in Kiev in 1957, is the progenitor of the new center and the "brain trust" for the research and design groups mentioned above.

The problems tackled by the institute range from the creation of "machine languages," algorithms and programs to the most complex theoretical questions of business and industrial management. Original electronic computers of different types, like the Luch, Promin, Dnieper, Kiev, Mim and Mir; equipment for program training, and devices to automate bookkeeping, designing and scientific experimentation were developed there. The first Soviet electronic computer to diagnose diseases was made in Kiev.

In engineering practice there are calculations which need anywhere from several thousand to several hundred thousand arithmetical operations. For such calculations table key devices are inadequate because their productivity is too low, and using expensive computer giants is too costly. Besides, the solution of many engineering and scientific problems requires the direct interference of man—facilitated by quick and easy contact with the computer. The Mir was created for this purpose. It is built on completely nontraditional principles. The machine understands man, so to say, at a glance.

The Machine Learns to Speak

A computer will ordinarily have two languages: an external language for communication with man and an inner "native" language in which the machine "thinks." Having received an assignment, the computer translates the task from one language to the other by means of a special automatic system. The Ukrainian cyberneticists were able to combine both of the computer's languages.

The second remarkable feature of the Mir computer is its very high "intellectual level." It does not have to be taught, for instance, how to apply an integral. The structure of the machine itself keeps the basic programs in storage. This merging of programs for mathematical insurance with the structure of the machine makes for higher productivity, a so-called stepped microprogram control. Testifying to its originality are the large number of patents purchased by many countries. Mir also has this important advantage over other computers: An engineer without training as a programmer can learn to operate it in an hour or two. No wonder orders for the Mir computer keep coming in from all parts of the world. The machine was bought by IBM, the largest manufacturer of computers in the world. In 1968 the designers of the Mir computer were awarded the USSR State Prize.

The Ukrainian cyberneticists have been doing basic theoretical research in abstract automation, optimum solutions, automatic control, problems bearing on the precision and reliability of cybernetic systems. They have developed methods for the formalized synthesis of computers and systems—the fundamentals of automated designing of electronic computers. They have also worked out the principles of modern data processing systems and information reference systems, on the basis of which they prepared a draft for a standard nationwide system of computer centers for the entire economy.

Applying their theory, the Kiev cyberneticists worked out an automated control system for a whole enterprise—the Lvov Television Set Plant. An Ogonyok or an Elektron TV set comes off the production conveyor of this plant every 47 seconds with clockwork precision. The Lvov system has been adopted as a standard and is currently being introduced at six similar plants in the country, the beginning of an effort to automate the control of an entire industry.

The School of Victor Glushkov

The day of the genius who single-handedly revolutionized scientific theory is irretrievably past. Most of the major discoveries of modern times are made by collectives of scientists, each member contributing something new to the ultimate goal while preserving his creative individuality in the process. In this same way all the achievements of the Cybernetics Institute result from the collective work of its researchers. Who are they and how do they work?

The director of the institute is Academician Victor Glushkov. At the early age of 40 he became a member of the USSR Academy of Sciences, the country's highest distinction for a scholar.

"I began working in cybernetics after specializing in theoretical mathematics," said Victor Glushkov in an interview. "I was appointed an opponent at the defense of a thesis in higher algebra. When I looked through the material, I immediately saw that a great deal of time would be required to check all the equations. I therefore compiled a key to their solution—an algorithm—and used electronic computers for the purpose. Once this problem was solved, I became very much interested in cybernetics. On the surface I found nothing exceptional about the computer since we had all become accustomed to using arithmometers. But I had a feeling that the outward similarity of these machines concealed a new property which could lead to a revolution in technology."

Glushkov, it turned out, was admirably suited by background and temperament to cybernetics. This relatively new science can be compared to a circular highway which connects the radials of many other sciences and provides them with new vital force at the crossings. For cybernetics, wide-ranging knowledge and a probing scientific mind are essential.

Glushkov has both and more. This creative scientist has erudition, inexhaustible energy, businesslike precision and efficiency, the logic of a mathematician and a headful of bold ideas.

His working day is scheduled to the minute. He is not only director of the institute and head of one of its departments, but the vice president of the Ukrainian Academy of Sciences, editor in chief of the magazine *Cybernetics* and a member of the editorial boards of many other scientific publications.

The Soviet Government has shown its appreciation of the work of Academician Glushkov by honoring him with the Lenin Prize and the State Prize.

A Science of the Young

The Kiev Cybernetics Institute is often referred to as Glushkov's institute. This is not only a tribute to him as director but acknowledgment of the fact that he founded a whole school of cybernetics.

"The driving force of a young science is and should be young people," Glushkov likes to say. "To me this is axiomatic and applies particularly to cybernetics, because it is a science that must break through the traditional forms of organization of labor and thought, one in which new branches attractive to youth are constantly evolving. Youth is an advantage for a scientist whose field is cybernetics."

Glushkov's institute is probably the youngest in the Soviet Union as far as the age of its staff is concerned. The average is 27 and even some heads of departments and laboratories are under 35.

In the opinion of Victor Glushkov the nutrient medium for talent is the unity of

theory and practice. Which is why the concrete tasks set by the national economy are solved at the institute on the basis of its most recent theoretical findings. The problem is first posed in the most general form. This makes it possible to use a single scheme for the solution of many concrete tasks by merely changing the initial data.

Eight institute scientists recently won their doctor's degrees, and another six researchers are not far behind them. More than 200 of the institute's young apprentices are also working on graduate dissertations at their respective colleges.

The institute's Council of Young Researchers helps the administration to train and develop personnel. The chairman of this council—30-year-old Philip Andon, Master of Science (Physicomathematics)—is also a member of the Scientific Council of the institute. At the recommendation of the Council of Young Researchers young scientists Vladimir Kuznetsov, Victor Shkurba and Anatoli Stogny were awarded Young Communist League prizes, the first two for their work in automating control of the Lvov Television Set Plant, and the third for his work in the mathematical insurance of computers. The council organizes trips to exchange experience with other specialists, arranges conferences on theory, and teaches schoolchildren the fundamentals of computer technology. At the discussions arranged by the council all sorts of theories are argued. Glushkov says that many interesting ideas are conceived in such heated discussions.

A Computer Designs a Computer

In 1964 the first "electronic mathematician" in the world was designed at the institute by another computer. It was named Mim after the Russian for the initials of "small integrant machine." It is very simple to operate and needs no special programming.

The event was important not simply because the scheme of the Mim computer was so original, but because an optimum method for designing schemes of digital electronic computers was elaborated on new principles. It was designed on the basis of the work Academician Glushkov had done in the theory of abstract automation.

The question comes up: Why automatic reproduction of cybernetic machines? The reason is the ever-growing demand for computer and control technological equipment.

There is also the time factor. It takes a group of the most experienced specialists at least three to four years to design a new computer. Additional time is required to build and adjust it. But the term of so-called "moral aging" in computer technology is five years. What happens is that the computer is actually superannuated by the time it is manufactured. It will do its work well enough, but after so many years of labor such "elderly offspring" can bring little joy to its creators.

The significance of the Mim computer is obvious. It was designed by the Kiev computer, a comparatively low-power machine, in a matter of three weeks. Moreover it was built without a model, and its adjustment boiled down to the elimination of a few minor assembly defects.

The staff of the institute is currently developing an automated system for designing computers. The general methods have already been worked out and, most important, a new field of mathematics of computer design elaborated.

The new methods of creating electronic computers may be outlined in this simplified way. The engineer who has sketched a rough scheme of the new machine "holds a conference" with the cybernetic computer-designer and asks the following questions: How much will the new computer cost; how much power will it consume; what should its dimensions and weight be; how many operations per minute will it perform; how reliable will it be? Having analyzed the answers, the engineer then "asks" the computer to change the scheme to get better indices. In a gradual approach to the ultimate solution, these operations are repeated till the optimum variant for a certain type of computer is found.

Thus, computer technology design develops from an art based on the experience and intuition of gifted scientists to become almost the everyday work of rank-and-file mathematicians and engineers.



Engineer Valentina Medvedeva belies the notion that cybernetics is exclusively male territory.

The Dnieper Computer in Cancer Control

Every so often we see published reports of new methods of treatment and new drugs for certain forms of cancer. Many of them are apparently discovered by chance. The basic remedy, however, will come only from a knowledge of the origin and development of the cancer cell.

And this requires the most meticulous and comprehensive research with the most modern instruments and equipment.

Ukrainian Academician Rostislav Kavetsky, director of the Institute of Experimental and Clinical Oncology in Kiev, decided to try out the most modern research tool of our time—cybernetics. With the cooperation of the institute, physicians are "training" the Dnieper computer to become an "electronic oncologist." It is being trained, in particular, to treat breast cancer, one of the most prevalent forms of the disease.

Presently, the Dnieper computer is "studying" the statistics: two thousand case histories of women suffering from breast cancer. Information on these case histories was recorded on punch cards by the machine, which was then programmed to analyze the information and offer solutions. Having "graduated from this school," the computer is fed information on a particular patient and is "asked" to find the most effective treatment. It searches through its vast memory bank for similar cases.

At the very first trials, working parallel with an oncologist, the computer displayed its extraordinary abilities. It has the stored experience of many specialists. Its memory is never impaired, so it proved capable of giving the physician skilled advice on the best method of treatment in each case. The computer will soon be trained to prescribe treatment for other types of cancer.

The Dnieper at the institute is not only a clinician, but a pure experimenter as well. Research on malignant tumors is carried on by a variety of methods and with various instruments. How does the normal cell become a tumor cell? What processes take place at different stages of the disease? How do the different kinds of radiation used in the treatment of cancer affect the body? What is the optimum dosage in each case? These are some of the questions that must be answered.

In order to automate and accelerate the tedious job of deciphering the data registered by medical instruments, medical specialists decided to connect them directly to the Dnieper and thus create a single chain. The instruments then become very sensitive "feelers" for the computer.

Among other services, cybernetics is likely to play an important role in checking cancer, one of the major killers of our time.

Director Glushkov at one of his impromptu conferences. Like most researchers, he believes the day of the single-handed genius is gone, that major findings are now mostly made by collectives of scientists.





A bird's-eye view of the Gur Emir mausoleum, built in 1404. Tamerlane is buried here.

Uzbekistan, Kirghizia, Tajikistan and Turkmenia make up Soviet Central Asia. Not only their social system and their historic develop-nt, but also the scorching sun and the bronzed faces of their citizens make these republics similar.

More than 19 million people of various nationalities—with Uzbeks, Kirghizians, Turkmenians and Tajiks the most numerous—live in iet Central Asia.

Touring its 493,810 square miles, a traveler will see a great panorama of desert, derricks and the chimneys of iron and steel mills, ds of karakul sheep and the lonely camel of a sheepherder, and appearing on the horizon like a mirage, snow-capped mountains, vine-ds and the colorful Asian orchards.

He will also see ancient towns, some known mostly to archeologists and historians, and industrial centers that have sprung up in the t several decades.

Uzbekistan, the biggest Central Asian republic in population and territory, lies between the Syr Darya and Amu Darya rivers. But se two big rivers are not enough to give life to the whole land under the scorching sun.

"Where there is no water, there is no land," people say here. For centuries the Uzbeks had to fight for water. Green oases in villages, towns, many-miles-long irrigation canals with pumping stations, and plantations of cotton, the main crop of the republic, are proof of industry of the Uzbek people.

Uzbekistan's exports go to 86 countries. They range from instruments and cable sold to Britain to textile machines bought by Japanese ns.

Tens of thousands of skilled workers, engineers and technicians are employed in Uzbek industry: Specialists with a secondary or her education work in the republic's highly mechanized agriculture. Uzbekistan can boast of its national culture, of its education, its ences, crafts, literature and art.

Samarkand, the gem of Uzbek and Central Asian architecture, an industrial and university town, has passed its 2,500th birthday.

Poets called Samarkand "the Eden of the ancient East," "the most beautiful gem in the necklace of Central Asian cities," "the bright t of the globe."

The great scientists and writers of the East—Rudagi, Navoi, Avicenna, Jami, Ulugh-Beg, Jalal-ud-din Rumi and Ali Kush—lived and rked here. The ancient silk route crossed Samarkand.

It is here that the new Uzbek civilization, deeply rooted in antiquity, was born, civilization which gave the Uzbeks hope, opened for ry one of them a way of life worthy of man.

SAMARKAND

2500 YEARS OLD

Mikhail Andrasha
writer



While the ancient monuments are being restored to their original beauty, apartment houses with all modern conveniences are being built.



Samarkand, proud and ancient city of Uzbekistan, has passed its 2,500th birthday. It is as old as Babylon, Thebes, Athens and Rome. Only five decades ago it seemed that this city would never awaken from its medieval stupor. Time had stopped and the injunctions of the Koran ruled the lives of the people.

"I am with you," adjured Allah, "to give strength unto the believer. I shall strike terror into the heart of the infidel: you smite him, smite his every finger."

Islam required its followers to pray five times a day. From the top of the minaret to the busy street below came the muezzin's call: "Allah is great! Allah is great! Pray and seek salvation!"

For 30 days the Uzbek fasted, made offerings to his God, acclaimed the greatness of Allah and dreamed of a pilgrimage to Mecca.

Demanding surrender and submission, regulating the lives of its communicants from birth to death, the Islamic religion long ruled supreme in Central Asia. It had won power by force of arms. In the "holy war" for Mohammed, the conqueror's sword proved a weighty argument in converting the Uzbeks of Central Asia.

Uzbek history is a long record of invasion and pillage: Alexander the Great, the Persians, the Arabs, the Mongols overran the country. A tyrant would now and then be followed by an enlightened ruler who encouraged scholarship and poetry and re-

vived commerce and the towns. But such periods were few and far between. In the tenth century the Mavera-un-nahr Uzbek state was leveled by Mahmud of Ghazni. Civilization was just beginning to recover when it was gutted by the hordes of Genghis Khan in the early thirteenth century and by Shaibani Khan three centuries later.

Every new invasion brought a mixture of blood, language and custom. It also brought the bitterness of defeat which, like strontium in the bones, filtered deep into the hearts of the Uzbeks. Their last ruler was the Russian czar. The Russian Revolution of 1917 gave this people in Central Asia hope for a better life. The Declaration of the Rights of the Peoples of Russia, issued a few days after the Revolution, granted equality and sovereignty to all the peoples of the former Russian Empire, the right of self-determination, including the right to secede and form independent states. It called for the free development of all the national minorities and ethnic groups on the territory of Russia. It abolished all national and national-religious restrictions. Lenin's ideas, embodied in this declaration, became the political platform of Samarkand and Bukhara revolutionaries who emerged from the people's midst, from the artisans, farmers and herdsmen. The subjects of the Emir of Bukhara, the last oriental despot in this part of Central Asia, rebelled in 1920. Shortly afterward the Khiva khandom fell. Beginning with 1925 Samarkand was for six years the first capital of the newly formed Uzbek Soviet Socialist Republic. The capital today is Tashkent, but Samarkand is still the jewel of Uzbekistan.

With its 10 million inhabitants, Uzbekistan is the most densely populated republic in Central Asia. It also has the largest number of nationalities—112 besides the Uzbeks. It is a republic with the most variable climate—cold nights and sultry days, blue and cloudless skies—and the most kaleidoscopic terrain—desert sands and snow-capped peaks, the smooth Aral Sea and turbulent streams, lakes and overhanging cliffs. Flowering oases, cool reservoirs and irrigation ditches, old caravan routes, birch groves, macadam roads melting in the heat of the sun, heavenly nooks of newly cultivated gardens make up the landscape of this Soviet republic which covers an area of about 160,000 square miles. To its north lies Kazakhstan, to its west Turkmenia, to its east Kirghizia and on its south is the Soviet Union's border with Afghanistan.

Marco Polo called Samarkand a great and splendid city in his book on his travels in Asia and the East. Dictated in a Genoa prison, it later served Europeans to chart their first maps of this distant part of the world.

What this Venetian traveler said of Samarkand seven centuries ago is still true. This romantic and beautiful city of Soviet Uzbekistan might well grace a travel folder inviting tourists to our country.

Architectural Masterpieces



The most fascinating tales can be told of the architecture of Samarkand. Its structures vie with the finest examples of Egyptian, Indian, Chinese, ancient Greek and Roman architecture.

In the fourteenth century, during the reign of Timur—or Tamerlane, as he was known in Europe—Samarkand became the capital of feudal Asia. After subjugating many Asian peoples, Tamerlane made Samarkand the political and cultural center of his empire. He had it replanned and built up with dispatch, erected fortresses and magnificent palaces, laid out beautiful gardens. From his campaigns fabulous treasures poured into the city. He imported the most skillful artisans, artists, scholars and architects. His vanity knew no bounds. In the environs of Samarkand he ordered towns built and named them for the world's great capitals—Paris, Damascus, Baghdad and Cairo. But few traces of these small and short-lived "capitals" remain.

In 1404 he had a tomb erected—the Gur Emir (literally: Grave of the Emir)—for his favorite grandson Mohammed Sultan. It is a structure of graceful and airy forms, sumptuous, the portal inlaid with mosaic. Gur Emir's ribbed cupola faced with blue tiles is visible from almost any spot in Samarkand. Tamerlane himself was buried in the tomb, as were his sons Shahrukh and Miranshah,and his grandsons Mohammed Sultan and Ulugh-Beg.

Another notable example of Samarkand architecture is the Bibi-Khanum mosque, also built by order of Tamerlane. It outshone all others in the East. A poet said of it: "Its cupola would be matchless if the sky were not its replica; the arch would be matchless if the Milky Way were not its twin."

The "Friday" mosque was once surrounded by walls with a high minaret at each of the four corners. Of the entire structure only one of the minarets, on the northwest corner, has survived, and only in part. The whole ensemble was once connected by a roofed gallery with several rows of stone columns; there were 400 columns in all. The courtyard was paved with marble slabs and mosaic tile. In the middle of the yard, on a stand, was an immense open Koran. Great crowds came to the mosque for prayer. On Fridays the worshippers included all the adult males in Samarkand.

Little of the splendor of this mosque has come down to us. The fifteenth century builders did not have the technical knowledge to calculate with any certainty the proportions of the portals and the height of the cupolas. In a city subject to frequent earthquakes the gap between the grandiose architectural plans of the sovereign and the limited engineering possibilities proved fatal. The magnificence of the mosque is today only shadowed in the half-ruins.

The visitor to Samarkand is dazzled by the lapis lazuli cupolas, the shining portals, the immaculately white Arabic ligatures and the graceful arches. Though there is a sameness about the architecture, each edifice has its distinct and arresting style.

In the Shah-i-Zinda mausoleums the tourist stands lost in admiration of the ethereal beauty of the architecture, the exquisite work of the decorators, artists and masons.

The Shah-i-Zinda (Living Sovereign) is an architectural group of 20 tombs, most of them built in the fourteenth century. The earliest structures in the ensemble, however, date back nine centuries. The entire group is named for the tomb of Hasham ibn Abbas, believed to be the cousin of the prophet Mohammed, who came to Samarkand in the seventh century with the Arab armies to preach Islam. Legend has it that he met a martyr's death at the hands of infidels while at prayer. His is the principal tomb; the others, in which city notables lie, are ascribed to the eleventh and twelfth centuries. A minaret near the Hasham ibn Abbas tomb is the sole surviving eleventh century structure. The mausoleum itself was a holy place and attracted many pilgrims. Tamerlane later ordered a new tombstone erected over the grave. Stepped and faced with majolica in relief, with quotations from the Koran in gold lettering on each side, it was a splendid example of ceramic work.

The Shah-i-Zinda ensemble has both historical and architectural importance. As the years passed, some of the mausoleums deteriorated and new ones were built to replace them, but the architectural unity remained. The splendor of Tamerlane's reign gave way to the more subdued elegance of brick mosaic; but the later structures were also architectural masterpieces. In them, too, we see the superb craftsmanship of the medieval ceramicists.

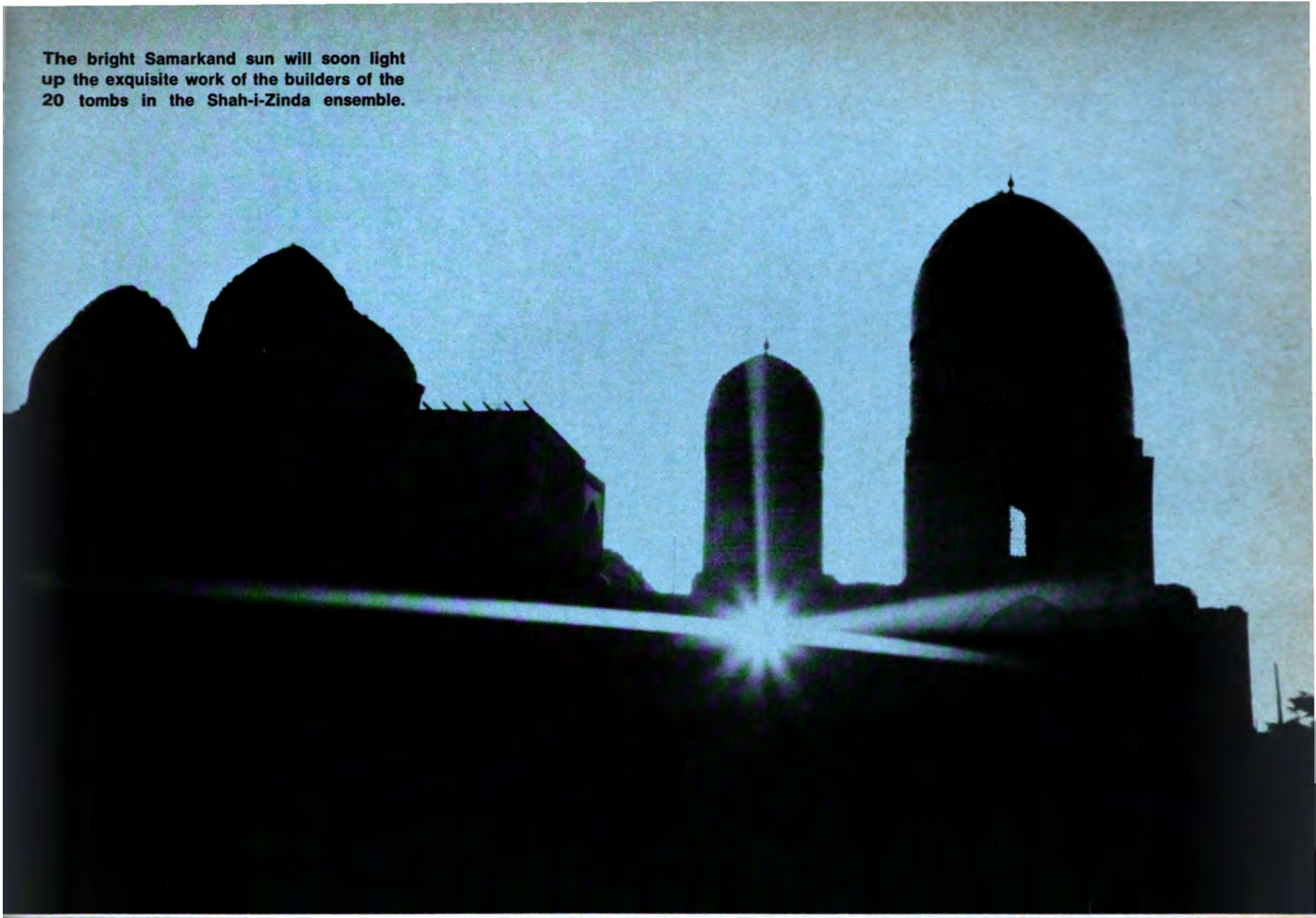
Floral and carved designs in glazed terra cotta were supplanted by inlaid mosaics picturing gardens of paradise. Gleaming white, gold and azure were the favorite colors of the potters who faced these exquisite structures.

In the twenties the Uzbek revolutionaries who led the republic had much to do—teaching the people to read and write, building up the republic's economy. But they did not neglect their cultural heritage.

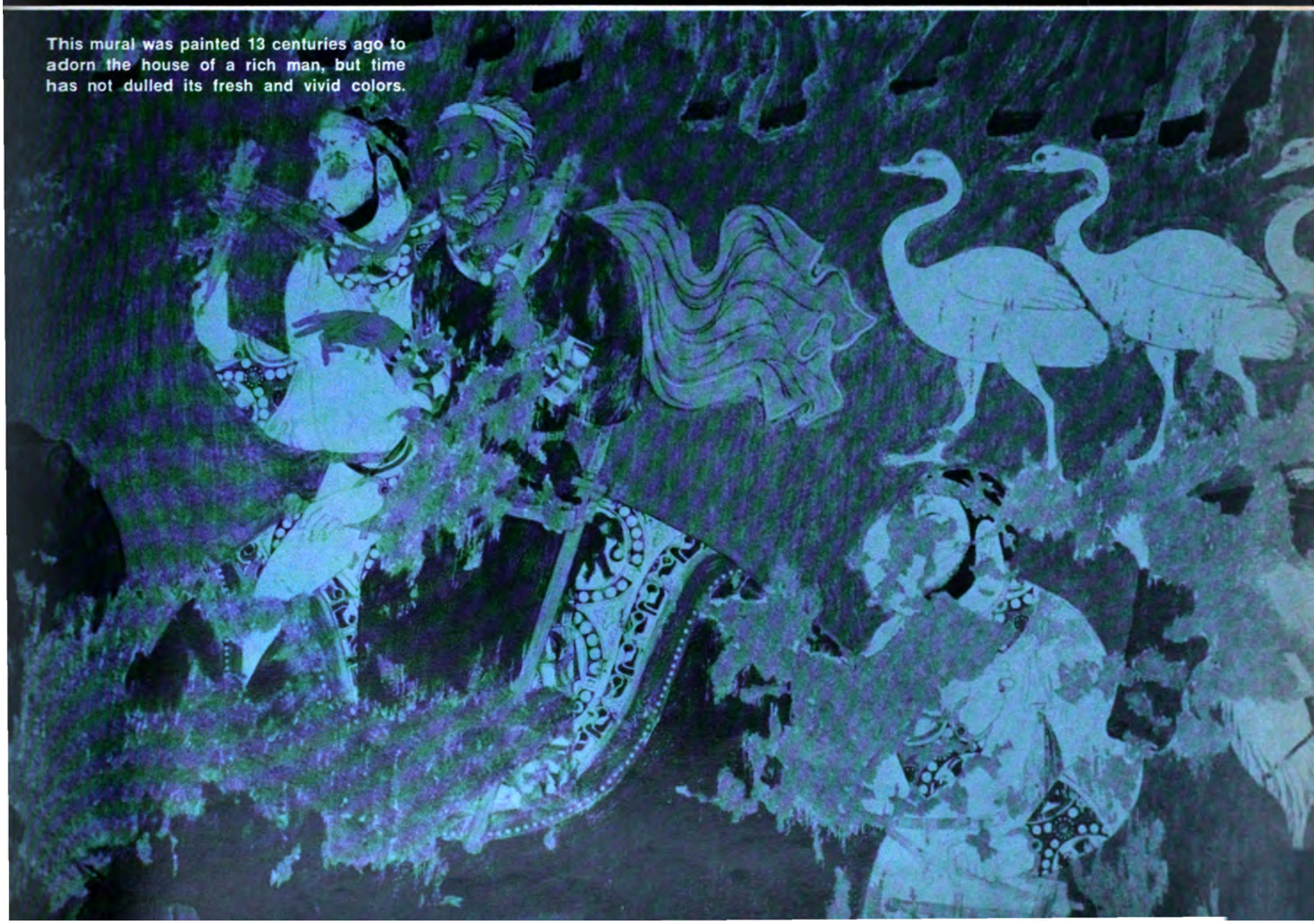
Soon after the Soviets took power, Uzbekistan adopted legislation for the restoration, study and preservation of its historical monuments. Museums were opened in many parts of the republic. At a time when there was still a great shortage of elementary schools, when women still veiled their faces, when the republic was short of funds for irrigation, Uzbek architects were commissioned to draft plans for the restoration of the local masterpieces of architecture. Today much work along these lines is being done by the Institute of History and Architecture functioning under the Uzbek Academy of Sciences. The institute advises government and municipal authorities on restoration, supplying blueprints and estimates. Restoration expenses often run into millions of rubles that come from agriculture and industry. Money made from today's cotton, coal, oil, gas, industrial items and machinery goes to restore these time-ravaged architectural monuments.

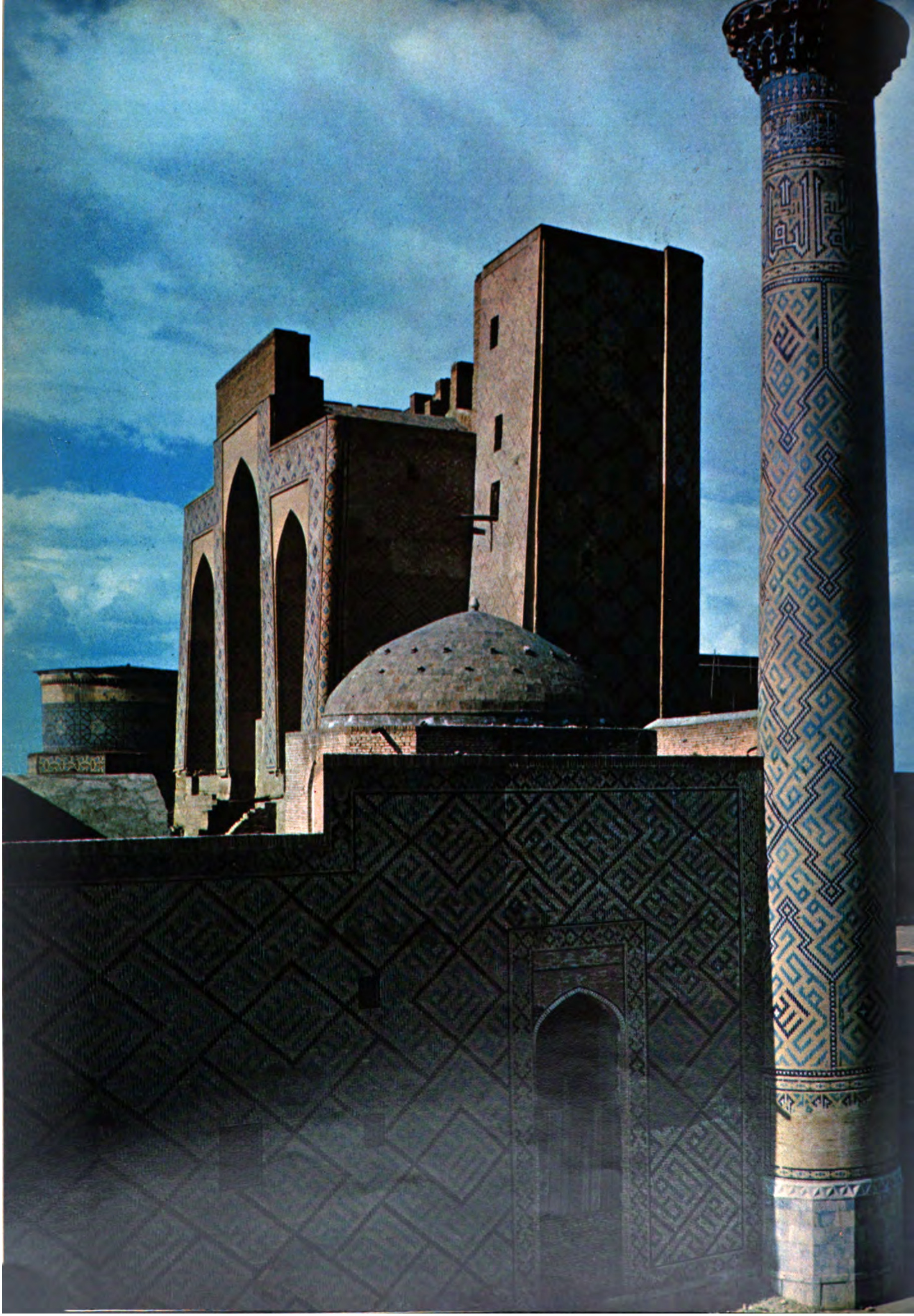
Within the lifetime of a single generation enormous changes have been wrought. The Uzbeks have become a scientifically-

The bright Samarkand sun will soon light up the exquisite work of the builders of the 20 tombs in the Shah-i-Zinda ensemble.

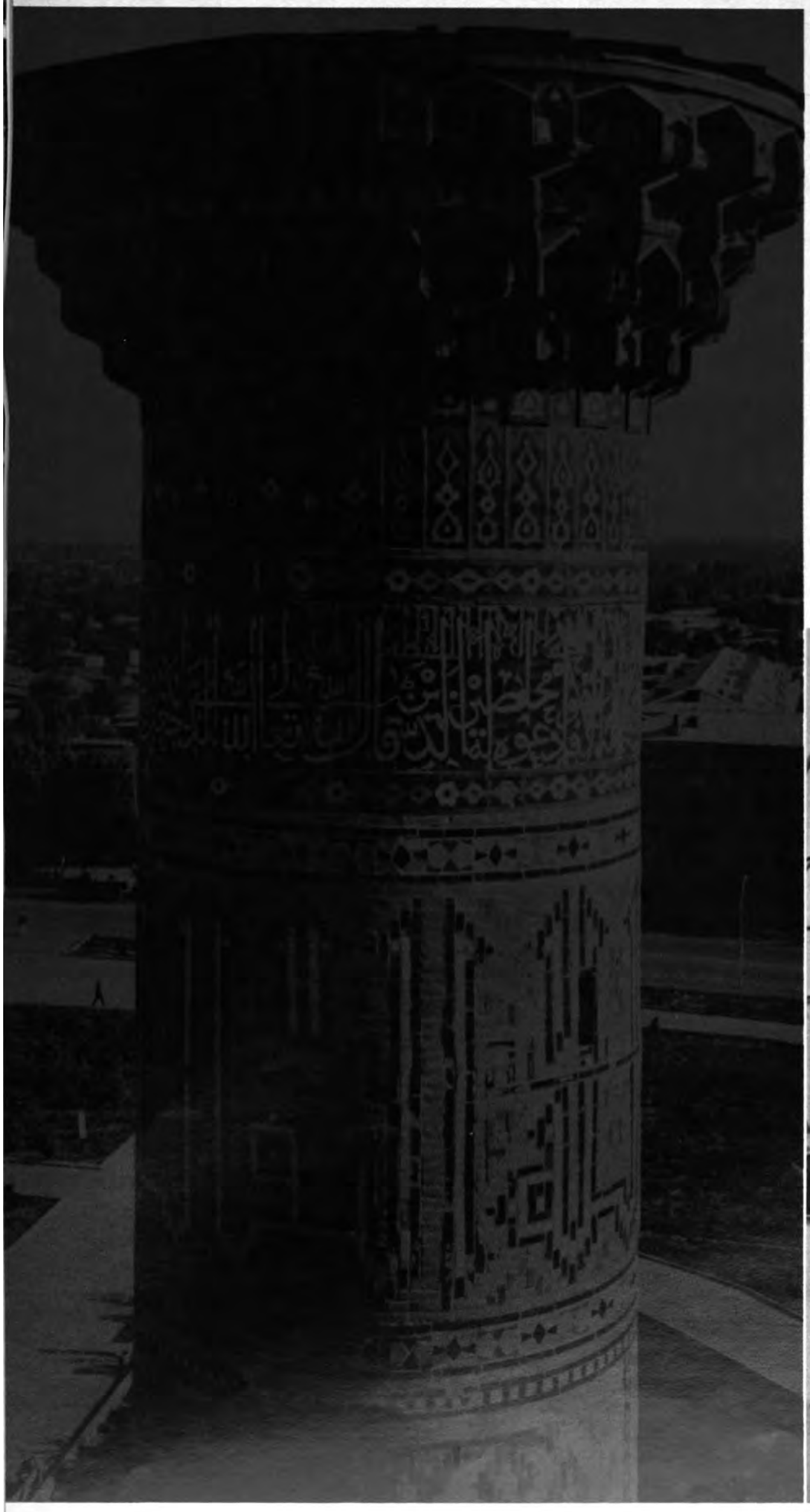


This mural was painted 13 centuries ago to adorn the house of a rich man, but time has not dulled its fresh and vivid colors.





This architectural ensemble of three Moslem colleges on Registan Square—the Ulugh-Beg, Shir-Dor and Tilla-Kari madrasahs—built in the Middle Ages, is the heart of Samarkand.







minded people, living at today's hectic pace. But their interest in their past history and culture has grown. The architectural monuments of Samarkand are inseverable from the Uzbek scene. They bring us some of the wisdom and romance of ages long past; the quaint minarets, the splendid mosques and the onetime Mohammedan seminaries are living bits of the nation's history.

The cruel despots who ordered these magnificent structures erected are forgotten, but the gifted builders and craftsmen who expressed the national genius are remembered. Weary of the monotony of modern architecture, the eye delights in the bizarre blue domes, the odd inscriptions across the dazzling lapis lazuli of the tombs in the Shah-i-Zinda ensemble. The guidebooks tell you that a distinguished craftsman called Fahri Ali wove his name into the floral design of one of the portals, and with gratitude for the beauty he produced, you look for the name of this artist.

A New Era



The headway Uzbekistan has made in the last few decades Samarkand economists describe as fantastic.

It is well to remember how great the contrast was in Uzbekistan between the fabulous wealth of the feudal lord and the dire poverty of the peasant, who rarely owned even his tiny plot of land.

The people were under the sway of the Koran and the priesthood, in the powerful grip of religious prejudice and intolerance.

Incurable disease and epidemics decimated the population. Cattle died, harvests failed. Polygamy and large families hastened the exhaustion of the soil. Young girls were sold into marriage. The flogging of wives was sanctified by law, and women lived in virtual bondage.

It is well to have a clear picture of this if we are to understand the magnitude of the task which confronted the Uzbek Marxists, followers of Lenin, when Uzbekistan became a Soviet republic.

A Russian journal of education noted in 1906 that at the rate at which learning was being spread then it would take Uzbekistan some 4,600 years to wipe out illiteracy.

In 1897 only 3.6 per cent of the Uzbek people could read and write. In 1926, 11.6 per cent were literate; in 1939, 78.7 per cent, and in 1959, 98.1 per cent.

These statistics come from the census for each of these years. It took not 4,600 years but less than half a century to do away with illiteracy in Uzbekistan.

All Uzbek children go to school. When a child is out for a month or two without a valid reason, the board of education takes drastic action.

The last census, 10 years ago, showed that among the industrial workers of Uzbekistan 12 out of every thousand were college or technical high school graduates or took correspondence or evening college courses; 37 out of every thousand were high school graduates, and 163 out of every thousand had an incomplete secondary education or were going to high school.

In the 10 years that followed the figures rose progressively. And from figures brought up to date we know that today 182 persons out of every 10,000 are college or university students.

Uzbekistan now has 38 colleges and universities, 149 specialized secondary schools and more than 9,000 general education schools. Education is for everybody, regardless of social background, religious creed or color of skin.

People and Machines



A group of courageous women Communists of Russian, Jewish, Tatar and other backgrounds came to Uzbekistan in the early twenties to help Uzbek women break down the humiliating customs of the past, to help emancipate the Asian woman. Special women's bureaus were set up locally to give medical, legal and financial assistance.

Here is the petition of a peasant woman named Jangadai Babekova, noted down at one of these bureaus:

"Following our custom, my parents arranged a marriage for me when I was five years old. At thirteen I married the man to whom I was promised. Later my husband took a second and then a third wife. We three women did not get along and I left. My parents were dead, and I went to live with my uncle. One day my uncle said that he had sold me to a man called Turda from the Chinaz district. No arguments helped, and a month later my would-be husband arrived and took me away with him. He had 150 sheep, cows and horses, but I could not live with him and ran away. This man now demands that I give back the money he spent on the wedding. I have no money. I am applying to the women's bureau to help release me from this payment."

Such woeful petitions can be found by the hundreds and thousands in the state archives, written down from the spoken words of illiterate women who applied for protection to the women's bureaus of those years.

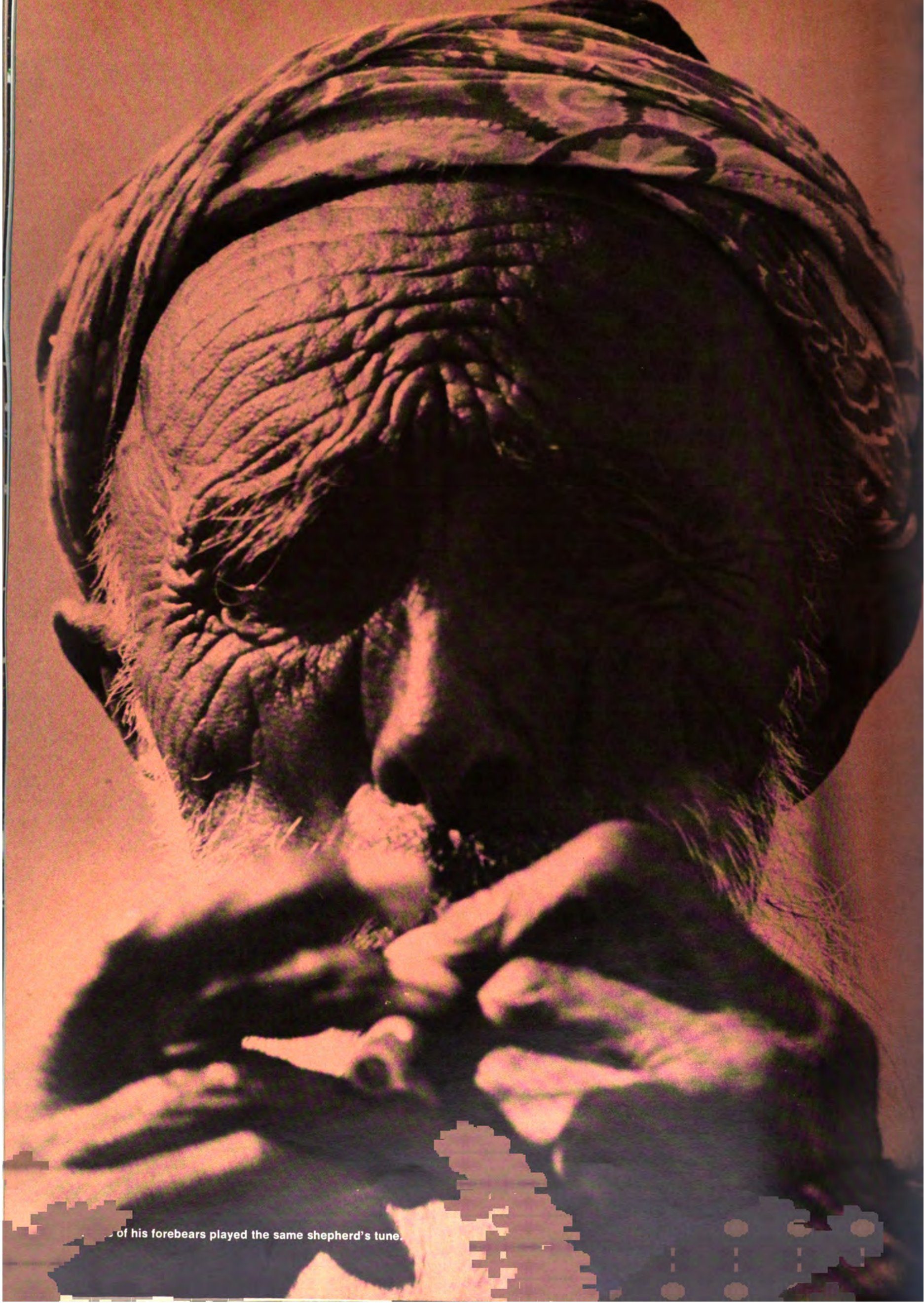
Today almost half of the gainfully employed people in Uzbekistan are women. Of the number, 70,000 are university and college graduates; 17,000 are engineers and technicians; 900 have



Far left: It took the hand of a gifted artist to draw these characters, white on blue, calligraphically on stone; and it took the ingenuity of today's gifted engineers to restore these monuments.

Top left: This girl's grandmother never dared show her smile to the rest of the world; her face was always covered with a veil.

Where caravansaries once sheltered weary travelers, a big hotel is being built for the rapidly increasing flow of tourists.



of his forebears played the same shepherd's tune.



Ballerina Enna Pak's costume blends with the ancient architecture.

The majestic dome of the Shir-Dor madrasah towers above Registan Square, repeating the color of Samarkand's sky.

New and old Samarkand stand side by side. Mosque domes and minarets are everywhere.

master's degrees; 30 have doctor's degrees; 34,640 women are deputies to the local Soviets, and 141 women are deputies to the republic's Supreme Soviet.

In the oriental quarter of Samarkand there is a teahouse where green tea is served with *halva* and a book can be borrowed from the teahouse library. There I came across a tattered copy of *Inostrannaya Literatura* magazine with an article by American psycholcgist Erich Fromm. The article dealt with man's alienation in modern society. A reader, I noticed, had checked off some of the passages in the margin and here and there written exclamation points. A teahouse attracts the people from the neighborhood, mostly old folks who come to chat, but the reader of that article seemed to me to be a young man and most likely a student.

Erich Fromm says that in capitalist society alienation is the fate of every man. It penetrates every area of his life. Modern man created a whole world of new things, new mechanisms, but his creations now tower above him and oppress him. He feels he is their servant, not their master. Fromm sees the social conditions of capitalism, and their alienating effects on the human personality, as inevitable results of the industrial revolution.

But in Uzbekistan, too, we find a world of machines of which man did not even dream earlier. They produce annually more than 14 billion kilowatt-hours of electric power; millions of tons of coal, oil, cement and fertilizer; thousands of tons of steel, and hundreds of billions of cubic feet of gas.

Future chemical engineers at work in a Samarkand University lab.



Uzbek plants manufacture every year thousands of pieces of farm and building equipment, textile machines, electrical appliances, clothing.

A sociologist from Tashkent or a psychologist from Samarkand, observing the worker on the assembly line, the truck driver at the wheel, the builder on the twelfth floor of an iron and concrete building frame, will report many effects of the technological process similar to those in Princeton or Turin. As elsewhere in the world, big plants and machines affect the life and needs of the present-day Uzbek.

And yet the Soviet Asian—whether from Samarkand, Bukhara or the small town of Gijduvan—precipitated from feudalism into the age of modern socialist technology, does not suffer from facelessness or loss of identity, for he feels the pride of the maker and master of production.

Tradition and the New



Traditionally Samarkand is a wayfarer's city. It used to be the hub of many caravan routes, among them the great silk route from Europe to China. Traders on their way to India stopped at the colorful bazaars of Samarkand. The pilgrim and the wayfarer could always count on a rug to sleep on and the coolness of a shady oasis. You feel today, too, the traditional atmosphere of hospitality even when you drop into an office. You are served tea, treated like an honored guest and only then do you talk business.

With modern ways having taken root, rising standards of living and growing requirements, thousands of problems crop up, their solution often depending on the wisdom and acumen of people in key positions. One of these problems is housing. There is a growing demand for cooperative building. With free land available and the state giving credits, that would seem easy but for the shortage of building workers. Another problem: Samarkand planning and trade organizations suddenly find themselves faced with an increase in buying power they did not foresee. The result is that expensive and fashionable woolens, good furniture, carpets, furs, gold and silver jewelcraft are quickly bought up, as are cars and motorcycles.

Brisk and growing trade has brought on a shortage of salespeople. This is a problem with a social angle. In old Samarkand peddling was almost in the blood. Little boys would go around selling cold water or matches or peddling rags; they did not go to school. But to the boy or girl in Samarkand today selling is way down on the list of desirable professions. At the top of the list are doctor, writer, engineer, technician, veterinary surgeon, agricultural expert, planning expert, flier, ship captain and teacher. Many commercial and other schools in Samarkand are now training salespeople; the problem is to change attitudes.

Moslem rites are observed and practiced by religious people, mostly of the older generation. Grandparents, for example, will often insist on the circumcision of a grandson. What should the young father do in such a case?

This was the problem that Ibodulla Ikramov, an expert electrician and a candidate for membership in the Communist Party, was presented with a year ago. His wife bore him a third child whom he named Alisher after the great Uzbek writer Alisher Navoi. His parents wanted their grandson circumcised. But what would his communist comrades say on hearing that this religious rite was performed at his home in the presence of a large company? A simple solution was proposed: "Don't harm the child. Don't let your parents force their beliefs on you." But the 30-year-old electrician was troubled. Ibodulla honored his parents; like so many other skilled and educated people in Samarkand, he had been brought up in a home where old customs and traditions were not that simply discarded. Like many others, he could not easily arrive at a decision.

For today's Uzbeks there are traditions worth cherishing. To bring these traditions to terms with modern life is a problem for Samarkand's artists, architects, demographers, doctors, party functionaries, writers and engineers.

The Handicrafts



In Samarkand, a short distance from the picturesque Siab bazaar, is the pottery of a widely known craftsman. The work of Umar Jurakulov, usually called Umar, is known to collectors of pottery in Tashkent and Moscow and to visitors at international fairs.

Umar is 75 years old. His blue, deep-set eyes look at the changing world with interest. Accustomed to work, he steps as lithely as he did 30 or 40 years ago. Beneath his strong hands, gently and deftly manipulating the soft clay on the rotating disk of the potter's wheel, a beautiful tray is shaped to hold the traditional Uzbek dish of mutton and rice.

Umar's family has been making pottery for almost four and a half centuries. A distant ancestor, founder of the tradition, is said to have lived at the time of Ulugh-Beg, grandson of Tamerlane.

I watched the potter put the finishing touches on a graceful pitcher. His hands moved slowly, and you could almost feel the pride he took in his work. He also showed me another piece of his work, an exact replica in terra cotta of one of the Shah-i-Zinda tombs.

"This is a copy of the Hodja-Akhmad tomb," he said. "A few years ago the idea occurred to me to make tiny clay models of all of Samarkand's beautiful structures. There are always tourists in Samarkand and they bought them up as souvenirs. In fact my pottery will be kept busy for five years with orders for such souvenirs. There," he pointed to a shelf, "are all of the city's beautiful sights, the Gur Emir tombs, the well-known madrasah in Registan Square where for several centuries my forebears had a pottery, and a portal of the Bibi-Khanum mosque."

Many of the objects this old potter turns out are of high artistic value. On the shelves of his workshop stand exquisitely shaped pitchers and goblets entwined by vine designs or clasped by a fairy tale dragon, bowls adorned with Uzbek ornamental painting, platters, water jugs, figures of slow-moving camels, charging buffaloes and four-headed dragons.

These handmade wares, displayed on the counters of Samarkand stores, have a beauty and elegance for which the thousands of machine-made articles that come off the conveyor are no match.

Handcrafted and machine-tooled goods are in competition in Samarkand—the velvet skullcap embroidered in silver thread and the super multichannel television set, the simply designed table knife with a bone handle and the gleaming stainless steel cutlery set, the sturdy factory shoe and the dainty handmade slipper of leather softened, moistened and stretched by hand, the gracefully designed handmade trunks and chests of drawers and the varnished and polished walnut sideboards. The little skullcap on the counter of a television store looked to me like an ancient tomb tucked in between a group of prefabs. I do not wish to disparage our age of utility and quick housing, but just as the Gur Emir architectural group commands our attention and to this day delights us by its beauty, so Samarkand's embroiderers, the potters of ancient Khiva, the coppersmiths and carpet weavers of the little township of Gijduvan, the chasers of Samarkand, the tapestry makers of Shakhrisyabz, who incidentally carried off the grand prize at an international fair, produce lovely things that we are learning to appreciate. There was a period when the handicrafts fell into neglect. The local planning experts were too busy with cotton and cotton harvesting machines, with oil, gas and coal, road and irrigation ditch building, to give their attention to the local arts and crafts. These declined, and the young craftsmen took jobs in industry. Today, with large subsidies from the state, the handicrafts are being vigorously revived. During the period of neglect Umar's pottery had a hard time. But his eager and enthusiastic apprentices would not let the pottery go to seed. They repaired, enlarged and refitted the shops with their own hands, wired them for electricity, installed electric kilns and other mechanical devices.

More than 400 persons served their apprenticeship under Umar during and after World War II. His most gifted recent pupils, he says, are Mansur Nasyrov, 33, and Abdurakhim Mukhtarov, 39. Both came to him when they were boys. One of his present pupils is 20-year-old grandson Ilkhan Vakhidov, who will carry on the family tradition.

Another big name in Uzbek crafts is Ikram Khalikov, 63, a silversmith with a workshop at the bazaar in the township of Gijduvan. He has three sons, one a promising planning expert, another a mechanic at a telephone exchange and the third a student at the Frunze Polytechnic College. Ikram is known far and wide for his famous Gijduvan knives, which are always in demand. When his sons come to see him, they turn up their noses at his small forge and his collection of simple tools. This somewhat patronizing view of their father's craft they acquired after they became educated men, conversant with the mysteries of their country's economy, with electricity and a foreign language like English. But had there been no epoch-making changes in Samarkand, the sons of this silversmith could hardly have done better than pursue their father's trade.

Two years ago Normat Sultanov, famous for his embroidery in gold thread—two of his skullcaps were displayed at Expo 67—arrived in the town of Gijduvan from Bukhara. He took on 80 apprentices, mostly girls who had finished the local schools, was given premises at the bazaar and in a few months trained 200 people.

Handicrafts have been given a new lease on life. The Ministry of Local Industry sends its agents to all parts of the republic to assist and encourage handicraftsmen. Many craftsmen, notably potters—Umar, for example—are members of the Soviet Artists Union. This gives them standing, higher prices for their articles, and commissions. The potters' artistic wares are on display at international exhibitions. Museums buy entire collections of pottery, articles of metalcraft and carved marble.

With master craftsmen teaching groups of apprentices and the training paid for by the state, the handicrafts have a promising future in Samarkand as elsewhere. Good training and the recruiting of young people with a high school education as apprentices will help raise standards. Wares of individual design, like pottery and embroidery, will be able to command the prices that originals should.

Individuals



Samarkand had the reputation for being a more enlightened city than, for example, conservative Bukhara, long ruled by fanatics. Islam was rather tolerant of Christianity and other religions, an attitude reflected in its history, architecture and poetry. Ulugh-Beg, Tamerlane's grandson, who founded in Samarkand the largest astronomical observatory in Asia and worked out his Stellar Tables there, was one of the most educated men of his day. In Registan Square stands a group of colleges founded in the Middle Ages. It consists of three main colleges or madrasahs, one called the Ulugh-Beg, another the Shir-Dor and the third the Tilla-Kari, erected at different periods. The first college had 50 rooms for students, and it is said that Ulugh-Beg, then governor of Samarkand, himself taught there. Restoration of the college buildings has almost been completed, so that they rise today in all their former glory, with lofty domes and minaret turrets and magnificent portals; even the minarets which had listed were straightened, a considerable achievement of the restorers. The seventeenth century portal of the Shir-Dor madrasah has a most impressive design of tigers and deer in the rays of the rising sun done by a master craftsman named Abdul Jabar. But perhaps nothing could better adorn the whole group of college buildings which we value as a monument of architecture than the inscription Ulugh-Beg ordered carved on the doors of the madrasah he built: "To crave knowledge is the duty of every Moslem man and woman." This utterance was an impertinence unheard of in those days and a defiance of the opinions held by all pious sheiks.

Hating Ulugh-Beg, who had succeeded to the Persian crown, the reactionary priesthood struck a bargain with his eldest son, long his father's bitterest foe. On a cold and damp day, when Ulugh-Beg was on his way to Mecca, he was chopped to death in a small village near Samarkand. This put an end to 40 years of his rule—as Samarkand's governor and then Persia's Khan—during which the arts and culture flourished. Ulugh-Beg was a scholar and an astronomer, and what he said about the need for education has today—520 years after his death—become reality.



The Jurakulovs have been potters for four and a half centuries. Umar Jurakulov's work is known to collectors internationally.



A section of Samarkand's Siab bazaar in the fall. The Uzbek melon is famous. The republic's money crop is fine long-staple cotton.

Handicraft is the big bazaar attraction—Samarkand embroidered skullcaps and chased work, Khiva pottery, Shakhrisyabz tapestry.

Wrestling has a venerable history in Central Asia. A *kurash* (wrestling) match at a Samarkand sports school for teenagers.





The striking changes in the life of the city are reflected in the lives of its people, citizens and visitors.

I happened to speak to orchestra conductor Dilbar Abdurakhmanova, a young woman in a dark tailored suit, who came to Samarkand to conduct the score of *Forty Maidens*, a recent ballet hit.

She told me she had been with the Uzbek State Opera and Ballet Theater in Tashkent since 1957 and that her father was a singer.

"My father did not have the chance to study," she said. "Times were different then. But I am a graduate of Tashkent Conservatory. I wanted to be a violinist but found I could do better as a conductor. In the 30 years of its existence the conservatory has trained so many singers and musicians that I keep running into our graduates when I go on tour—in Moscow, Leningrad, Dushanbe and other cities."

In the Tashkent theater Dilbar Abdurakhmanova conducts *Aida, Pagliacci* and *Swan Lake.*

A woman textile worker, Tursunoi Abdurakhmanova (no relative of the orchestra conductor), employed at the Margelan silk mill, famous for its silk fabrics, told me her life story. The war left her an orphan; her father fell at the front. She was brought up in a children's home, went to a vocational school where she qualified as a textile worker. She finished high school while working and is now enrolled in a correspondence college. She makes a good wage and lives quite comfortably.

Khalid Nasyrov, chairman of the Moskva Collective Farm and one of the republic's top cotton growers, was in Samarkand on business. Here is what he told me:

"A half century ago there were no more than two people in our village who could read and write. Today we have 460 with a college or a technical high school education. Why is our village, Jizaklik, so well known? Not, I assure you, because about 60 miles away the cousin of the prophet Mohammed was supposed to have stopped off, but because it is the birthplace of a number of famous people, among them the Uzbek writers Sharaf Rashidov (incidentally he is First Secretary of the republic's Communist Party Central Committee) and Sarvar Azimov and the poet Khamid



Alimjan. We have a secondary school from which 130 boys and girls graduate every year. And one out of every two graduates goes on to college or technical school. Our collective farmers have large bank accounts; 35 of them have their own cars, and hundreds of motorcycles have replaced the old donkey."

When I met Mamatkul Arabov, film director and cameraman at the Uzbek film studio, I learned that he came from a very ancient family that arrived in these parts with the earliest Mohammedan preachers. In the late eighteenth century the Arabovs were prominent merchants trading in furs, tapestries, gold and silver. The progressive bourgeois group—the *jadidi*—held secret meetings in the basement of the Arabov home. Faizulla Arabov, son of the millionaire Ubaidulla, was a member of this group. Later he was elected to the clandestine Central Committee of the bourgeois Young Bukhara Party and participated in the popular movement against the Emir of Bukhara. His son Abdukadyr together with Jur-Bek, an elder relative, went to revolutionary Moscow with a mission from the Bukhara Emir.

After the fall of the Bukhara Emirate Abdukadyr Arabov, then 23 years old, returned to Bukhara and was appointed diplomatic courier of the new Ministry of Foreign Affairs, a job which took him from Bukhara to Samarkand and Tashkent. Later he worked at the Ministry of Foreign Trade in Moscow. In May 1945 his son Mamatkul Arabov, a cameraman, took shots during the fighting in Berlin of the burning Reichsbank where his millionaire grandfather once kept his capital.

Mamatkul Arabov, descendant of this ancient family, is today an Honored Art Worker of the Uzbek Republic.

* * *

Neither Uzbek civilization nor a city like Samarkand can be understood without its origins, its background of tradition, legend and family, all of which go back to antiquity. When Alexander the Great stopped in Samarkand during his Indian campaign, he said: "I was told that Samarkand is beautiful. But the city I now behold is far more beautiful than I could ever imagine."



A new generation of Uzbek women, incomparably different from the kitchen-bound chattels of prerevolutionary times, who were often sold to husbands before they reached puberty. These girls have just graduated from a teacher training college. They still wear the traditional Margelen dresses of bright-colored satin and braid their hair as their mothers and grandmothers did. But their smiling reflections in the fountain give promise of an infinitely happier and more productive future. In a few months they will be teaching geography, mathematics, foreign languages and other subjects. Today half the gainfully employed people in Uzbekistan are women, and 70,000 of them are college and university graduates—900 with master's degrees and 30 with doctor's degrees.

THIRTY YEARS AND THE FUTURE

By Spartak Beglov
Master of Science (History)
Commentator of Novosti Press Agency

ON SEPTEMBER 1, 1939, some SS-troopers in mufti made a raid on the German radio station in Gleiwitz. It was with this provocative incident 30 years ago that the Second World War began. And almost exactly 25 years before that—on June 28, 1914—some shots fired by Gavrilo Princip, a Serbian terrorist, in the town of Sarajevo killed the Austrian Archduke Francis Ferdinand and his wife, signaling the beginning of the First World War.

These were indeed global wars. The first involved countries totaling 1.05 billion people, and the second 1.7 billion people. Their weaponry was also of global proportions. During the First World War the six belligerent states produced 140,000 artillery pieces, 9,000 tanks and 190,000 planes. The four major participants in World War II supplied the fronts with more than one million artillery pieces, 625,000 planes and 286,000 tanks. The Second World War also brought forth the A-bomb—the most horrible weapon of destruction.

Ten million men died and more than 20 million were wounded or crippled in World War I. The toll of the Second World War was even more terrible: more than 55 million dead (half of them civilians) and 35 million wounded or crippled.

Barely 21 years had passed from the end of the First World War (November 11, 1918) to the beginning of the second—between the two most devastating cataclysms in human history!

And what are the lessons? Is there any guarantee that larger wars are not now germinating?

"War is divine in itself, for it is a world law," maintained Joseph De Maistre, a French philosopher of the nineteenth century. Kant and Nietzsche also wrote in favor of war as a "natural state" of the human race.

I disagree. Karl von Clausewitz, the famous German military theorist of the early 1800s, was perhaps the first to look at the core of the matter. He said that "War is politics continued by other means," that is, by means of direct, physical violence. Karl Marx, Friedrich Engels and Vladimir Lenin, the founders of scientific communism, took stock of this formula. They decided that it should be concretized; only when tied to social conditions could it be used as a clue. "Every war," wrote Lenin, "should be regarded as a continuation of the policy of given interested powers and different classes in them at the given time." And indeed the nature of war, if one proceeds from actual facts, is determined first by the prevailing socioeconomic system and by the classes who hold power in it. Inevitably, international conflicts are caused by the economic and other contradictions of concentrating property in the hands of particular classes and by the desire to find a way out of these contradictions by widening the spheres of investment capital and increasing markets. Such contradictions are especially characteristic of the period of imperialism, that is, of the era of the active exploitation of capital which began at the end of the nineteenth century—the quest for new markets and the struggle to recarve the globe.

The participants in this struggle try to meet its contradictions either by making political demands on their opponents or by spearheading blows against states with a "different ideology"—states which present an obstacle to expansion.

Thus, not human nature but the social structure is to blame for wars. When some deranged individual talks of the need for revising frontiers, then people neglect to listen, judging him insane. Yet, when such thoughts become the program of a group or organization and then of a ruling political party, then even people not versed in politics see a threat to world peace.

The question is: Are those who realize the danger capable of preventing it?

On the eve of the First World War, hardly any of the eventual participants attempted to curb the aggressive German regime. Their inertia was no accident: The rulers of many of these countries shared the idea that war was inevitable, that armed struggle to recarve territories was legitimate. In effect they were merely awaiting a pretext in the form of a first move by the German "fighting cocks." On the eve of World War II events developed according to much the same pattern. The selfsame Germany had emerged as the seat of revanchism and belligerent nationalism, right in the center of Europe. This time the expansionist claims of the German imperialists were embodied in a Hitlerite fascist ideology.

Another new factor had been added to pre-World War II Europe: socialism. Its embodiment was the Soviet Union. Is the nature of the socialist system compatible with an unjust war? Can it become a source of expansionist aspirations? The answer is No. The socialized means of production preclude the existence, under socialism, of classes and groups interested in the seizure and recarving of markets, spheres of capital investment, etc.

As perceived by some Western circles, the world before the Second World War was confronted by two challenges: one in fascist garb from Germany's revanchist militarism, and the other allegedly from socialism, from the Soviet Union. I say allegedly because in reality there was no challenge on the part of the Soviet Union, either then or at any other time.

In the thirties this outlook led to a policy of appeasement, culminating in the Munich agreement of September 29, 1938, when Hitler got Britain's and France's okay to dismember Czechoslovakia—to occupy the Sudetenland, where the Germans were a minority among the Czech population. The Nazis regarded this deal as a blessing for the seizure of the whole of Czechoslovakia. In those days the Soviet Union was the only country which consistently championed a rebuff to the fascist claims to Czechoslovakia. Moscow declared its readiness to assist its neighbor even if France did not honor similar commitments. Large concentrations of armed forces, tanks and aircraft were sent to the Soviet Union's western frontier. But the aid offered by the Soviet Union was rejected.

This inertia boiled down to encouraging Hitler. Unfortunately those who encourage a bandit often become his victims. Appeasement whetted Hitler's appetite for both East and West in equal measure.

An objective assessment of events just before World War II is important. But many historians shun a detailed analysis of, for instance, the long, extremely difficult talks on collective measures for stopping Hitler's aggression—the talks which the Soviet Union had with Britain and France in the spring and summer of 1939. In dealing with the German-Soviet nonaggression pact concluded in August 1939, marked bias is often shown. One gets the impression that the many years of anti-Hitler activities by Soviet diplomats which preceded the pact have been deliberately stricken from history so as to confound cause and effect.

Yet, the Soviet Union had made exceptional efforts in 1933-1939 to organize collec-

tive security in Europe. The Soviet people's major efforts and thoughts at that time were channeled toward the country's economic and cultural development. But as the fascist menace grew, they also had to think of their country's defense.

Academician Ivan Maisky, the famous Soviet diplomat and historian, commented about this period in his book *Who Helped Hitler?* (Moscow, 1964). Citing the aims and importance of a united front against aggression in Europe—the front which Soviet foreign policy tried to establish in the summer of 1939, he says:

> Hitler and Mussolini knew very well only one argument—force. Thus, to prevent further fascist aggressions and their inevitable consequence—the Second World War—it was necessary to form such a mighty coalition of powers, not interested in starting a war, so that Hitler and Mussolini would lose the desire to test their strength. We considered that Britain, France, and the Soviet Union combined had enough such strength. Yet, before this strength could stay the hand of the fascist dictators it was necessary to dispel any doubt that it would actually strike at them if they attempted another aggression. And this, in turn, demanded that the unification of the aforementioned big powers should be obvious and indisputable, that the sphere of its influence should include the whole of Europe, rather than its individual parts, and that the terms of unification should contemplate the possibility of a more extensive and automatic system of sanctions against the aggressor.

On June 2, 1939, the Soviet Government handed its partners in the talks its draft pact on mutual aid for preventing aggression in Europe. But this draft was not destined to be implemented: The subsequent talks at military mission level got bogged down in fruitless delays.

It is interesting that such a politician as Winston Churchill makes, in his memoirs, the following assessment of the 1939 talks:

> There can be however no doubt, even in the afterlight, that Britain and France should have accepted the Russian offer. . . . The alliance of Britain, France and Russia would have struck deep alarm into the heart of Germany in 1939, and no one can prove that war might not even then have been averted. The next step could have been taken with superior power on the side of the Allies. The initiative would have been regained by their diplomacy. Hitler could afford neither to embark upon the war on two fronts, which he himself had so deeply condemned, nor sustain a check. . . . If Mr. Chamberlain on receipt of the Russian offer had replied: "Yes. Let us three band together and break Hitler's neck" or words to that effect, Parliament would have approved. . . . History might have taken a different course.[1]

Thus, the Second World War could have been prevented had the Soviet Union, Britain and France resolutely formed in good time a united front against Hitler.

Hitler saw very well which of his opponents had the will to resist and which were wavering. And he dealt his first blow at these waverers—to be more precise, at those who fell prey to class ideological prejudice against the Soviet Union.

The Soviet people realized full well that the main point in Hitler's plan for carrying out his "historic mission of defending Western civilization against bolshevism" would be an attack against the Soviet Union. That is why they used the 22 months between the signing of the Soviet-German nonaggression pact and the German army's invasion of the Soviet Union to increase preparation for X-day and improve the country's defense. X-day came on June 22, 1941—Hitler attacked without warning, treacherously violating all his treaty commitments.

A new stage of the Second World War began. Following the iron logic of self-defense and rebuff to aggression, states with different social systems finally united against a common enemy. Better late than never!

Was this a normal or an unnatural alliance? Those who had encouraged Hitler to march east saw it as patently absurd. This viewpoint was shared by the bankers and armaments kings who supplied the German armies with all they needed. Yet, in those days there were some leaders in the West who thought quite differently, among them the selfsame Winston Churchill and Franklin D. Roosevelt. They realized very well who was the real enemy; for them the coalition to crush fascist militarism was normal and natural.

Thus it all depends on how well one understands profound historical tendencies. In this case, those who reasoned correctly saw in nazism the most vicious and adventurist creature of the old system. Supporting nazism meant subjecting the system itself to deadly danger. On the other hand, the 25-year-old Soviet state did not pose any danger to other nations. It consistently strove for peaceful coexistence with capitalist states. Experience showed, to all those who could read it aright, that there were objective conditions for such coexistence. Because he spelled a deadly danger, Hitler, an adventurist who did the bidding of his shortsighted patrons, enabled people of states with different social systems to show they could do more than coexist—they could act as comrades in arms in a decisive battle over mankind's destiny.

It is precisely in this light that the Soviet people regarded their role in the Second World War. Apart from defending themselves, they made a priceless contribution, with their very blood, to the cause of liberating Europe and saving mankind from fascism and slavery. This called for a more than human effort by our country and people. War came when the country was in the midst of making a profound postrevolutionary transformation, when many things were only in the process of establishment, uncompleted. The war turned everything topsy-turvy. The sudden attack of Hitler's 200 divisions, including 50 divisions of his satellites, led to the occupation of substantial parts of the country. Yet, Soviet people did not lose heart—they mustered forces for decisive counterblows.

The defeat, in December 1941, of the nazi armies which had attacked Moscow blasted the myth of the fascist troops' invincibility. And after the Battle of Stalingrad in 1942-1943, the war turned in favor of the Soviet troops. In the summer of 1943, the battle of the Kursk bulge broke the backbone of the nazi military machine. Its complete destruction was now in sight.

The armies of the Third Reich left on the fields of Russia, the Ukraine and Byelorussia innumerable smashed armaments and millions of dead. They inflicted on our country a loss such as no other people had ever sustained. More than 20 million Soviet citizens died on the battlefield, under the ruins of thousands of villages, in front of nazi firing squads, in Hitlerite "death factories." As many as 70,000 towns and villages were razed to the ground. The country lost about 30 per cent of its national wealth.

Great were the efforts of the other allied countries which inflicted blows on the military machine of Hitler and his partners in Europe and the Far East. In this historic confrontation with the aggressor, they also sustained substantial losses. During the war the armies and the peoples of the allied countries established fruitful, militant cooperation.

The Soviet side scrupulously fulfilled its commitments to the Allies—an illustration was the mighty offensive of Soviet troops all along the front in the beginning of 1945. This crushing blow at the German troops was inflicted ahead of the time planned by the Soviet command, in answer to Churchill's and Eisenhower's request for help for the allied troops, especially the Twelfth Army group under General Bradley in the Ardennes, who were then in grave difficulties.

Here is what Dwight D. Eisenhower said in a talk with Marshal Georgi Zhukov about the Soviet offensive when he visited Moscow in the summer of 1945:

> For us this was a long-awaited offensive. We all heaved a sigh of relief, especially when we got news that the offensive was developing very successfully. We were sure that the Germans would not be able any more to strengthen their Western Front.[2]

May 8, 1945, saw the end of the Second World War in Europe, and on September 2 of the same year the instruments of Japan's surrender were signed.

The Second World War offered quite a few lessons. It showed that militarism can be very dangerous when combined with the ideology of revenge, expansion and fascism, that even temporary patronage of such militarism can produce cruel consequences. But further it demonstrated that prospects are poor for using reactionary regimes to fight socialism.

Will these lessons influence the future? The 24 years which have passed since World War II ended are a somewhat greater span than that between our century's two great cataclysms. At the same time the present lull is far from peaceful—it is marred by numerous local conflicts.

And yet 24 years are more than 21.

Another reason for hope: Mankind is inexorably moving along the road of progress. And the technical and material aspects of this progress can equally serve war or peace.

Militarism has still not lost its anticipations of success—a bloody success. Yet we are optimistic, because along with the chain reaction of nuclear fission a reaction of a different kind is taking place. Social transformations are producing their own chain reaction—increasing the ordinary man's understanding of war and peace, turning nations and public opinion into an ever more important force. And this process is sure to bring mankind to the final triumph over militarism.

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[1] Winston Churchill, *The Second World War*, London-Casselle 1948-1952, Vol. 1, pp. 284-285.

[2] G. K. Zhukov, *Reminiscences and Meditations* (Moscow: APN Publishers, 1969), pp. 741-742.



OLYMPIC RECORD— ON THE LAST TRY

By Alexei Srebnitsky
Sports Commentator

OLYMPIC CHAMPION JANIS LUSIS has a psychological headstart even before he picks up a javelin: His competitors know that nothing throws him off balance, nothing stops him from getting the results he believes he's ready to get.

Lusis has that rare ability to keep his nerves under control in the most trying circumstances.

They used to say he had no luck. Considered one of the world's top javelin men, he competed for six years and never made the world record. Those who had their doubts about his winning at the Tokyo Olympics were considered eccentric. But he did lose, and not only to the champion from Finland, Pauli Nevala, but to Hungary's Gergely Kulcsar as well.

Came the Olympics in Mexico. Before the meet Lusis did finally break the world record held by Norway's Terje Pedersen. He raised it by 10⅛ inches to 301 feet 9 inches. But before his sixth and last attempt in Mexico, ahead of him were two men again, just as there had been four years back. Gergely Kulcsar once more and a Finn again, not Nevala this time but Jorma Kinnunen.

In his last try Janis started running, all according to the rules, the hand with the javelin already leading, when all of a sudden, right before the line, he stopped. There's your man without nerves! It wasn't nerves, Janis explained later. He simply wanted to check the running start and simulate the throw, so as to send the javelin flying where he is used to putting it—beyond the 295-foot mark. He hurled it and won—in the sixth attempt.

Lusis doesn't sidestep an analysis of his failures. He didn't after Tokyo, when the sports writers sighed and lamented in sympathy: Poor Lusis, an accident lost him the gold medal, bad luck. "No accident at all," said Lusis. "A year ago I hurt the sole of my foot. As a result, a mistake in the final try. In addition, I trained mainly for general physical conditioning and hadn't perfected my technique by the time the Olympics came around. That's why I lost."

"Yes, but how about Mexico?" I asked. "There too you were on the brink of defeat."

"Mexico was quite a different matter," Janis replied. "I felt strong then. I had grown much stronger in the year, added 11 pounds of solid muscle, something I had been hoping to do for a long time. And my technique was all right too. That's why

I wanted to win faster, in one throw. But haste is a bad adviser."

Janis grew up on a farm about 60 miles from Riga, the capital of Latvia. He didn't have much of a physique, and he went in for sports to be like his older brother. Though brother Aivars, a powerfully built farm truck driver, was no athlete, he was known in the neighborhood for his strength. The physical education teacher in the school Janis attended was a fanatic sports fan, fortunately, and under his guidance Janis began to do the triple jump.

He competed at the Latvian School Spartakiad and did a leap of 42 feet 7⅛ inches. In the fall of 1957 he came to Riga with a high school diploma in his pocket to apply for entrance in a physical culture institute. He passed his exams, but when he was questioned about his sports major and timidly asked to be included in the hurlers' group, this brought a laugh. With such a physique? A skinny, awkward-looking fellow like that. He was tall enough, 5 feet 9 inches, but he weighed only 143 pounds.

And now?

Today he is 5 feet 10¾ inches tall and has the build of an athlete. Not a single ounce of excess weight. He puts all the power of his 194-pound body into every throw. But 12 years ago, it would have taken a seer to guess that this skinny college freshman was a future javelin champion.

Finally Lusis managed to get into the decathlon group coached by Valentin Mazzalitis. Most of the decathlonists were very sturdy types, and the coach piled it on. It was a tough grind for Lusis, but he managed to keep up with the others and soon even began to outpace them.

He had to run cross-country, somersault on the horizontal bar, lift weights, play basketball and rugby, cover hundreds of meters in the swimming pool, and lay a ski course in the snow-covered woods. Lusis took it all in stride.

In the decathlon you have to throw the javelin. His first try, in 1957, seems a little funny today: 146 feet. He made this note in his diary: "Not enough strength." Strength, as we know, did come, but Lusis had a stretch of 11 years and about 150 feet to cover before he won the Olympic title.

Mazzalitis was in no hurry to get his best pupil into the big time. The public did not hear about Lusis until 1961, when he was about to finish the institute. In that year's national championship he took two third places: in the javelin and the decathlon. A year later he captured the European javelin title and since then has been appearing in the decathlon only episodically: He has finally found his calling. He won the European javelin title in 1966 also.

After the Mexico Olympics, Soviet sports commentators named Lusis the No. 2 Soviet athlete of the year (right after Victor Saneyev, Olympic triple jump champion). It is my feeling that Lusis won his high place on the list not merely because he became an Olympic champion (some of his colleagues who scored as well did not even make the top ten). It was the way he won. His courage and fighting spirit were especially dramatic by contrast with the many famed champions who fell apart because they could not stand the psychological pressure. Another important thing: Lusis brought back the first world record a Soviet athlete had ever set in the javelin. In spite of their traditionally strong showing, the victory of javelin star Victor Tsybulenko at the 1960 Olympics, for instance, Soviet hurlers had never set a world record.

I spoke with Lusis several months after Mexico, when he recalled the Olympics as something far past and was more interested in what lay ahead, like the European Championship in Athens this coming September.

"Whom do you see as your big rivals?"

"In our event you rarely see new names," he told me. "The same Gergely Kulcsar, the same Pole, Wladyslaw Nikiciuk; the same Manfred Stolle of the German Democratic Republic. Of the young set, Kinnunen, who almost grabbed the Olympic medal from me, and the Hungarian Miklos Nemeth, who is a well-known hurler despite his youth (son of the famed hammer champion Imre Nemeth). It is always hard competing against old man Sidlo: I've been fighting the Polish record holder for years. He doesn't recognize anything less than 262 feet. In general," he went on to say, "all those I've named, or almost all, have gotten used to throws of the order of 278-285 feet and even more. This means that any one of them can win any tournament."

"But you, of course, hope to come out ahead?"

"Of course."



YOUTH IN POLITICS

By Vladimir Milyutenko

SEVERAL VILLAGES in Georgia recently held youth meetings with this one item on the agenda: a report from Latavra Skankogashvili, deputy to the Georgian Supreme Soviet.

Latavra, a 26-year-old collective farmer, lives in the village of Dvabza. When she received official confirmation in March 1967 that she had been elected a member of the legislature of her republic, she was pleased but petrified. Latavra is a tea grower. Does picking tea faster than anyone else, she asked herself, qualify a person for the legislature? But there it was. The people of the district had elected her. They must have felt that she would justify their trust.

After the first few months, she discovered that she had many more abilities than picking tea. Her electors, especially the young ones, had given her specific assignments. One village wanted its eight-year school to be made a ten-year school; another wanted its kindergartens open the year round, not only in the busy seasons; a third wanted a stadium and school built.

Leafing through a notebook full of such assignments, Latavra should have a real sense of achievement: The Georgian Supreme Soviet acted favorably on most of her requests and recommendations.

Her responsibilities spread to areas larger than her constituency when she was elected to a standing committee on conservation. She studied the problems involved and suggested legal measures to control misuse of natural resources. She made several appeals to rural youth, and they responded with suggestions and, more important, with action.

At Latavra's call, youth detachments rushed to check a dangerous insect pest that was moving in from the woods in Borzhomi Gorge. Later she was asked to compile a report on soil erosion and pest control in citrus orchards.

Once a month, everywhere in the country, young legislators on every level—from municipal Soviets to the USSR Supreme Soviet—receive their electors, as do their older colleagues. And at the next session they are able to say: "This has been suggested by the people living in my area." Sometimes the wording is: "This has been suggested by the young people."

* * *

Young people now account for half of the country's population. They comprise 40 per cent of those gainfully employed in industry and construction. They form the core of researchers in the modern branches of science: cybernetics, nuclear physics, radio electronics and the like.

A considerable number hold legislative posts. Some 12 per cent of the deputies to the USSR Supreme Soviet are under 30. The same age group is represented to a somewhat smaller extent but generously—by an average of 10 per cent—in the Supreme Soviets of the union and autonomous republics. In the local Soviets, 330,000 of the deputies are young people. At 23 a citizen can be elected to the USSR Supreme Soviet, at 21 to the Supreme Soviets of the union and autonomous republics, and at 18 to the local Soviets.

The practice in many countries is to vest parliamentary and municipal authority in people much past their youth. It is not unreasonable, of course, to entrust the solution of vital social problems to people whose age and consequent experience guarantee sober consideration. On the other hand, youth does offer important judgmental values of its own. It is more sensitive, more active, less patient politically. Young people react energetically to events. They tend to act on their ideals, and they hate halfway measures.

By emphasizing these attributes inherent in youth, we do not by any means underestimate the merits of more mature age groups. We simply think it wiser to have the combination of qualities provided by different generations, for everyone's good.

The broad participation of young people in state administration gives them the background they need to take over. They acquire, well in advance, political know-how; they gather experience and try themselves in practice. Young legislators Surid Jafarzade, a driller from Azerbaijan; Arkadi Kozlov, a Byelorussian worker; Anastasia Gumenyuk, a Ukrainian farmer, and many others have enlarged their political and social horizons. Previously they excelled in their own narrow trades and professions. Now, as deputies, they must become knowing administrators as well.

There are other channels through which young people function politically: the Communist Party, where they command the same respect as their elders; the trade unions and the mass youth organization—the Komsomol.

The Komsomol, or the Young Communist League (YCL), plays an important part in many spheres of Soviet life. The central and republican Komsomol organizations have the right to initiate legislation. They suggest action to the central government and the republics on many major youth issues, for example, laws regulating the employment of teenagers, those stipulating shorter working hours and work weeks for young people who study while holding a job, those providing better holiday facilities for teenagers and those allocating funds for the construction of clubs in newly developed industrial areas of Siberia and the Far East, where the bulk of the workers are young.

Representatives of youth organizations are found among collegium members in the Ministry of Culture, the Ministry of Higher and Specialized Secondary Education and the State Committee on Radio and Television. They are often invited to conferences at other ministries and departments when the discussion relates to youth. Such direct involvement enables the Komsomol to draw the attention of government bodies to the needs of young people.

Young factory workers submit their proposals for collective agreements. The Komsomol organization in the factory or business office is consulted when young people are hired, fired or promoted and when housing and resort accommodations are allocated.

Groups and laboratories for sociological research have been set up by the USSR Komsomol Central Committee, the Komsomol Central Committees in the union republics and the regional Komsomol committees. Their widely circulated polls help publicize the opinions of young people on matters of moment.

These polls have demonstrated that young people are increasingly active politically. Indifference to politics as a tendency is practically nonexistent. The changes in attitudes are both quantitative and qualitative.

Urals sociologists compared young people's political involvement in the twenties and sixties. The results are curious. In the twenties, *i.e.* just after the Revolution, 90 per cent of the time young people spent on politics went to meetings, rallies and demonstrations and only 10 per cent went to concrete activities. The proportion in the

sixties is entirely different: 70 per cent is spent on concrete public assignments and only 30 per cent at meetings and rallies.

The shift is justified historically. In the twenties young people lacked political maturity and their cultural standards were lower. The more socially conscious had to spend much more time educating their coevals. There is much less need for that kind of propagandizing now and therefore more emphasis on activity.

In the past most of the speakers at meetings were activists; nowadays many ordinary young people speak their minds and decisions are taken after thorough discussion. The nature of youth meetings has changed radically—quite often they turn into heated debates.

This active interest in politics and the emphasis on action energize the young deputies and the leading Komsomol bodies. To maintain the confidence of their electors, they must keep in step with the times.

Soviet young people have freedom of speech, press and assembly. They openly state their opinions. Soviet youth organizations publish 63 magazines and 156 newspapers for children and young people in printings totaling 126 million copies a year. Soviet youth publishing houses print over 40 million books a year. There is a central youth radio station, Yunost (Youth). All TV studios in the country have youth sections and programs.

Youth papers hold regular, and very popular, forums on current topics. They also publish readers' letters of all kinds, including the critical variety.

Every so often *Komsomolskaya Pravda*, the leading youth paper, will receive a letter from a young person who lives a long way from Moscow. It may report some arbitrary decision on the part of a local administrative body. The newspaper will then send a correspondent to the area to look into the matter. The findings are reported in the paper and the guilty brought to public notice. After reading such an article, a local bureaucrat is inclined to weigh his actions more carefully. A letter written by a rank-and-filer can have broad public repercussions.

Last year both chambers of the USSR Supreme Soviet—the Soviet of the Union and the Soviet of Nationalities—set up standing youth committees. Similar committees were set up in the parliaments of the union republics. The USSR Supreme Soviet announced that these committees would give detailed consideration to the education, vocational training, employment, living conditions and leisure of young people and would submit appropriate draft laws.

Youth problems are many-sided and interconnected. The youth committees work closely with the Komsomol, with young people generally, with sociologists and teachers. New problems sometimes escape immediate notice. Therefore the joint efforts of the committees, sociologists, economists, demographers and philosophers are particularly important.

The two youth committees in the USSR Supreme Soviet consist of 62 deputies (31 in each), mostly members of the Communist Party who have worked with young people, representatives of the Komsomol, young factory workers, scientists, educators and cultural workers.

* * *

Soviet youth is given every opportunity for political activity and uses the opportunity. The country wants many more of its citizens active in politics, the young ones particularly. Their contributions to public welfare must be competent and imaginative. To reach the high standards called for, much needs to be done by the Soviets, the Komsomol and other organizations.

A GAME OF TWO INDIVIDUALITIES

By Grandmaster Alexander Kotov

THE GAMES of David Bronstein and Mikhail Tahl are always of interest to chess connoisseurs. Even if one were not aware of their tournament and match achievements, an analysis of their playing would make it evident that these were very knowing and creative individualities.

As far back as 1951 the 27-year-old Bronstein played a match with Mikhail Botvinnik, and only by a draw of 12-12 was the world title holder able to retain his crown. Since then David Bronstein has twice been USSR champion.

Tahl, because of his original style and temperament, is a familiar name to people not otherwise chess-minded. They know that once, in 1960, he won the world title from Botvinnik. In his match against Botvinnik Tahl used psychology, a fast attack following a lightning and intuitive evaluation of the situation and precise calculation to counter the logical strategy, the consistent planning and the flawless technique of his formidable opponent. Tahl won at the time (+6−2=13), but in the process he revealed his methods and bared a secret weapon that for years had intimidated leading chess players. Since then Tahl has changed a lot. He is more restrained and more composed, and his theoretical horizon is much wider.

Bronstein vs. Tahl games have never been ordinary. This was also true of their last encounter, in Riga in late 1968, during the country's team championship tournament.

In that game Bronstein resorted to the dependable weapon of the chess maestros of the past—the King's BP Gambit—with all its romantic remembrances. The grandmasters' table was surrounded by so deep a ring of fans that the boys displaying the game on the wall found it difficult to follow the chessboard moves. The referees tried to break up the crowd and keep the fans off, but when no fence helped, they gave up the idea. Moreover, the referees had to be extra careful toward the end of the game: Tahl was left with only three minutes and Bronstein with five minutes for the last 12 moves.

David Bronstein usually notes down the time each partner takes to think over the next move. He didn't in this game—there was not a second to spare. He even stopped writing down the moves. But he played an excellent game, and his fifteenth move deserves a double exclamation mark.

And now for this most interesting game, which can be classed as the best played in 1968.

FALKBEER'S COUNTERGAMBIT

White—D. Bronstein	Black—M. Tahl
1. P-K4, P-K4	2. P-KB4, . . .

And so, the King's Gambit—a child of the last century—today, in the era of space exploration and atomic energy! From the very first moves, however, the two chess wizards play a dramatic game. Black chooses what is known as Falkbeer's Countergambit.

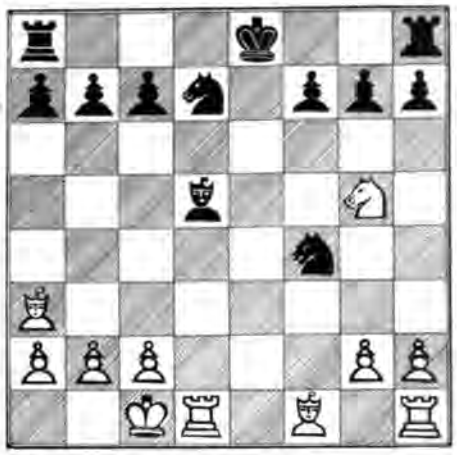
2. . . ., P-Q4	5. PxP, KtxP
3. PxQP, P-K5	6. Kt-KB3, B-QB4
4. P-Q3, Kt-KB3	7. Q-K2!, . . .

Bronstein accepts the challenge. Black would be ill-advised to play 7. . . ., Kt-B7ch, because his pieces would be "hanging in mid-air."

7. . . ., B-KB4	9. B-K3, KtxKt
8. Kt-QB-3, Q-K2	10. BxB!, . . .

An excellent move by the "artful David"! In spite of the exchange of Queens it leaves White the prospect of a formidable attack, which Bronstein conducts with uncommon resourcefulness.

10. . . ., KtxQ	12. B-R3, Kt-Q2
11. BxQ, KtxP	13. O-O-O, B-K5
	14. Kt-Kt5, BxQP



The position thus reached would not seem to have the latent possibilities for the fireworks of combinational blows which follow. However, the outward simplicity of the position does not embarrass Bronstein, and his next move is one of the most beautiful and brilliant in the entire history of chess.

15. P-KKt3!!, BxR	16. PxKt, P-QB4

The ex-world champion already has difficulty finding defensive resources. Black is faced with the devastating R-K1ch.

17. B-B4, B-B3	18. KtxKBP, P-QKt4
	19. Kt-Q6ch, K-K2

The Black King starts on his last journey. A small and concerted team of White pieces acts with a large measure of coordination, while Bronstein guides it with exceptional mastery.

20. KtxP, R(KR)-KB1	24. Kt-B7, R-Q1
21. Kt-Q4, B-Kt7	25. RxPch, K-B3
22. Kt-K6, R-B4	26. R-B7ch, K-Kt3
23. R-Kt1, B-K5	27. R-K7, . . .

Black's position has further deteriorated. He has lost a Pawn and his King is still under fire. All attempts by Mikhail Tahl to organize the defense of his battered army end in failure.

27. . . ., Kt-B3	29. P-Kt3, R-R4
28. Kt-K6, R-QB1	30. Kt-Kt5, . . .

Noteworthy are the indefatigable and devastating blows dealt by White's restless Knight right in the middle of Black's camp.

30. . . ., B-Q4	32. B-Kt2, P-B5
31. B-Q3ch, K-R3	33. B-B5, P-B6

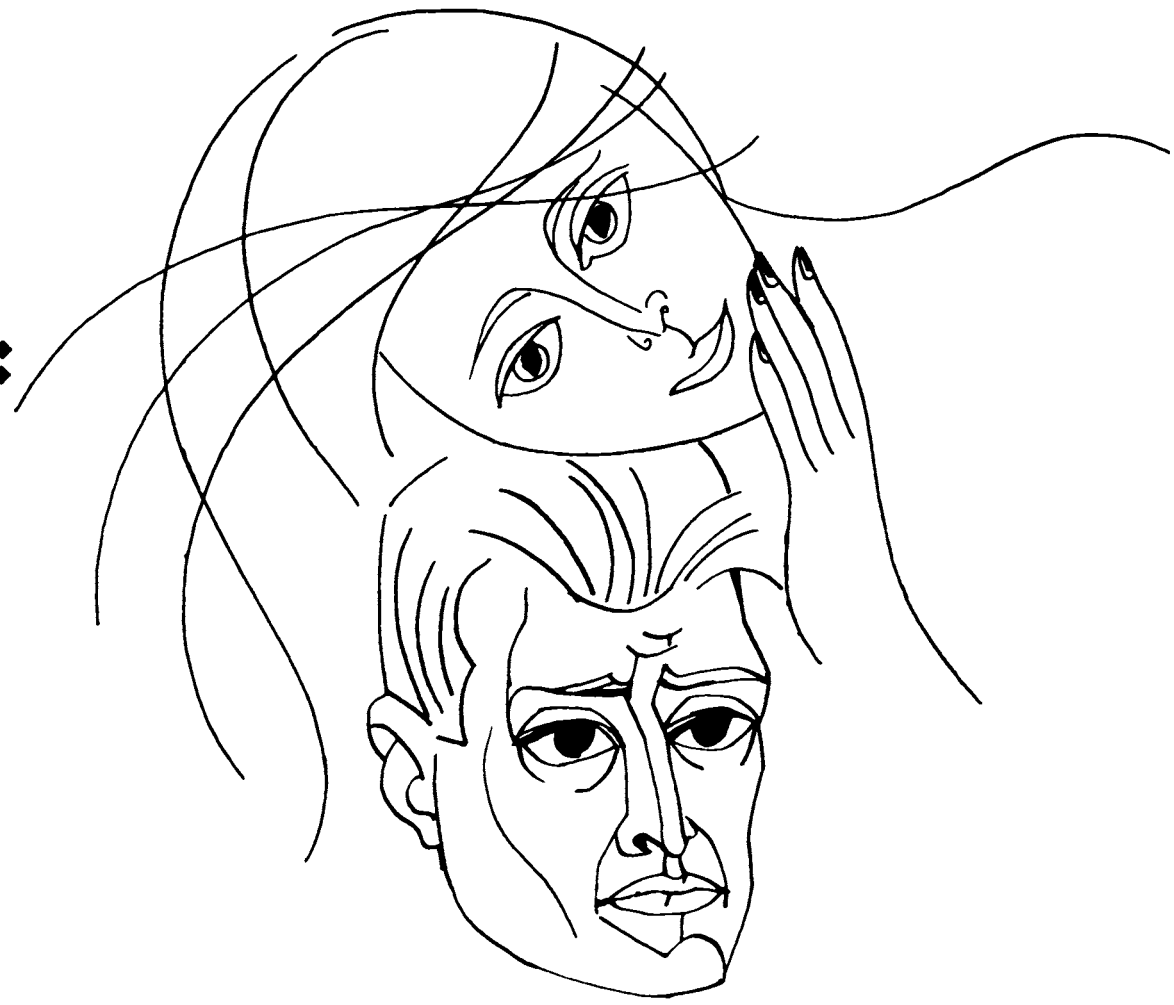
Black is admitting an inevitable collapse. However, he has no other way to defend himself at this juncture.

34. BxR, PxBch	37. R-R4, K-Kt3
35. KxP, RxP	38. R-Q4, P-R4
36. RxQRP, RxB7	39. P-R4, . . .

In these last Pawn races, White is also bound to emerge victorious.

39. . . ., P-R5	41. P-R6, Kt-R4
40. P-R5, B-Kt7	42. B-Kt7, KtxP
	43. RxKt, Black resigns.

WANTED URGENTLY: GRAY HUMAN HAIR



by Yuri Nagibin

Yuri Nagibin was born in 1920 in Moscow. His first story, "Double Error," was published in 1940. The war prevented him from graduating from the State Cinema Institute. He volunteered for the front shortly before he was to have presented his diploma thesis.

Nagibin's first books,* A Man from the Front *and* The Soldier's Soul, *were published in 1943. Since then over 20 books of his appeared, among them collections of stories, short novels, literary scenarios and plays.

Many of Nagibin's works have been screened; he is the author of scenarios for the films* Happiness Hard-Won *and* The Chairman *among others.

GUSHCHIN STOPPED SHORT. Inscribed in glaring black and white, in thick black ink on glossy white paper, were the words "Wanted Urgently: Gray Human Hair." Beside the sign hung others, faded and yellow, announcing that the Leningrad Film Studio needed cleaners, lighting technicians, truck drivers, hairdressers, electricians, sawmill workers, doormen, a barmaid, a pyrotechnist and an accountant.

How sinister "gray human hair" sounds, Gushchin thought. Whoever wrote that must have an enviably clear conscience.

He heard a short chuckle. Nearby stood a girl with a hairdo too elaborately adult and up to date for her open, childish face.

"Don't worry," she said. "It's voluntary."

Gushchin had difficulty switching from the vague images of Auschwitz and the war that had suddenly swept over him to the childishly gentle look, laugh and voice of the girl at his side. He looked blank for a second.

"Your gray hairs aren't threatened," the girl explained with a trace of embarrassment.

Gushchin had the attractive steel-gray hair of men who gray prematurely. Instead of aging him, it somehow made his sad, swarthy, 45-year-old face look younger. That the girl should speak to him at all was flattering, and her words were flattering too. But Gushchin was an injured man, hopelessly wounded by his own wife, and hence he felt no joy or pride but an even deeper sadness. This always happened when kindly signals reached him from the outside world. It was simpler to live with the realization that he could not hope to interest or appeal to anyone, even fleetingly, that he was the most mediocre of dolts, who fully deserved the fate of domestic apostate.

"We ought to be grateful they don't want human teeth, fingernails and skin," Gushchin said glumly, making no effort to be pleasant or witty.

The girl's face twisted into a grimace of suffering that aged her for an instant.

"Please forgive me," she said. "That was a stupid thing to say. I'm a tactless fool."

"No harm done. I was never in a nazi concentration camp." He felt sorry for the girl. She had wanted to crack a joke with a stranger, but it had fallen flat. Just because he had lost the habit of normal human contact.

"Let's drop it. Everything's fine." Gushchin smiled. "What do they want the hair for?"

"Wigs." The girl smiled too, certain now that she had not hurt his feelings.

"I thought it was for mattresses."

"Mattresses?"

a poet. In a trained voice that was low but clear he recited a short poem about a solitary lamp, gazing at Natasha with wounded eyes.

"Very nice," she said indifferently.

The poet flushed and turned away.

All this time Gushchin had not exchanged a word with Natasha. He talked with the artist, drank wine, listened to the poetry, while Natasha helped make order in the room, chatted in a whisper with the artist's wife, played with the children, said something to the poets, and listened to the poetry. There was closeness in that outward dissociation. They behaved like people who possess something together and do not need to communicate out of politeness. The handsome poet sensed the rapport between Natasha and the new guest. Gushchin felt his fervid, gloomy gaze fixed on him.

The wine, the unusual surroundings and the impressions of the day filled Gushchin with leaden weariness. He still drank toasts, still expressed admiration, still gave replies, but it was all a haze. There were patches of lucidity when he heard the handsome poet strumming a guitar and singing sadly about a land called Hippopotamia. He saw a long-haired youth rush into the studio to attack the artist with: "So you think Vereshchagin is a genius and a luminary?" At which the artist ripped open the collar of his shirt, like a warrior going into battle, and staunchly defended Vereshchagin. He also recalled clearly thinking it was foolish of his generation to abuse youth. He wanted to say so to another guest, a wistful Mephistopheles in a goatee, but sleep toppled him into a dark pit.

It did not last long, and he awoke refreshed. Trying to think how to excuse himself, he did not open his eyes. Suddenly he heard the handsome poet say in a low voice, "So he picked you up in the street."

"No, I picked him up," came the quiet answer.

"I never knew you did such things."

"Neither did I."

"It's a disgrace to dress like that!" the poet exclaimed. "What does he think this is—the twenties?"

Gushchin missed the right moment to awaken and put a stop to further discussion of himself. What he had heard called for a reply. But what could he do? He could not get into a fight with a youngster, and to lecture him would be even worse. The only thing left was to go on eavesdropping, pretending he was still asleep.

"How odd," said Natasha. "I didn't even notice how he was dressed."

Guschin could not catch her intonation, but the way she said "he" had an alienating ring.

"You usually notice such things."

"When there isn't anything else to notice."

"Why the temper?"

"Me? You're the one in a temper."

"Just tell me the truth. What do you see in such a—dusty type?"

"I feel safe with him. I don't know how else to put it. I feel protected."

"And with me you feel unprotected. Is that it?"

"I know you're a first-class boxer and could knock out anyone who tried to pick me up. But I'm not talking about that kind of protection."

"Do you think he's a hidden genius?"

"He's an expert in his field."

"Is that all?"

"That's a lot. I've known you seven years and you're still the same—a promising poet, an amateur actor, a first-class boxer. Why don't you become a real poet, or a professional actor, or even a champion boxer?"

"You've never been so cruel. Why are you now?"

"I never had anyone to defend before!" Natasha snapped. Gushchin felt sorry for the poor handsome poet.

It never entered his head to regard himself as the poet's happy rival. Natasha did not like the poet as it was. He, Gushchin, had accidentally come into the field of vision of a weary young soul. His personal qualities had nothing to do with it. He saw the real Natasha, and his heart was drawn to her. Natasha did not see him. She had invented him out of her first impression. Perhaps his gray hair, the hair that the film studio needed so urgently, was the reason. But he did not feel bitter. Their meeting would still remain a gift of the gods, like this studio, the artist, his family and friends, the poetry and singing, and the arguments, the very sound of young, passionately dedicated voices.

When Gushchin opened his eyes, the handsome poet had gone. Natasha approached with a small pillow trimmed with Vologda embroidery.

"You're tired, Sergei. Let me put this under your head."

This was no play of abstract forces. This was friendly concern for a weary, middle-aged man. Gushchin was embarrassed but grateful.

"Thanks," he said. "I'm not much of a drinker. Out of the habit."

"No one is. Although they're used to it."

Natasha evidently meant the young poet with the sharpened features and unhappy face, the torpid Mephistopheles and the red-faced opponent of Vereshchagin.

Natasha led Gushchin out of the hospitable studio as Mephistopheles was preparing to go off in search of more wine.

The artist's wife pressed some meat pies and other food on Natasha, the children clung to her skirt with howls of despair, and Gushchin saw that Natasha was far from alone in her big city.

She lived on Rakov Street. They took a roundabout way, across Palace Square and the Field of Mars. Here generous floodlights drew palaces and obelisks out of the darkness to advantage. But this Intourist gloss deprived the city of its severe, proud independence. Although if you made an effort, you could glimpse, in the blue haze above the floodlights and the dazzling white of the illuminated walls, the Petrograd of 1917 and fighters for the Revolution warming themselves around bonfires at night. "The smoke of fires and the chill of a bayonet. . . ."

Gushchin shivered, as though the cold tip of a bayonet had touched him. Attention—your day has not yet ended; the coals of the bonfire still glimmer. Remember, remember, that you really walked across Palace Square arm in arm with a girl called Natasha. Do not persuade yourself later that it was all a dream. And remember: She was with you all day and all evening, and endured you, and did not drive you away, although first you were overexcited and then depressed and then drunk and at the end went to pieces. She forgave you everything and remained kind to you. That was so, that was so, and it is still so, it is still so. She is beside you, all of her, her eyes, her tanned cheeks, the tender mouth that droops and grows old when she is sad, and the precious hairdo, now dishevelled, and her neck and shoulders—here, the whole of her warm life is walking beside you, and you may touch her. To his horror, he touched Natasha's hand. She looked at him questioningly.

"Forgive me," Gushchin mumbled. "I just wanted to make sure you were here."

Natasha showed no surprise. "Of course I'm here," she said soothingly.

Happy, Gushchin warmly thanked Natasha for "her Leningrad."

"What wonderful, gifted people!"

"Yes—" Natasha agreed absent-mindedly. "But I liked them less than usual tonight."

"Why?" Gushchin asked anxiously.

She said nothing for a moment.

"How can I explain it? The hardest thing in acting is not dialogue or monologue but the pause. The Moscow Art Theater used to be famous for its pauses. With my friends there are no pauses. They keep rushing about, arguing, denouncing, reciting poetry, emoting, quarreling, or dashing off to art shows, previews and premières."

"Is there anything wrong with that?"

"Yes. It's all so amateur. Their whole emotional life is amateur. Except the artist, of course. He's a craftsman, a professional. He supports a family and still has the energy to fool around and have fun. I shouldn't talk this way. I should be thankful they all exist. There's no sense in angering the gods. Thank you, thank you!" she repeated, turning up her face. "I'm thanking the gods so they won't do us any harm. You, Sergei, know how to 'hold a pause.' It's so wonderful to be silent with you!"

Natasha lived in an old house near the arcade.

He laid the palm of his hand on her shoulder and felt the gentle warmth of her body through her thin sweater. She would leave him now, and the happiest and most astonishing day in his life would come to an end. O, linger, linger! What happens to me when your footsteps fall silent in the dark tunnel of the gateway will be so strange. Neither the Mikhailov Palace, nor all the wonders of Rossi, nor even Quarengi himself can save me!

She took the hand lying on her shoulder and, when he did not guess her intention, pulled him after her with a slight jerk.

At the bottom of the worn stone steps Gushchin halted. Again Natasha's hand drew him after her. The massive, weary door sang its sad song. In the dim light of dusty little bulbs rose a staircase leading upward to endless heights shrouded in darkness. It seemed to Gushchin a ladder leading to heaven, and he moved behind Natasha, breathless not from the steep flights of stairs but from agitation and gratitude. Natasha was showing him the supreme favor. She was leading him into her home, giving him the happiness of the final permissible contact with her before disappearing forever. Suddenly Natasha stopped in front of a door, and Gushchin, his head in the clouds, almost knocked her over. She laughed, unlocked the door, and they stepped into pitch darkness. The switch clicked, setting Gushchin down in a small hall with a neat rack, an umbrella stand, and an oval mirror on the wall with a table beneath it. On the table lay a pair of clothes brushes and a whisk broom. Gushchin was touched by these orderly details of a lonely life. He had never seen a hall so sensibly furnished.

Poignant grief at the brevity and fragility of this undeserved gift grew in him until it became unbearable, and he wanted to leave at once to cut short the torture. He would leave, take the train to Moscow, return to his familiar existence, and then the grief would ease off, leaving him with tender, happy memories of the clean little apartment that was the focus of Natasha's life.

She came up to him, put an unexpectedly strong arm around his neck, drew him to

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By Alexander Binder

JEWISH WEDDING IN VILNIUS

Moscow has been my home for a long time; I love the city. I have a special feeling for a few other cities, too. I never miss a chance, for instance, to visit Vilnius, Lithuania's capital, an amiable place, full of a charm all its own.

This time I had a particularly good visit. Fall had started, and with it the wedding season. Almost every Saturday the Bocu Restaurant on old Gedrio Street rang with that convivial Jewish table song:

Lomir ale in einem, in einem
Di kaleh mekabl ponim zayn,
di kaleh mekabl ponim zayn.
Lomir ale in einem,
Lomir ale in einem
Trinken a bisele vayn.

With this song the guests toast the bride and the groom, the parents, grandparents, brothers, sisters, and even themselves.

I like to be invited to wedding parties, but three at one time made me positively giddy. I asked my friend and colleague, press photographer Vsevolod Tarasevich:

"Which one shall we go to?"

"Why not all of them?" he answered with a smile.

And so we take you to all three parties.

. . . Here we are in the banquet hall of the Bocu. The place is bustling with guests, the tables are groaning with good wines and the delicacies to go with them—gefüllte fish, liver with eggs, minced herring, radish with goose fat, stuffed chicken necks and various salads.

The first corks pop off the champagne bottles:

"*Lekhayim* to the newlyweds!"

The bride and groom are glowing with happiness, just like all brides and grooms the world over.

Let me introduce them: Masha Shuras and Leonid Tkats. He is an engineer and she is a music instructor. Kalman Shuras, her father, was with the Armored



Photographs by Vsevolod Tarasevich





Snaps from the several wedding parties we visited: (Top) Leib Elyashev, master of ceremonies, without which no Jewish wedding can be complete, is singing a folk song about in-laws, appropriately enough. (Left) Masha Shuras, one of the glowing brides, looks on while (bottom) the guests dance a freilech. *It takes both hands and feet to do this lively number right. (Far bottom) Chorus conductor Aliza Blekharovich gets everybody singing* "Bai Mir Bist Du Shein" *(to me you're lovely). No more fitting sentiment.*







This kiss is in the Russian tradition. The guests shout "Bitter! Kiss to sweeten anything bitter."

TWO MILLION WEDDINGS EVERY YEAR—AND EACH NATIONALITY CELEBRATES IN ITS OWN WAY

YOUNG COUPLES AND ANCIENT RITUALS







Attention, everybody! The bride and groom.



A mazeltov *(lots of luck) from her grandpa.*



Everybody has to dance at a Jewish wedding.



Bride in the center, the guests in the ring.



A pensive moment for the mother of the bride.



Lekhayim *(long life) to the happy newlyweds.*



Corps in the Second World War. For gallantry he was awarded the title of Hero of the Soviet Union, the country's highest decoration. Now he follows a peaceful trade—he makes vanity cases at a Vilnius factory. Yelena, the bride's mother, works there too.

The second wedding party is at the same restaurant.

David Kocas, the groom, is still at the university. His bride, Valentina Gurevich, is one step ahead. She has already graduated and works as a railroad engineer. Incidentally, railroading is a Gurevich family tradition. Mikhail, the bride's father, is leader of a train maintenance team, and Anastasia, her mother, is an accountant at a railway station. Grandfather Afanasi Turik, 90, ran a locomotive for more than 50 years.

The third wedding is at the Trade Union Palace of Culture, for a good reason. That is where the Jewish (amateur) theater company, famous all over Lithuania, has been playing for a long time. The company's

The bride is 20, grandfather an honored 90.



COME DANCE THE HORAH!

drama, chorus, dance and music ensembles—more than 200 performers—include the whole family of the groom. Saul Blekharovich, his gray-haired father, composes the music for the company's productions. Aliza Blekharovich, his sister, leads the chorus and sings Jewish songs. Moisei Blekharovich, the groom, a student of the Vilnius conservatory, accompanies the actors and also writes some of their gay songs.

The company made the newlyweds quite a feast. Look at the number of people at the tables. Mind you, this is only a part of the hall. And this is the umptieth time that Moisei Blekharovich is kissing his bride.

. . . Three wedding parties, all of them with people whirling to *freilechs* until they can barely stand on their feet. The dances come in quick succession—Jewish, Lithuanian, Russian, Ukrainian, interrupted only by the toastmasters'

"*Lekhayim* to the newlyweds!"

"Yes. German hotel rooms have a small celluloid container over the washstand into which you're supposed to put combings. The hair is used to stuff mattresses."

The girl shrugged. "How thoughtful, how sensible. And how disgusting!"

The subject was exhausted. There was nothing left for the two strangers who had met by accident beside a billboard but to move off in different directions. She would walk away, with her open, childish face and grown-up hairdo; her thin white sweater and short thick skirt that barely reached the knees of beautifully feminine legs would vanish, dissolving in the throng on the avenue. No matter how long Gushchin lived, he would never again see her big, trustful, happy eyes, or her mouth, which suffering so quickly twisted into an aging grimace, never again hear her brief chuckle and gentle voice. The horror of the loneliness that awaited him made Gushchin the dolt, the nincompoop, the henpecked husband, suddenly say in desperation:

"Are you in a hurry? Would you like to take a stroll around the city? If you have the time, of course. I'm here on a business trip. I just have to drop in at the studio for no more than five minutes. Then we could take a ride on the river, sit in a café, or go to the Summer Garden."

The girl looked at him with curiosity mingled, he felt, with compassion. Gushchin saw himself in her eyes, in a suit too dark and heavy for the season, a collar too tight and clerical-looking, a cheap tie that did not match the suit, rubber-soled shoes that badly needed polishing, and a depressingly big, battered briefcase.

"All that? Do we have to cover the entire program—a stroll, a café, a boat ride and the Summer Garden? You haven't forgotten anything, have you? We could go up to the top of St. Isaac's, travel out to the Monastery and the Volkov cemetery, and visit the Hermitage, the Russian Museum and Pushkin's home."

She was laughing at him, at the pitiful eagerness of this doleful middle-aged man in his department store suit and clerical collar.

"I beg your pardon," said Gushchin, humbly resigning himself to his proper place without offense. "I lost my head. It's been a long time since anyone talked to me on the street. All of a sudden I felt the world had grown fantastically kinder."

Again the girl's face clouded, looking older. She evidently had the gift of getting behind the shell of words.

"Why talk like that? I haven't refused, have I? But I have to go inside too, for the same five minutes."

"Then let's go!" Gushchin exclaimed with feigned joy, certain that the girl would vanish in the endless corridors of the Leningrad Film Studio. "Which department?"

"Acting."

"Are you—"

"That's right, an actress, the one thing the studio never seems to need. But I can't imagine what you do. You don't seem to fit into the movie atmosphere."

"Why not? Judging from those signs, the studio needs plenty of people besides actors."

The girl shook her head. "No. The cinema puts its stamp on all who come within its orbit, the way God stamps the rogue. You don't belong to the film world. You're a sad, serious man who has wandered by mistake into the land of make-believe."

"Well, simply, I'm an engineer, an expert on catapulting. I'm acting as consultant on *Flight Into the Unknown.*"

"That's right," she said. "They're catapulting all the time. Are you from Moscow?"

"Yes. You Leningraders can spot a Muscovite at once."

The girl laughed. "It's the accent that gives them away." She stretched out her hand. "My name's Natasha Proskurova."

"Mine's Sergei Gushchin."

They shook hands and walked into the studio lobby.

"Need a pass?" Then, proudly, "I have a permanent pass. Let's meet here or, better still, over there at the entrance, in 15 minutes."

Nodding to the doorman, who evidently recognized her, she ran down the hall into the depths of the building. Gushchin's eyes followed her. He realized he would never see her again, but now he did not feel as badly about it as before. She had not vanished nameless, a daydream. She had presented him with her name and, in this way, given him the right to herself, as it were, the right to remember and hope. Providence had made him an unexpected and undeserved gift. He should bless the mercy of providence and not hope for anything further.

When he had attended to his business and come downstairs into the lobby and caught a glimpse, through the cloudy glass of the front door, of a summer world that did not belong to the studio his resignation suddenly deserted him. He felt he did not have the strength to push open the door. He loved this studio where Natasha led a strange, mysterious life, although not the whole of it, only a small, far from most important part of it. Until he shut the door behind him, a slender thread still linked him with Natasha. An idea came to him. Why not go to the wig department and let them have his gray human hair? This would entitle him to stay in the studio for a while and, who knows, perhaps Natasha would play the role of an old-fashioned society lady in a wig made of his hair. Even if she did not play the role, there would still be something intimate and material connecting him with her world. Then Gushchin thought wryly, with an inner sob, that the studio might need human fingernails, skin, bones and internal organs, and he would turn in all of himself, like scrap—which was what he actually was—for the greater glory of his beloved.

"How can you behave like that?" asked a breathless, helplessly angry voice. "You—you're nothing but an old adventurer!"

Natasha stood before him, indignation and imminent tears making her dark eyes enormous, while the drooping corners of her mouth and her crumpled chin turned the lower part of her face into an old woman's.

"I didn't think you'd come," Gushchin mumbled.

"What an odd man you are," Natasha said in annoyance, no longer angry. "You must have been deceived a great many times."

Gushchin shrugged. Yes, I have been deceived many times and have lost faith in myself. I recognize the right of everyone to deceive me. That is actually as immoral as deception itself. But I can't explain to you, Natasha, how it all came about because I myself don't understand the mechanism of my fall. It was so gradual. You get into the habit of reconciling yourself to meanness day after day over the course of many years.

They were walking along Kirov Avenue toward the Neva. The sea breeze tempered the heat, making it easy to breathe. It was shady on the avenue, but the square before the bridge was bright with sunshine. Natasha asked Gushchin why he had chosen catapulting. She said she knew all occupations were worthwhile, but she simply could not imagine how he had hit on such a rare and unusual field. In our youth we all dream of making mankind happy. Had he thought that catapulting would make his fellow men happy? Certainly, Gushchin replied. Catapulting is inseparably connected with space flights, and who in the twentieth century does not dream of outer space? Gushchin spoke with enthusiasm, although he knew her questions were meant only to fill the silence that had arisen between them as soon as they stepped out of the studio. Gushchin had not been prepared to see Natasha again. She had found a place in his memory, dreams and sadness—but alive, the charm and intensity of her youth a threat, she was more than he could handle.

I'm tired. My soul is weary. I keep forcing it to live in unsuitable conditions. My wife was right, in her way, when she said: "Why torture yourself? Practically everybody lives this way." She had plenty of examples. I had no idea the lives of our acquaintances were so complicated. But they get along, I don't. I ought to be one of the minority who do not live that way. I haven't acquired the freedom of indifference. I keep seeing in my wife a girl with a madly loving face. She once loved me far more boldly and wholeheartedly than I loved her. I was stunned by the war, by the emptiness of a home that had died in the war and by my sudden loneliness, while she had plunged headlong into love, with all her half-childish strength. I fell in love with her slowly but surely, until I was lost. Afterward, when she started coming home later and later in the evening, I forced myself not to notice the smeared, crumpled mouth, the untidily swimming eyes, the disordered clothing, the smell of wine or cognac, and hair that reeked of tobacco smoke. "Where have you been?" I asked, giving her a chance to justify herself, at least to lie convincingly and save her dignity in our now indecent life. I thought I would thus be able to save her from the final fall. I hoped to conquer her with my patience and restraint, with my faith in her nonexistent integrity. She was the first to break under this additional lie. I opened the door to her at five one morning. It was winter, and the freezing cold coming from the hallway struck at my bare legs beneath my dressing gown and has remained with me forever since. "Well, where have I been?" she said in a hoarse, almost threatening voice, and for the first time looked at me with hatred. She must have been tired to death of my game of ignorance and trust. I said nothing. I stopped asking, and I no longer saw hatred in her eyes, only condescending disdain, sometimes even something like sympathy, compassionate understanding.

She came into Gushchin's bed at night rarely and always drunk. He understood it was not love that drove her to him but some bitter defeat, some unquenched thirst. Shamefully, cursing himself for his weakness, he took pitiful pleasure in a woman he had once loved with a singlehearted love and now almost feared. Man is never completely unhappy; there is always a margin left. The worst time came after their daughter grew up. He had endured this life for her sake. She had loved him with that shade of jealous adoration that girls often feel for fathers who are still young and attractive and do not get much affection at home. But his daughter had grown older, fathomed the shameful family secrets, and firmly taken her mother's side with youthful ruthlessness, erecting a solid wall of arrogant negligence between herself and her father. Although his wife treated him cruelly, she was not mean. But his daughter's eyes grew small and mean when he made timid at-

tempts to penetrate beyond the wall. She seemed unable to forgive him his humiliation, weakness and resignation. She did not love her mother but took her as a model, gaining for herself complete independence and the right to make demands without giving any return.

"No," said Gushchin, "you're mistaken. That's not de la Mothe. It's Quarengi."

They had crossed the bridge and were now standing on the edge of the Field of Mars, near the Suvorov monument. Natasha, assuming the role of guide, had attributed to de la Mothe a tall, faded green building, fairly commonplace, erected by the young Quarengi.

Natasha protested with the injured pride of the Leningrader caught ignorant of his city.

"Why argue?" Gushchin said. "There's a memorial plaque on the side of the house facing the square. It clearly says that Quarengi built it. Want to see for yourself?"

But to get to the building from their corner proved far from simple. There was no crossing at the place where they stood, and it would mean a fairly long detour.

Counting on this, Natasha continued to insist it was de la Mothe.

"If you like, I can list all the known buildings Quarengi and de la Mothe put up, including those that still exist and those that burned down, were torn down, were destroyed by time, or rebuilt until they are unrecognizable." Gushchin then rattled off several dozen names, giving the addresses of buildings still standing and others that had vanished.

"We needn't cross the street," Natasha said out of a stunned silence. "I'm at a loss. Does your knowledge cover other architects, or only Quarengi and de la Mothe?"

"All the architects who built St. Petersburg," Gushchin said, not without pride. "Kvasov or Rusca, Rastrelli or Rossi, Felten or Sokolov. But Quarengi is my favorite."

"Why? Was he better than Voronikhin or Rossi?"

"No, it's just that I like him better."

"Just what are you? Catapulter, architect, art scholar, guide, or the author of a guidebook to Leningrad?"

Gushchin smiled. "My field is catapulting. You can check at the studio."

"Then why Quarengi and the rest of them? You don't even live in Leningrad."

"A person sometimes needs a refuge where he will be left in peace. A wretched word has even been coined—hobby—to designate this salvatory flight of the soul. Old St. Petersburg is my hobby."

What happiness it is to open a small volume in a Morocco red leather binding and examine the severe, distinct photographs, on thick, silky, nobly yellowed paper, of an entablature preserved from the Elizabethan Age in an unobtrusive little residence on Kamenny Island, a Quarengi portico of noble purity that still exists in the depths of a far from picturesque storage yard on Liteiny Prospect, or a miraculously untouched grating on a house on the Fontanka that has been completely rebuilt. To examine all that, search in memory for a corner of the city sheltering some relic, recall the surrounding landscape, the rocks and trees, and imagine what it all once looked like. You forget you are again alone in the apartment, and you no longer remember why. You wonder pensively why the stones of old buildings are so much softer and warmer than the stone of human hearts made hard by selfishness. But the greatest joy—no, not joy but lofty repose, solemn peace—comes from Giacomo Quarengi, a stout, ugly dwarf with a misshapen nose who created supreme harmony. Others may be mightier, more magnificent, richer in imagination and inspiration, but Quarengi's chaste simplicity and artistic delicacy impart incomparable perfection to everything he created. Quarengi conceived in depth instead of simply decorating planes. The light and shadow on the challengingly simple façade of the Academy of Sciences fill you with a strange sense of pride. You begin to believe that man cannot be humiliated so long as he feels he is a part of the world spirit. With Quarengi, melancholy Argunov, solemn Chevakinsky and all-powerful Rossi you stand against the troubles of the world, large and small, against the night that unswervingly flings you into loneliness, against emptiness and sorrow.

"Would you like me to show you quite a special Leningrad?" he asked Natasha hopefully. "It's a Leningrad you don't know, truly it is."

"Where is it?"

"In the back streets, in the small courtyards, in the halls of famous buildings, and at times right in the middle of Nevsky Prospect. But people don't notice it, the way they so often fail to see what is very close."

"But dear Sergei, we could never do all that in a single day."

A taxi forced by a traffic light to a sudden halt in front of them prompted a way out. Gushchin seized Natasha by the arm and pushed her into the car. The driver protested that it was against the rules, but Gushchin said, "Straight ahead, brother, don't be scared!" with such confidence and good humor that the driver fell silent, with faith in the future, and shifted gears with a screech.

Every collector, no matter how unsociable and contemplative, wants to show his treasures to another person, if only once. Gushchin was a generous, sociable man by nature. The circumstances of life had made him unsociable. Besides, what else was there for him to share with Natasha? His injuries, depression and melancholy, or ideas about the design of catapults? None of them could be divulged. He shared with her the only thing he owned, something he had accumulated bit by bit in the long evenings of solitude. He had nothing better to offer her. Gushchin, a man of excessive tact, a frighteningly considerate man, now hurled the taxi from one end of town to the other, dragged Natasha across gullies, old cemeteries, crowded courtyards, building sites and empty lots, completely forgetting she might be bored or tired. He seemed to know he would never make this tour again, and in his kindhearted frenzy he wanted to show her everything. He realized Natasha was familiar only with the famous monuments of architecture and knew nothing of those faint traces and signs of a vanished past which made up his collection, or of the large number of minor Quarengi buildings. He deliberately chose routes along Khalturin Street, the Nevsky Prospect, the Sadovaya and the Fontanka.

"That's Quarengi!" he would cry in triumph. "That old drugstore! Another Quarengi!—in Olovyanny Rows! That hospital is Quarengi too. Don't you recognize it? Quarengi, yes, pure Quarengi!"

Natasha laughed. The tour appeared to be giving her no less pleasure than it gave Gushchin. It was strange, though, that her animated, interested face was turned, at the moments when Gushchin sang the most fiery praises of some frieze or portico, not to the marvelous ruin but to him.

He sobered up suddenly as they were examining a fragment of the figure of an angel in a tiny garden on Vasilyevsky Island.

"Had enough of the past?" he asked.

"As you wish. I'm not tired."

Gushchin let the taxi go and they walked slowly toward Lieutenant Schmidt Bridge.

"Do you live alone, Sergei?" Natasha asked sympathetically.

"Far from it. I have a wife and a daughter almost your age. Why did you think so?"

"I thought you didn't have anyone except—" she gave a faint smile—"except Quarengi."

"That's true," Gushchin said moodily. "I don't understand. How did you guess?"

"It wasn't hard," she said softly, almost to herself.

"What about you? You don't live alone, do you? You probably have a husband and a family."

"I'm all alone. Father was killed in the war and mother died in the blockade. My grandmother brought me up. Now she's dead too. She was old. No one wants to marry me, but I'm not lonely. Would you like me to show you my Leningrad?"

"Is it convenient?"

Natasha laughed. "I was certain you'd say something like that. Of course it is."

Natasha's Leningrad was not far away, on Profsoyuzny Boulevard. They walked there, hardly saying a word all the way, each occupied with his own thoughts.

Their destination proved to be an artist's studio. An engraver's bench and a big tub of plaster of Paris took up almost half the fairly large room. Besides two easels there was a low, exceedingly broad couch, a dozen stools, and a huge old-fashioned armchair. From the ceiling hung wire objects that looked like bird cages but were models of atomic structures, and along the walls were shelves covered with strange plaster of Paris fruit. They turned out to be human entrails: kidneys, livers, stomachs, intestines and lungs.

The paintings, drawings and engravings showed that the artist's restless nature worshipped many gods. His soul had been captivated in turn, or perhaps at one stroke, by the Suzdal icon painters, Italian primitives, French impressionists, Spanish surrealists, Russian *peredvizhniki* and cosmopolitan abstractionists. But in all his hypostases he remained himself, bold and very talented. Above the fireplace hung plaster of Paris models of hands, the spade-shaped hands of pianists, the long hands of violinists, with nervous fingers, the powerful hands of sculptors, the weak, undeveloped hands of poets, the hands of actors and scientists, inventors and artisans.

Among the innumerable hands a model of the small, narrow foot of a famous ballerina, the ligaments of the instep tightly bunched, looked odd and touching.

As the artist shook hands with Gushchin he said he would like to make a model of his hand.

"But I'm a nobody," Gushchin protested.

"Who can say? You have a fine, gifted hand."

Gushchin found himself in a chair with his sleeve rolled up as the artist, enormous, bearded and blue-eyed, patted plaster onto his arm with tickling movements of his huge hands.

Two young poets entered. One of them, a slender lad of nineteen with golden hair that hung down over his eyes and a round, childish face, immediately started reciting poetry in a rich, sonorous baritone that was surprising from such a frail exterior. His poetry was rich and sonorous, too, and highly individual.

Then the other poet, a tall, handsome young man of Natasha's age, recited some of his work. Although he was older and more imposing than his friend, Gushchin sensed that he had a smaller reputation as



AROUND the COUNTRY



MAGNETIZED WATER

In an experiment done in the town of Melekess, in the Volga area, ordinary artesian water was passed through a magnetic field which radically altered its properties. The water forms no scale in boilers and dissolves scale that is there, makes concrete stronger, speeds up plant growth and ripens fruit faster. The magnetization was done with a fairly simple setup: The water crossed a field of magnetic lines of force, and the salts in the water precipitated as sediment.

MEDICINAL AIR

About 20 years ago a Moscow physician, Georgi Yakovlev, first suggested that drugs be administered through the respiratory tract. The method has many advantages. In fact, once pulverized, any medicinal preparation can get into the blood via the lungs and bypass the body's physiological barriers—heart and alimentary tract.

But the new method had its drawbacks: Accurate dosage was difficult; small particles of drugs stuck together to form coagulations with much reduced or no effect.

Yakovlev decided to subject the particles of a pulverized drug to an electric field, to ionize them. This solved most of the problems. The particles were much smaller and could therefore permeate the lung alveolae more easily. The electrically charged particles, by repelling each other, resisted coagulation and made more accurate dosages possible.

Doctor Georgi Yakovlev's therapy method is helpful in the treatment of asthma, arteriosclerosis and hypertonia.

FAST-NEUTRON REACTOR

In operation at the Melekess Atomic Reactor Research Institute in the Volga area is a fast-neutron reactor, the Bor-60. This type of power reactor can use natural uranium most effectively. Specialists think fast-neutron reactors will eventually lead the field in atomic power engineering.

DRY-LAND CATAMARAN

An unusual-looking tractor has been designed by engineers from the city of Kishinev, Moldavian Republic. The new machine is intended for vineyards, tea plantations, small fruit patches—wherever maneuverability is desirable. A rigid arched frame connects two independent sets, each with its own engine. By increasing rpm in one of the engines, the tractor driver can turn his machine around smoothly. To make a turn in a very small area, practically on the spot, he merely switches one of the sets for forward and the other for backward travel.



CZAR'S VENETIAN GOBLET

During restoration work on the Archangel Cathedral in the Moscow Kremlin the white stone sarcophagus of Ivan the Terrible was opened. Under the heavy lid were the czar's remains wrapped in rotted vestments, and a bright blue goblet. Scholars of the Kremlin museums established that the goblet was made in Venice.

How did it come to Russia? We know that in the late fifteenth century Russia's Grand Dukes sent ambassadors to Italy on several occasions and received Italian envoys. Ivan the Terrible's future wife, Sophia Paleolog, come to Moscow from Italy at that time. Either Russian or Italian ambassadors must have brought the czar this prized goblet—by his orders the only object placed in his sarcophagus when he died in 1584.

BIRCH BARK TEA SET

Craftsmen from Vologda, a town in north European Russia, have long been famous for their skill in fashioning articles from birch bark—an ancient craft. A tea set made of birch bark, the work of Alexandra Vorobyova, Vologda's oldest craftsman, has been displayed at many Soviet and foreign applied arts exhibitions.





HANDICRAFT EXHIBIT

A real souvenir should be not something that happens to strike a tourist's eye, but a piece of the history of the place and the culture of the people, a specimen of centuries-old tradition. All over the Soviet Union there are handicraft studios that produce just such souvenirs. An exhibition held in Moscow displayed 1,280 items made by craftsmen of all the 15 republics.

LIGHTING DIAMOND QUARRIES

Mining in Yakutia is done under rigorous conditions: long and cold winter and polar night. The diamond-mining quarry at the famous Mir pipe is illuminated by three tower-mounted lamps. Each is seven feet long and 20,000 watts. Filled with xenon, an inert gas, the lamps not only light the mine but also serve as a kind of umbrella. Since the lamps are heated to a temperature of 600-700 degrees Centigrade, the rain and snow around them evaporate in mid-air.

The same type of lamp is used to light up an entire hamlet of diamond miners with a population of over five thousand.

ACTORS PERFORM IN FACTORY

There is a long-standing friendship between the Moscow Art Theater Company and the workers of the Krasny Proletary Factory. On the occasion of the theater's seventieth birthday, the actors paid the factory a visit. Dividing up into 13 groups, 80 members of the company performed in the various shops. They enacted scenes from *The Inspector General* by Nikolai Gogol, *The Lower Depths* by Maxim Gorky, *Russian Forest* by Leonid Leonov and other plays. In honor of the visit the factory newspaper printed reviews of Art Theater productions by its worker-correspondents.

EXPLOSION-BORN POLYMERS

Scientists keep finding new ways of using the energy of explosives for peaceful purposes. Hard monomeric substances were polymerized by a blast shock wave at the Institute of Chemical Physics of the USSR Academy of Sciences. A tablet with a crystalline monomer was put into an ampoule. An explosive charge was placed on the ampoule, and the whole thing set into a steel container. The power of the explosive charge progressively added to the pressure of the shock wave. The polymerization reaction did not start until the manometer pointer read well over 15,000 atmospheres.



TAPESTRIES FOUND

Hidden away in one of the old houses in the Rasplask District, Estonian Republic, were 10 tapestry pieces depicting the adventures of Cervantes' heroes—Don Quixote and Sancho Panza. Specialists say they were woven in the late eighteenth century. Before they are placed on display, the tapestries will pass through the hands of restorers.

LENIN'S ARCHIVES

The Central Party Archives of the Institute of Marxism-Leninism are on Sovetskaya Square in Moscow. Stored there are over 30,000 books, articles, notes and letters written by Lenin. They are kept in ironclad chests in an air-conditioned vault. The original texts are not brought here until they have passed through the laboratory for document preservation, restoration and conservation. It is only very rarely that the manuscripts are taken out of the vault. The usual practice is to use duplicates.



ESTHETIC LOCOMOTIVE DESIGN

An industrial designing bureau in Novosibirsk, Southern Siberia, doing research in industrial esthetics, has redesigned the exterior of the VL-80 electric locomotive. The cab is brought forward and equipped with large windows to provide an open view of the railway track. The inside of the cab has a microclimate setup. The locomotive's control board is laid out for maximum convenience and efficiency.

FROM PLANE MODEL TO "NUTCRACKER SUITE"

The Kirov Young Pioneer Palace, a great favorite of Leningrad's young people, has groups for young airplane modelers, radio technicians, naturalists, astronomers and artists. The palace's ballet studio recently staged Tchaikovsky's *Nutcracker*.

ICE KINGDOM'S INHABITANTS

Contrary to almost universal opinion, the Antarctic seas abound in animal and plant life. The evidence was obtained by Leningrad biologists who went down ice holes off the shores of the sixth continent 150 times. They descended to 165-foot depths.

In the ice-cold southern polar waters, the researchers found, the upper level—the ice layer—is practically uninhabitable. The loose boundary between ice and water is inhabited by small crustacea and algae. At depths below that, particularly at the bottom, there is a profusion of life. In between algae as long as 100 feet there are multitudes of fish, crustacea, starfish, spiders.

Several thousand of Antarctica's underwater inhabitants were brought to Leningrad for laboratory study.



N AIR BREAKWATER

eakwaters—thick walls of concrete blocks weighing many —have to be built in coastal s to curb the enormous de- tive power of waves. A break- er is an expensive and difficult to build.

oscow specialists are experi- ting with a substitute—air. a port area they place a few s with holes at a specified h and connect the pipes to a pressor set. The air bubbles ing out of the pipes and rising v particles of water along with), thereby setting up a curtain ater against which the waves ık and lose force.

ıe scientists did their experi- ts at the water reservoir in nenchug, the Ukraine, during rm. The pneumatic breakwater mounted on a frame and im- ed to various depths. At 20 the new device cut down by ıer cent the energy of 10-foot- waves.



ANGLER'S AIRLINE

ningrad's amateur fishermen used to board a bus to reach e Ladoga, 30 miles from the Now winter fishing enthusi- use the "angler's airline." It es Smolny Airport every Satur- morning and gets them to the in half an hour.

CKETS IN THE ARCTIC

e Druzhnaya Geophysical Ob- ervatory on Heiss Island in ız Josef Land is the biggest northernmost in the Arctic. e, at 80 degrees N. Lat., about ıundred scientists work in a ety of fields. For a decade the observatory has been in- igating variations in the h's magnetic field, the inten- of cosmic rays and the iono- ere, that electric envelope ınd our planet.

ıe observatory has a launcher meteorological rockets. Pro- ed by powder, they can reach altitude of 112 miles. The ob- atory is planning to use rock- which will shoot out clouds of um vapors at the uppermost ndary of the atmosphere. By tographing the sodium trails ı two points, it will be possible letermine the velocity and di- ion of the wind and the tem- ature and density of the upper osphere.



SELF-PROPELLED MINING

At the Achisai Polymetallic Combine in Kazakhstan ore is extracted with a complex of self-propelled machines: a self-propelled unit for charging shot holes at high faces, self-propelled boring plant, loading machines, and self-propelled tubs which can carry 12-ton loads. With these machines ore can be extracted simultaneously from several ore beds on different levels.

LASER COMMUNICATION CHANNELS

Presently in operation in Moscow is an experimental telephone line using quantum generators. Lasers and light receivers are mounted within the limits of direct visibility on tall buildings. The light beam carries not only speech and music but black-and-white and color television broadcasts.

The optical communication line has its obstructions: Fog, snowfall and frost absorb and scatter light and reduce the range of communication. Researchers are looking for "all-weather" waves that will pass through snow, mist and rain with minimum absorption.

Specialists in the field have set themselves another task—to develop light-beam cable lines for placement underground. Such lines will be able to accommodate a far greater number of communication channels, since the protected laser beam can reach to immeasurably longer distances.



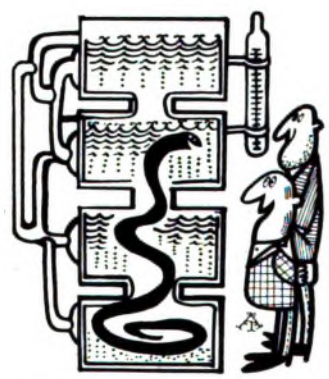
SECRET OF THE BRAIN

The human brain perceives and inhibits pain not only with neurons, but also with the mysterious glia cells that fill the brain space between the neurons. After several years of research, Soviet neurophysiologist Andrei Roitbak maintains that impulses brought to the brain through the senses are excited not only by the neurons but by glia cells also. His experiments have shown that during the emergence of slow currents, the activity of the neurons is inhibited and they fail to produce the rapid electric discharges so typical of them. Soviet physiologists say Dr. Roitbak's findings may alter our concepts of the mechanisms of memory, emotions and sleep.



INVITATION TO "WINDMILL"

At the entrance to the Ukrainian town of Korsun-Shevchenkovski, on top of a small hill, architects have converted a windmill into a restaurant. National style in everything,—waiters' dress, dishes, music,—is the motif of this unusual restaurant.



THE SARGASSO SEA IN AN AQUARIUM

Zoologists in Minsk, the capital of Byelorussia, have designed an eel aquarium. It will be built of four interrelated pools with artificial sea water similar in salt composition and temperature to the water in the Sargasso Sea, where the eel goes every year to spawn. The experimental setup is for study of the life cycle of this extraordinary fish.



ISOTOPES AT WORK

The State Institute of Applied Chemistry supplies the country with some 800 chemical compounds using isotopes. The institute's products find their way into industrial shops where isotopes are used to count the number of workpieces on a conveyor and into medical clinics and biologists' laboratories where "labeled atoms" permit the observation of deep-lying processes in animal and plant organisms.



CHECKUP BY MACHINE

One of Moscow's locomotive yards has a universal automatic machine which checks whether an electric locomotive is ready for the trip. It makes a practically foolproof test of the electric circuits and the performance of all the mechanisms.

EIGHTY-CAMERA COLLECTION

In 1924 Grigori Dorokhov, then a young teacher in the city of Voronezh, Central Russia, acquired his first camera. Now head of the chair of foreign languages at the Voronezh Institute of Foreign Languages, he has 80. Some of the cameras in his collection have a very long record indeed. They are, in fact, the ancestors of modern photographic techniques, for instance, the Ango clapcamera, made in 1893 of ebony and with a curtain shutter; and the Kompakt, one of the first Russian cameras. A showpiece is a reporter's mirror camera, an Ika Reflex; one of these cameras photographed the events of the October 1917 Revolution.

The collection also includes photographic lenses—universal, fast, wide-angle.



GEORGIA LINE ELECTRIFIED

For 60 years the narrow-gauge Borzhomi-Bakuriani Railway in Georgia has been served by small locomotives aptly and lovingly called "cuckoos." They took three and a half hours to make the 23-mile trip. A team from the Lenin Polytechnic Institute in Georgia worked out a project for changing over to electric traction. The electric locomotives for the overhauled line were bought in Czechoslovakia. Recently an electric train made the first trip from the health resort town of Borzhomi to Bakuriani with all stops en route in an hour and a half. It carried skiers and hikers.

KUBAN STONECUTTERS

The Kuban Cossacks are famous for their horsemanship and their farming. The artistic talents of these peasant-warriors found expression in house and clothing ornamentation and in folk song. But the Kuban had no stonecutting tradition until craftsman Vasili Sibilev came to the village of Otradnoye from the Urals. He found men there with whom he shared his love for stone and his skill. This small group grew into an artel, then into a factory.

Today the factory turns out 118 items made of stone. Most of the pieces are in the Russian national style. But lately the artists and craftsmen have been using themes inspired by the different peoples of the multinational Northern Caucasus.

PROFESSIONAL SOCIETIES

Russian engineers and scientists founded their first large nationwide organization to exchange research experience, the Russian Technical Society, on November 20, 1866. It was followed by societies in the various disciplines. For instance, Alexander Popov made his first report after he invented the radio to the Russian Physicochemical Society. There are now 21 scientific and technical associations with a membership of three million. During the past seven-year plan period they solved 850,000 important scientific, technical and industrial problems. The associations publish 50-odd journals. In the current five-year plan period they will be working on 50 major problems bearing on the distribution of the country's productive forces and its main directions of technological development.

AROUND the COUNTRY

Vladimir Lenin
1870-1970

FEDERATION AND NATION

By Victor Menzhinsky
Professor of International Law

THE WORLD IS CHANGING before our eyes. Age-old hopes for equality and justice are acquiring substance and are being embodied in the political principles of countries and peoples. These principles, whose origin lies far back in social history, develop as society advances into a necessary condition for its existence and continued progress.

Karl Marx and Friedrich Engels argued for the right of self-determination as far back as the nineteenth century. Proposing that principle for the solution of the national problem, they coined the postulate: "No nation can be free if it oppresses other nations."

Self-determination replaced the "principle of nationality," which by that time had played its progressive role. In the days of feudal separatism it had served to unify Germany, Italy and other states. But the principle in application was limited to the European peoples; it did not rule out colonial and other forms of national and social oppression.

What Is Self-Determination?

For self-determination to be meaningful it must have universal application. It must recognize the right of all nations and peoples, without exception, to independent existence—including peoples who have not yet achieved nationhood. The principle is a necessary condition for freedom and must be judged by the way it is exercised. For the Marxist it means: one, that *all* nations and peoples, without exception, have the right to self-determination; two, that this right implies the right to *state secession;* three, that in exercising the right to state secession the necessities of each concrete situation, rather than an obligation to secede, must be the guiding principle; four, that more than the formal equality of rights of peoples and nations is required: The conditions for achieving *actual* equality must be created.

An important point follows from this interpretation of self-determination: that economic and cultural backwardness cannot be regarded as a reason for denying peoples the right to independent statehood. Soviet experience has shown that formerly backward peoples can, with the aid of other nationalities, quickly organize their own national states and overcome their economic and cultural lags.

We could cite many illustrations to prove the point. Take Kirghizia in Central Asia, for instance. Before the October Socialist Revolution the developed countries of Europe hardly knew it existed. Today Kirghizia sells its manufactured goods to more than 50 countries on four continents.

Another example. The peoples of the Soviet Union speak 130 different languages. Fifty of these nationalities, the Kabardinians, Avars, and Lezghians, among, others, had no written languages before the Soviet period—these had to be created.

The examples serve to show that economic or cultural backwardness are no obstacles to self-determination. Proof is the way so big and multinational a country as Russia has solved its national problem. The American sociologist Franklin Frazier had an interesting comment on this score. He wrote that if you want to find out whether the Russians have solved their national problem, you must look at the record of the Second World War—the many peoples and nations within its boundaries fought to defend the Soviet Union.

At first glance there is a seeming contradiction between the recognition of the right of each nation to independent existence and a strong union of many nationalities. But it is only seeming. Marxist-Leninist theory has this to say on the matter:

The recognition of the right of all nations and peoples to secession is not a call to secede. In general, Marxists do not support separatism; they do not favor the idea of a world split up into small states. The advantages offered by big states for economic progress are evident even under capitalism and still more obvious under socialism. However, a multinational state can be strong only if it is built on a strictly voluntary basis. And this is impossible unless the right of all nations and peoples to self-determination is recognized.

Lenin wrote: "The proletarian party seeks to establish the largest possible states, because this is to the advantage of the working people; it seeks to *bring nations closer together and to ensure the merger* of nations, but it desires to achieve this end not through violence, but exclusively through a free and fraternal union of workers and other toilers of all nations."

What it boils down to is that under capitalism there can be no real equality between an economically powerful state and backward countries, even if they enjoy the same political rights, when economic advantage gives one side an instrument of pressure. Therefore, the answer is not simply formal equality but concrete steps to achieve real equality of all nations and peoples.

Marxism-Leninism recognizes the right of every nation and people to defend its independence and to fight for that independence with every means available. Depending on the conditions, the means will vary: from demands for self-determination at rallies and demonstrations to appeals in the press, radio and TV, to petitions to the authorities, to referendums. If these measures fail, the people have the right to rise up against national oppression. Marxism-Leninism regards the struggle for independence as lawful, and the socialist states support the struggle in every way possible.

Soviet Experience

The Soviet state was the first to proclaim the self-determination of all nations and peoples as a fundamental principle of its domestic and foreign policy. The Declaration of the Rights of the Peoples of Russia spelled out the national policy of the socialist state with regard to the peoples of the colonial border territories of former czarist Russia.

In that document the Soviet Government declared that it based its efforts to solve the national question on the principle of equality and sovereignty of the peoples of Russia, on the right to self-determination, including secession and the formation of independent states, on the abolition of all national and national-religious privileges and limitations and on the principle of free development of national minorities.

The declaration guaranteed the formerly oppressed people of Russia not only the right to secession, but to free development if they did not wish to secede. The majority of the peoples and nations agreed to remain within the framework of Soviet Russia. But while they did agree to a united multinational state, these nations and peoples, who for centuries had lived with hostility and mistrust, demanded that the rights be guaranteed. Lenin, always sensitive to national sentiment, proposed a federated state system.

A Soviet state on federated principles was legally constituted in 1918 in the Declaration of the Rights of the Working and Exploited People. It read in part: "The Russian Soviet Republic is being established on the principle of a free union of free nations, as a federation of Soviet national republics." The declaration was approved by the Third All-Russia Congress of Soviets and later became a component part of the constitution of the Russian Federation. It pointed out that, to meet the wishes of the multinational working people in the country, the Russian Socialist Republic was being formed as a federation. The declaration underscored the right of every nation to self-determination, including secession.

Some of the peoples of the former Russian Empire chose to set up independent states in the form of Soviet socialist republics (Byelorussia and the Ukraine, for instance), others in the form of Soviet democratic republics (Bukhara and Khiva), and still others in the form of bourgeois republics (Latvia, Lithuania, Estonia and Finland).

Some people cited Latvia, Lithuania, Estonia and Finland to support their contention that the right of peoples to self-determination was a misdirected principle, because it led to the breakup of big states and to separation. Life did not bear that out.

On the eve of Hitler's attack on the Soviet Union the peoples of Latvia, Lithuania and Estonia expressed their desire to enter the Soviet Union. They became union republics.

Soviet national policy proved its viability early. One of its major achievements, in 1922, was the voluntary union of the Soviet republics into a united state—the Union of Soviet Socialist Republics. Initially it consisted of the Russian Federation, the Ukraine, Byelorussia and the Transcaucasian Federation.

This union was prepared for by the entire course of previous development. Initially it took shape as an alliance to repel the interventionist armies of foreign states that were trying to strangle the socialist revolution. Later common economic interests held it together.

Military intervention threatened the very existence of the Soviet republics and made cohesion imperative. Late in January 1919 the government of the Ukraine published a declaration calling for reunification with Soviet Russia in a socialist federation. It also appealed to the other socialist states for a military alliance against foreign intervention. In May 1919 Lenin signed a draft directive of the Central Committee on the military unity of the union republics. This draft provided for their unification. Legally the alliance was formed in June 1919. For instance, the treaty between the Russian Federation and Byelorussia pointed out that the sides were entering an alliance "proceeding from the right of peoples to self-determination proclaimed by the Great Proletarian Revolution."

This principle underlay the military and economic alliance of the Soviet republics, and within a relatively short time it prepared the conditions for closer association as a Union of Soviet Socialist Republics.

The step was given legal form in 1922 by the Declaration on the Establishment of the Union of Soviet Socialist Republics, which said that the "union . . . was a voluntary association of equal peoples." Each republic was guaranteed the right of free secession from the union by the Treaty on the Formation of the USSR, Article 26, and again in 1924 by the Constitution of the USSR, Chapter II, Article 4.

The principle of self-determination was confirmed once again in the Constitution of 1936. The Eighth All-Union Congress of Soviets voted down an amendment to Article 17 of the draft constitution that proposed to delete the thesis giving each union republic the right to secede from the USSR on the ground this thesis was no longer valid, since the nations had entered the union voluntarily.

Fifteen union republics were formed. They entered the federation but retained their autonomy. The republics have their own state apparatus, their own constitutions, budgets, lawmaking bodies and territory which cannot be changed without their agreement. The union republics have a right to equal and full representation in the Soviet of Nationalities and the Presidium of the USSR Supreme Soviet. They have the right to demand the convocation of an extraordinary session of the USSR Supreme Soviet, to hold referendums, etc.

The Tenth Session of the Supreme Soviet of the USSR, held in 1944, enlarged the powers of the union republics. They were granted the right to enter into direct relations with foreign states, to conclude agreements with them, exchange diplomatic and consular representatives and to organize their own military units. For various reasons these rights had previously been delegated to the union.

The sovereignty of a union republic, with its own consent, is limited only to the degree required to ensure its own interests. For instance, foreign relations, questions of war and peace and the country's defense, foreign trade, management of the monetary and credit system, approval of changes in borders between the union republics, state security and national economic planning have been delegated to the central government.

The powers of the union republics with regard to industrial management and legislation have now been further enlarged. Thus, day-to-day practice demonstrates that self-determination fosters the development of the statehood, economy and culture of a people. This is perhaps the compelling reason why no republic has ever raised the question of seceding from the union.

The Decree on Peace

The experience of the Soviet Union has not passed unnoticed. It has convinced many oppressed peoples that economic and cultural retardation need not be permanent. The progress in every sphere of life of the once backward peoples and nations of czarist Russia shown the oppressed peoples of the world that political sovereignty and economic independence can be won.

In framing its foreign policy, the Soviet state proceeded from the fact that the emancipation of the oppressed peoples of czarist Russia was only the first step in the liberation of all the world's colonial and oppressed peoples. From the early days of its existence it insisted that the principle of self-determination be recognized by all other states.

The Decree on Peace drafted by Lenin was a new type of foreign policy by a new type of state. It enunciated principles by which the socialist states are guided in their foreign policy to this day. One of these principles is the recognition of the right of all nations and peoples to self-determination, including the right to form their own independent states.

The decree denounced annexation as a violation of the right to self-determination. The Soviet state declared that "in keeping with the legal conceptions of democracy in general and of the working classes in particular" annexation should be regarded as any "adjoining of a small or weak nation to a large or strong state without a clearly expressed voluntary consent or desire by that nation, irrespective of when this forceful joining took place, irrespective of whether the forcefully adjoined or forcefully retained nation is developed or backward and, finally, irrespective of whether this nation lives in Europe or far away overseas." In other words, the principle of self-determination was put forward as a principle of internatonal law in general.

The Decree on Peace emphatically rejected various methods of acquiring territory that were earlier regarded as "lawful," among them conquest, initial acquirement, prescriptive right to procured territory, etc. This, of course, did not mean that the territorial integrity of a state must necessarily be violated because at one time or another it was formed by force. Territorial integrity based on free and voluntary consent of the nations inhabiting the territory of the state was to be preserved. If this voluntary consent was lacking, the territorial status quo could be changed, but only by the will of the people living there.

The decree extended the scope of defense arising from international law to cover all peoples, recognizing at the same time their right to their own destiny. It is worth noting that this right was recognized not only for the "civilized" peoples of Europe, but also for the colonial peoples of Asia and Africa.

The decree declared aggressive war a grave international crime. It said in part: "The Government maintains that to pursue. . . the war only to divide between the strong and rich nations the weaker nationalities that they have conquered is a most serious crime against humanity. . . ."

The Decree on Peace was an appeal to "all belligerent peoples and their governments." By appealing directly to the peoples, the Soviet Government sought to acquaint them with the peaceful and humanistic principles of Soviet domestic and foreign policy, principles of which the capitalist countries had tried to keep people ignorant.

As early as the Brest-Litovsk Peace Conference—the first international conference in which the Soviet Government took part—it proposed the following six points as a basis for a universal democratic peace:

1) No forceful annexation of territories seized during the war would be permitted. The troops occupying these territories would be withdrawn therefrom as soon as possible.

2) The political independence of peoples that had been deprived of independence in the course of the war would be fully restored.

3) The national groups that had not enjoyed political independence before the war would be guaranteed the possibility of deciding freely by referendum their affiliation to one state or another or their own state independence; the referendum to be organized so as to give absolute voting freedom to the whole population of the given territory, including emigrants and refugees.

4) In territories inhabited by several nationalities the rights of the minorities would be protected by special laws which would ensure cultural and national independence and, actual circumstances permitting, administrative autonomy as well.

5) Reparations would not be permitted; reparations exacted were to be returned.

6) The colonial problems would be resolved in keeping with the first four points.

As we can see, the principle of self-determination actuated the Soviet proposals.

Aware of the tremendous popularity of the Soviet proposals for a fair and universal peace, Germany and its allies were forced to declare that "the fundamental points of the Russian declaration could be accepted as a basis for talks on the conclusion of such a peace." This was the first time these new principles on foreign policy advanced by the Soviet state were recognized.

International Experience

The treaties concluded by the Soviet republics with the bourgeois states that were formed from territory of the former Russian Empire pointed out that the principle on which these states were being organized was the right of all nations to self-determination. Thus, the principle took on the character of a standard for international law. The Soviet state made self-determination its fundamental prin-

Continued on page 59

"OUR YOUTH THREW US ON THE ICE OF KRONSTADT"



THE KRONSTADT MUTINY BROKE OUT ON MARCH 2, 1921, JUST AS THE DELEGATES WERE GATHERING FOR THE TENTH PARTY CONGRESS. THESE DELEGATES HELPED PUT DOWN THE REVOLT.

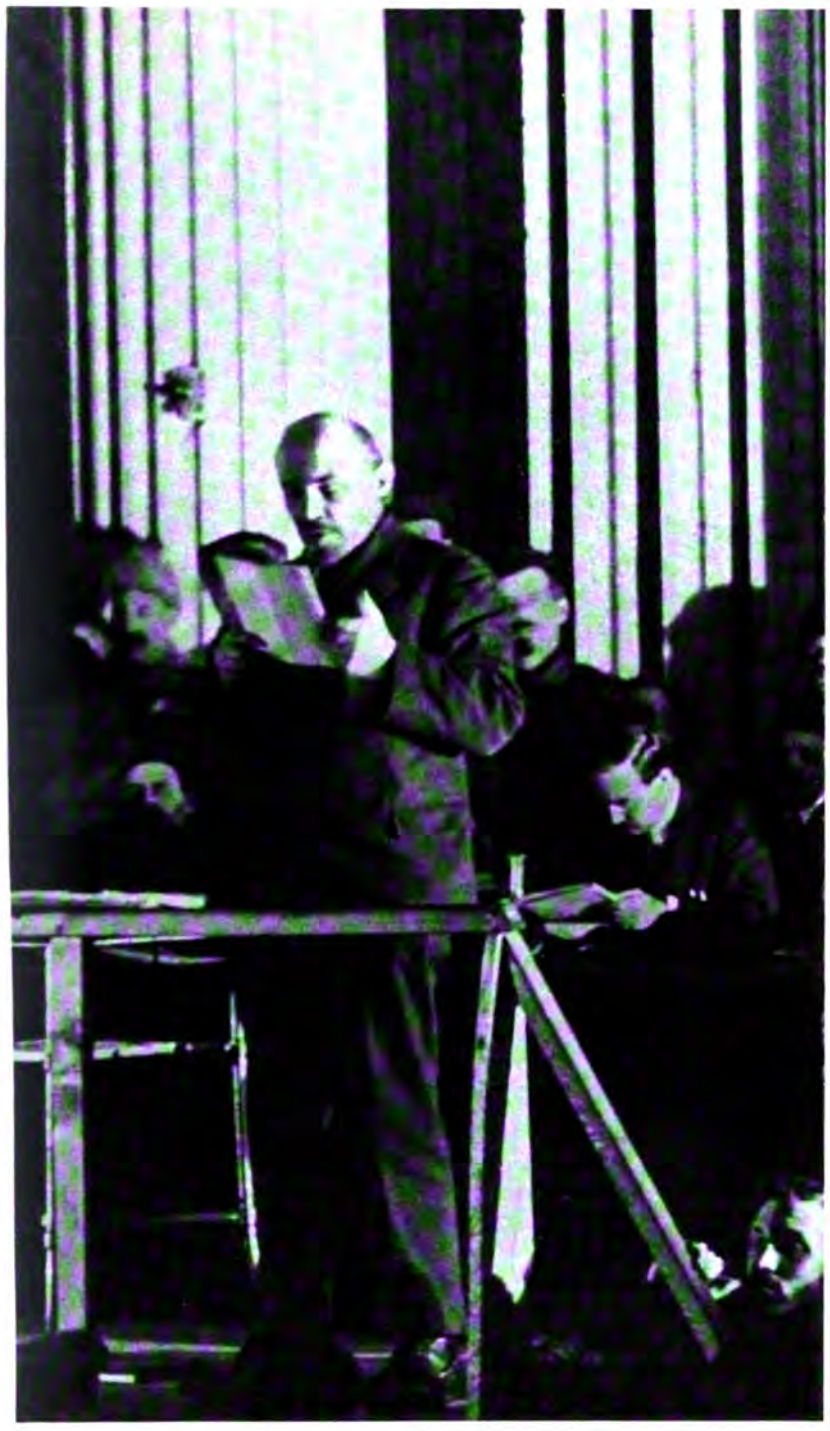
MARSHALS OF THE SOVIET UNION KLIMENT VOROSHILOV AND IVAN KONEV COMMENT ON A HISTORIC PHOTOGRAPH

THIS PHOTOGRAPH WAS TAKEN in March 1921. Around Lenin are those delegates to the Tenth Party Congress who helped put down the Kronstadt uprising.

Events came fast on the eve of the congress. On March 2, when delegates were already arriving in Moscow, word came from Petrograd that the garrison of Kronstadt, a naval fort on the Baltic Sea, had mutinied.

The rebellion was headed by Petrechenko, a naval clerk on the battleship **Petropavlovsk** and a member of the Socialist-Revolutionary Party. The true leaders of the uprising, however, were former czarist naval officers who had managed to worm their way into the confidence of the Bolsheviks. They proceeded to make arrests on the ships and in the fort itself of members of the Kronstadt Soviet, of Communists and all those loyal to the Revolution. Only the military school cadets managed to escape the mutineers and cross the ice to Oranienbaum.

When Lenin heard of the events on the Baltic, he immediately signed a decree declaring a state of siege in Petrograd; the city was next door to the fort. That same day preparations were begun to attack. Mikhail Tukha-



LENIN, CHAIRMAN OF THE COUNCIL OF PEOPLE'S COMMISSARS, NEVER READ HIS SPEECHES, SO HE MUST BE READING A RESOLUTION TO THE CONGRESS. THE PHOTO IS DATED MARCH 1921.

chevsky, a young and gifted military leader and Civil War hero, was given the command.

The first assault was made on the night of March 7, the day before the Tenth Congress was to open in Moscow. However, it proved impossible to capture so powerful a fort "in a rush." And the Party Congress sent to the Baltic over 300 of its delegates, experienced Red Army commanders and commissars. Among them was Kliment Voroshilov, now a Marshal of the Soviet Union. (He is standing behind Lenin, wearing a dark trench coat.)

This is what Voroshilov told us after a close look at the picture:

"An interesting photo indeed. It was taken after we returned victorious from Kronstadt. We asked Lenin to join us when the photographer came, just for memory's sake. It was difficult to find room for all of us on the steps of the staircase, and everyone, of course, tried to get as close to Lenin as he could. There's my aide, Rafail Khmelnitsky." Voroshilov pointed to a boy with his arm in a sling and two decorations on his field shirt. "Lenin saw Khmelnitsky, asked him how it had happened and whether the wound was serious. 'Oh, child's play,' the boy answered airily. Then Lenin asked Rafail to stand next to him. That's probably why he's smiling so broadly.

"I met Khmelnitsky in 1918, in the Ukraine. Our armored train had broken into a station the White Guards had seized. We disarmed them with almost no bloodshed at all. I was returning calmly to my carriage when I suddenly heard a noise. I turned quickly and there was a puny little chap hanging on to the arm of a heavy, muscular thug, grabbing at the gun he was trying to raise. The big fellow did finally free his gun, but by that time I had already snatched out my Mauser. . . .

"That was how we met. The boy came from the Ukraine; he had just volunteered for the Red Army. I took him on my staff, and we were hardly separated all through the Civil War. His first Order of the Red Banner Rafail got for the battles near Lvov, with the White Poles; his second for Kronstadt. There he fired a cannon straight from an open position, then raised the boys for a counterattack; that was when we were surrounded. He was wounded twice and was given his decoration immediately after the assault.

"I persuaded Rafail to go to the Military Academy. He graduated and in World War II was a lieutenant general and a corps commander. Sorry to say, he died a few years ago."

"Do you recognize anyone else?"

"I really can't say—it was so many years ago. We were very young then. As in Edward Bagritsky's poem, 'Our youth led us into that campaign of sabers, our youth threw us on the ice of Kronstadt. . . .' Oh, but I do think I recognize some faces. There, for example, in the top row, is Ivan Konev, now a Marshal, a fine soldier."

Ivan Konev (on the photo he is marked by a cross) is one of our famous military leaders. In the Great Patriotic War the front he commanded (the First Ukrainian) liberated thousands of towns and villages, saved Cracow, took part in the attack on Berlin. Detachments from his front met with the American army on the Elbe. Everyone by now is used to seeing Konev in portraits with his marshal's gold star on the knot of his tie, with decoration ribbons shoulder to shoulder. Among his decorations is the Order of Victory; it has been awarded only 19 times.

Marshal Konev recollects that it was this beautiful order, with its diamond rays, that especially attracted newspapermen at the diplomatic reception held on the occasion of the fall of Berlin.

On this old photograph, however, Ivan Konev looks very inconspicuous. "I came to the congress from the Far East," he told us, "where the Civil War had taken me. Before that I had chased the White bands all over Vologda guberniya. Then I was sent to the Eastern Front to fight Admiral Kolchak. First I was brigade commissar, then the commissar of a division, finally of a corps.

"To Moscow, to the congress, I came when I was still commissar of a brigade, and I went to Kronstadt as a rank-and-file soldier, as we all did. You know, I had seen many battles, but that assault was unparalleled. Such a first-class naval fort—and captured by infantry, on foot, moving over March ice already covered with water every other step! And don't forget that the fort was guarded by the guns of battleships too! But we made up our minds then —either we take Kronstadt or we die in the attempt. We couldn't let Lenin down.

"By the way, when we left Kronstadt we missed his report, so when we returned Lenin gave it again especially for us. He spoke about the New Economic Policy, about the union with the peasants. And for the first time we really felt that peaceful times had come at last."

THE NATIONAL PRIDE OF THE GREAT RUSSIANS

BY VLADIMIR I. LENIN

LENIN WROTE THIS ARTICLE IN DECEMBER 1914, EARLY IN THE FIRST WORLD WAR. CZARIST RUSSIA WAS ONE OF THE BELLIGERENTS. IT GIVES HIS VIEWS ON SUCH PROBLEMS AS THE RELATIONS BETWEEN LARGE AND SMALL NATIONS, PATRIOTISM AND INTERNATIONALISM.

WHAT A LOT OF TALK, argument and shouting there is nowadays about nationality, about the fatherland! Liberal and radical cabinet ministers in England, a multitude of "advanced" journalists in France (who prove to be in full agreement with the reactionary journalists) and a host of official, Cadet and progressive hack writers in Russia (including several Narodniks and "Marxists")—all laud the freedom and independence of their "country," the grandeur of the principle of national independence, in a thousand different keys. Here one cannot tell where the venal eulogist of the hangman Nicholas Romanov [1] or of the torturers of Negroes and Indians ends, and where the rank philistine begins, who from stupidity or spinelessness "drifts with the stream." Nor is that distinction important. We see before us a very wide and very deep ideological trend, whose roots are firmly connected with the interests of the landlords and capitalists of the dominant nations. Scores and hundreds of millions are spent every year on the propaganda of ideas advantageous to these classes: It is a pretty big mill that takes its waters from all sources —from the confirmed chauvinist Menshikov to chauvinists by reason of their opportunism or spinelessness, like Plekhanov and Maslov, Rubanovich and Smirnov, Kropotkin and Burtsev.[2]

Let us, Great-Russian Social-Democrats, also try to define our attitude to this ideological trend. It would be unseemly for us, representatives of a dominant nation in the far east of Europe and a goodly part of Asia, to forget the immense significance of the national question—especially in a country which is rightly called the "prison of the peoples"—at a time when, precisely in the far east of Europe and Asia, capitalism is rousing to life and consciousness a number of "new" nations, large and small; at a moment when the czarist monarchy has placed millions of Great Russians and non-Russians under arms, so as to "solve" a number of national problems in the interests of the Council of the United Nobility and of the Guchkovs, Krestovnikovs, Dolgorukovs, Kutlers and Rodichevs.[3]

Is a sense of national pride alien to us, Great-Russian class-conscious proletarians? Certainly not! We love our language and our country, and we are doing our utmost to raise her toiling masses (*i.e.*, nine-tenths of *her* population) to demo-

[1] Nicholas A. Romanov (1868-1918), the czar of Russia from 1894 to February 1917.

[2] M. O. Menshikov (1859-1919), a reactionary Russian publicist. G. V. Plekhanov (1856-1918), an outstanding figure in the Russian and international working-class movement, the first propagandist for Marxism in Russia; after 1903 he took opportunist positions (Menshevism). P. P. Maslov (1867-1946), an economist, in Soviet times was an academician. During the period under review in this article he belonged to the Mensheviks, social-chauvinists. I. A. Rubanovich (1860-1920), one of the leaders of the Russian petty bourgeois party of Socialist-Revolutionaries. E. Smirnov (E. L. Gurevich, born in 1865), a Menshevik. Prince P. A. Kropotkin (1842-1921), a leader of the Russian anarchists. V. L. Burtsev (1862-1936), a participant in a number of non-Marxist trends in the Russian revolutionary movement, after 1917 an émigré and counterrevolutionary.

[3] The Council of the United Nobility, counterrevolutionary political organization of Russian landowners founded in May 1906. A. I. Guchkov (1862-1936), a prominent Russian capitalist, leader of the reactionary Octobrist Party founded in 1905; in 1910-1911 he was chairman of the State Duma; during the First World War, chairman of the Central Military-Industrial Committee of Russia; after Czar Nicholas II was deposed in February 1917, Minister of War in the first bourgeois Provisional Government; after the October 1917 Revolution he became an émigré and counterrevolutionary. G. A. Krestovnikov (born in 1855), a major Russian industrialist. Prince P. D. Dolgorukov (1866-1930), a big landowner, prominent in the reactionary Cadet Party; after the October Revolution a counterrevolutionary. N. N. Kutler (1859-1924), a leading figure in the Cadet Party; in 1905-1906 a minister in the czarist government; under Soviet power worked in the People's Commissariat (Ministry) of Finance. F. I. Rodichev (born in 1856), a Russian landowner, one of the leaders of the Cadet Party; emigrated after the October 1917 Revolution.

cratic and socialist consciousness. To us it is most painful to see and feel the outrages, the oppression and the humiliations inflicted on our splendid country by the czar's hangmen, the nobles and the capitalists. We are proud of the fact that these outrages have met with resistance in our midst, from the Great Russians; proud that from *our* midst came Radishchev, the Decembrists and the revolutionary commoners of the seventies;[4] that in 1905 the Great-Russian working class created a mighty revolutionary party of the masses; that at the same time the democratization of the Great-Russian muzhik began, and he set about overthrowing the priest and the landed proprietor.

We remember that half a century ago the Great-Russian democrat Chernyshevsky, who devoted his life to the cause of revolution, said: "A miserable nation, a nation of slaves, from top to bottom—all slaves." The avowed and unavowed Great-Russian slaves (slaves of the czarist monarchy) do not like to recall these words. Yet, in our opinion, these were words expressing genuine love for our country, love saddened by the absence of a revolutionary spirit among the masses of the Great-Russian people. This spirit was absent at that time. There is not much of it now; but it exists. We are filled with a sense of national pride because the Great-Russian nation, *too*, has created a revolutionary class, because it, *too*, has demonstrated that it can give mankind great examples of struggle for freedom and socialism, and not only great pogroms, rows of gallows, dungeons, great famines and great servility to priests, czars, landlords and capitalists.

We are filled with a sense of national pride, and for that very reason we *particularly* hate *our* slavish past (when the landed nobility led the peasants to war in order to crush the freedom of Hungary, Poland, Persia and China), and our slavish present, when these same landed proprietors, backed by the capitalists, are leading us to war in order to throttle Poland and the Ukraine, crush the democratic movement in Persia and China, and strengthen the gang of Romanovs, Bobrinskys and Purishkeviches[5] who are a disgrace to our Great-Russian national dignity. A man is not to be blamed for being born a slave; but a slave who not only does not want to strive for freedom but justifies and embellishes his slavery (for example, calls the strangulation of Poland and the Ukraine, etc., a "defense of the fatherland" of the Great Russians)—such a slave is a lickspittle and scoundrel who inspires legitimate anger, contempt and disgust.

"No nation can be free if it oppresses other nations," said Marx and Engels, the greatest representatives of consistent democracy of the nineteenth century, who became the teachers of the revolutionary proletariat. And we Great-Russian workers, filled with a sense of national pride, want, come what may, a free and independent, democratic, republican, proud Great Russia, one that will base its relations with its neighbors on the human principles of equality, and not on the feudal principle of privilege, so degrading to a great nation. And just because we want this, we say: It is impossible, in the twentieth century, in Europe (even in the far east of Europe), to "defend the fatherland," except by using every revolutionary means to fight against the monarchy, the landlords and capitalists of our *own* fatherland, *i.e., the worst* enemies of our country. We say that Great Russians cannot "defend their fatherland" unless they desire the defeat of czarism in any war as the lesser evil for nine-tenths of the population of Great Russia. For czarism not only oppresses those nine-tenths economically and politically, it demoralizes, degrades, dishonors and prostitutes them by teaching them to oppress other nations and to cover up this shame with hypocritical pseudo-patriotic phrases.

We may be told that apart from czarism and under its wing, another historical force has arisen and become strong, that of Great-Russian capitalism, which is performing progressive work by economically centralizing and uniting vast regions. This objection, however, does not excuse, but, on the contrary, accuses even more strongly our social-chauvinists, who should be called czarist-Purishkevich socialists (just as Marx called the Lassalleans royal-Prussian socialists). Let us assume that history will decide the question in favor of Great-Russian imperial capitalism, and against the hundred and one small nations. This is not impossible, for the whole history of capital is a history of violence and plunder, blood and filth. We are not in favor of preserving small nations at all costs; *other conditions being equal*, we positively favor centralization and oppose the petty bourgeois ideal of federal relationships. Even if our assumption were true, however, it is, firstly, not our business, not the business of democrats (let alone of socialists), to help Romanov-Bobrinsky-Purishkevich throttle the Ukraine, etc. Bismarck, in his own Junker way, accomplished a progressive historical task, but he would be a fine "Marxist" indeed who, on these grounds, thought of justifying socialist support for Bismarck! Moreover, Bismarck facilitated economic development by uniting the scattered Germans, who were oppressed by other nations. The economic prosperity and rapid development of Great Russia, however, require that the country be liberated from the violence which the Great Russians perpetrate against other nations—our admirers of the true-Russian near-Bismarcks overlook this difference.

Secondly, if history does decide the question in favor of Great-Russian imperial capitalism, it follows that the *socialist* role of the Great-Russian proletariat, as the principal driving force of the communist revolution to which capitalism gives rise, will be all the greater. And the proletarian revolution requires the prolonged education of the workers in the spirit of the *fullest* national equality and fraternity. Consequently, the interests of the Great-Russian proletariat itself require that the masses be systematically educated to champion—most resolutely, consistently, boldly and in a revolutionary manner—complete equality and the right to self-determination for all the nations oppressed by the Great Russians. The interests (not in the slavish sense) of the Great-Russian national pride coincide with the *socialist* interests of the Great-Russian (and all other) proletarians. Our model will always be Marx, who, after living in Britain for decades, became half-English and demanded freedom and national independence for Ireland in the interests of the socialist movement of the English workers.

In this latter case that we have assumed, our home-grown social-chauvinists, Plekhanov, etc., etc., will prove to be traitors not only to their country, a free and democratic Great Russia, but also to the proletarian brotherhood of all the nations of Russia, *i.e.*, to the cause of socialism.

First appeared on December 12, 1914, in *Sotsial-Demokrat*, organ of the Central Committee of the Russian Social-Democratic Labor Party, then published in Geneva.

[4] See the article "Russian Revolutionaries" in the May 1969 issue of SOVIET LIFE on Radishchev, the Decembrists, Chernyshevsky, and the Russian liberation movement of the 1870s.

[5] The Romanovs, the czarist dynasty in power from 1613 to February 1917. The Bobrinskys, a family of big Russian landowners. V. M. Purishkevich (1870-1920), a large Russian landowner, a reactionary and monarchist.

LENIN IN PARIS

BY SERAFIMA GOPNER

UNTIL HER DEATH A FEW YEARS AGO SERAFIMA GOPNER (1880-1966) WAS ONE OF THE FEW REMAINING OLD RUSSIAN REVOLUTIONARIES. IN CZARIST TIMES SHE WORKED IN UNDERGROUND COMMUNIST PARTY GROUPS IN THE UKRAINE. AFTER THE REVOLUTION SHE HELD ELECTIVE POSTS IN THE SOVIETS. TOWARD THE CLOSE OF HER LIFE SHE DID SCHOLARLY RESEARCH ON THE REVOLUTIONARY MOVEMENT.



IN THE SUMMER OF 1910, after the arrest of many of our party comrades in Odessa and other cities in the Ukraine, I tried to continue underground revolutionary work in my native land, but without success. I therefore had to leave Russia. I outwitted the police, obtained a passport for travel abroad and in September found myself in Paris.

The feeling of being free, out of the clutches of the Russian police, soon gave way to anxiety. I recalled stories I had heard at home about the hardships of emigrant life. I asked myself: "Who needs me here? What can I do? Will I be able to earn a living?"

In those years, after the defeat of the Russian Revolution of 1905-1907, Paris was one of the centers for our political emigrants, revolutionaries who fled trial, prison, penal servitude and exile. Most of them had a very hard time of it.

Vladimir Ilyich, too, was living in Paris then. I hoped to meet him, but I thought he would not find my visit of any interest.

"Tomorrow at Eight . . ."

A comrade who met me in the street the day after my arrival dispelled my doubts. When he learned of my hesitation, he was surprised: "Can't you understand that Lenin simply grabs at every new person from Russia, like a hungry man at food!" Later I myself found this to be true. For Lenin, meetings with people who had just come from Russia were a source of fresh information about the situation at home. Far away from Russia, he was the ideological leader of our underground party at home, read many Russian newspapers and magazines and carried on an active correspondence.

From the comrade I met in the street I also learned the address, day and hour of the next meeting of the Paris group of our party's members, those who sided with Lenin, the Bolsheviks. At this meeting, held in a small room on the top floor of a café, I first saw him. He was sitting in a corner, bent over a chessboard. I recognized him immediately, for I had seen and heard him before, in 1907 in Finland.

Certain current problems were on the agenda. Lenin took the floor and spoke for no more than five to eight minutes. Many years have passed since and, of course, I do not remember that speech. But I do remember that his words made a strong impression on me, a most encouraging impression.

At the end of the meeting Lenin's wife, Nadezhda Krupskaya, came over to me. With a touch of friendly reproach she said: "And so you're that person who doesn't want to call on us! Ilyich asked me to be sure to ask you over. Come tomorrow, at eight in the evening."

At the appointed hour I arrived at house No. 4 on Marie-Rose Street. I was led right into his "reception room," a small kitchen with a small, rectangular table standing near a wall opposite the gas stove. The table was covered with oilcloth; this "reception" room also served as dining room. We sat down at the table for evening tea: Lenin, Nadezhda and her kind old mother.

I did not know with what to begin my account. But after Lenin's first words and his first questions, what I

had experienced in the past few months back home suddenly appeared in a new light. I myself began to see these things I was telling Lenin about differently and to realize that what I had to say was of some value. The reason for this change was probably the close attention he paid me. With occasional, carefully worded questions he directed my story, unnoticeably even to me, and did not let me muddle it. I became more and more absorbed in my own account and told him of the events of recent years in Odessa, Nikolayev and other Ukrainian cities. I told him about the struggle our comrades were having and how brutally the czarist authorities were treating revolutionaries.

That evening was the first time I felt how strongly people responded to him. His contemporaries note, in their reminiscences, how attentively he listened and with a few questions encouraged the person he was talking with. Toward the end of our talk I was sure that even here, in emigration, I could be of use to the party. I was especially encouraged when Ilyich suggested that I write everything down in an article for our party newspaper.

At the end of our talk, which lasted an hour and a half, Lenin bade me a friendly good-by and went into his "office." This room, which someone in his reminiscences called by that title, least resembled an office. On the walls were unpainted shelves with books; in the middle of the room was an oblong table, also unpainted, covered with paper and piled high with newspapers; and there were two or three old chairs, the very cheapest kind. That was his "office."

It was years later, when his collected writings were published, that we learned what really great work—theoretical, political, organizational—he was doing in those years.

Concern for His Comrades

And yet he found the time to help his comrades. Once, when I came home late in the evening, I found a note. It said that the evening before at Lenin's home they had discussed the condition of a sick comrade who had to be transferred to another hospital. Would I, on behalf of Lenin, see whether an acquaintance of mine, a well-known French surgeon, could arrange the transfer. The note asked me to let him know when I planned to go and how my talk went. After telephoning the surgeon, I informed Lenin that the appointment was for noon tomorrow. That same evening I received another note which said that Lenin wanted to go with me and that he would call for me at 11 in the morning.

Knowing how punctual he was, I listened for the doorbell at the appointed time. Suddenly I heard a noise on the stairs and hurried to open the door. It was Lenin climbing up to the sixth floor, taking two steps at a time and humming a tune. He was 40 years old then, full of good cheer and energy.

After exchanging a few words about our talk with the surgeon, we took the subway to the other end of Paris. The trip there and back and the visit to the doctor took two hours. Only those who knew him closely realized what the two hours' time meant to him.

Lenin, who was very tactful, attentive and demanding of our comrades, was also most demanding of himself. His example kept the party workers abroad from succumbing to the physical and psychological hardships of emigration. Most of our comrades manfully endured their forced unemployment and extreme financial need. The members of our Bolshevik organization enthusiastically carried out the diverse party assignments, including the most trifling, painstaking technical work. To get money for the publication of our party newspaper, we organized amateur concerts and even staged plays, for which we charged admission. Lenin did not attend these gatherings, but he gave them every encouragement.

No Compromise with Opportunism

I remember particularly one meeting of the Paris organization of our party at which Lenin gave a report. He characterized the general situation in the workers' movement of Russia and in our party as critical. Local party organizations, he said, were disintegrating, and even some of the leading workers were showing signs of apathy and depression. What was to be done under such conditions? There were two main thoughts he developed: 1) The only way out of Russia's difficult situation and that of the toiling masses was along revolutionary paths and not along "constitutional" paths as the opportunists, including the Mensheviks, advocated; 2) a new element was the fact that the working class of Russia had begun to produce its own leaders, capable people who could unify the party. Lenin believed that the party crisis could be met by mustering all the truly revolutionary forces.

That was a stormy meeting. Two conciliators said that an appeal for revolutionary consistency would only deepen the split. Lenin spoke again. He sharply attacked unprincipled demands for unity that did not take into account the terms on which this unity was to be achieved. A union of revolutionaries and opportunists would produce not a political party of revolution, but a "compromising jumble." The workers of Russia, he said, would understand us: As yet we were few, but we would be many if we defended our Marxist, revolutionary position to the end.

The meeting supported Lenin.

At the time my Paris meetings with Lenin took place, the rupture between the Bolsheviks, who supported him, and the Mensheviks, the opportunist wing of the party, was virtually complete. But among the Bolsheviks there were those who did not reject the Menshevik proposal that the discussion continue. The question was raised at a quickly convened meeting of the Paris group of Bolsheviks. Lenin was opposed to any more discussion. After the advocates of discussion spoke, Lenin reiterated his position and left the meeting.

His departure confused us; we did not know what to do. Some of those present left. Those who remained decided to send two comrades to Lenin's home to settle the question.

But Lenin was not in. The comrades were somewhat disturbed. Krupskaya told us that he was probably out walking by himself, his habit when he had something to think over. She suggested that we wait for him. And Lenin soon came into view walking energetically toward his home. He was excited. Glad for the unexpected meeting, he insisted we come inside in spite of the very late hour, and there the discussion began all over again. He repeated his arguments and cleared up all our doubts.

But he did not consider the question settled. He wanted to erase all traces of disagreement with this considerable part of the Paris group of his comrades. With that in mind he wrote a letter to the group with a detailed explanation of his position. The action reflected Lenin's

attitude toward the collective and his party comrades. He did not think it right to dismiss the reactions of even a part of the group. He himself drew up the list of comrades to whom his letter should be given for reading. I, too, read it.

Since this document has not yet been found, I will try to recollect some of the points he made. Discussion in emigration, he wrote, as opposed to the discussion workers in Russia were having, was fruitless. There in Russia, especially at the factories and plants, in the smoking rooms and other corners, many nonparty workers listen to the arguments of the Bolsheviks and Mensheviks. The discussions help them to develop politically, to become revolutionized, to choose their sides. In emigration, as a rule, those people who come to meetings know the arguments by heart and have long since chosen their side. It is impossible to get anyone to change his mind. We should do our discussing of principle in the party press. We should not waste our energy in idle talk. We must save our energy, learn, study the lessons of the past, prepare for a new revolutionary upsurge. The revolution would come; it would require us to be better fighters, not to make the same mistakes.

This letter had its effect. We dropped the question of discussions with the Mensheviks in emigration.

"The Revolution Is Close"

Lenin proved to be right when he predicted a new upsurge of revolutionary struggle. In December 1910, commenting on the demonstrations in Russia when Leo Tolstoy died, he wrote: "The Russian people are awakening to new struggle, advancing toward a new revolution."

In contrast to the skeptics who had buried the hope for a new Russian revolution, Lenin showed that not only would a new revolution come but that it was close. For not a single objective of the workers and peasants in the first revolution (1905-1907) had been achieved: The land still belonged to the landlords, there was no eight-hour working day and no democratic republic. The deep-seated causes of the first revolution still remained and a new revolution was inevitable. We had to prepare for it.

His certainty that the new Russian revolution was not far off Lenin underscored in a speech at the funeral of Laura and Paul Lafargue.

The day before the funeral, the newspaper *L'Humanité* asked those representatives of parties and organizations who wished to make speeches at the funeral to inform the editors the evening before. Lenin set off for the editorial offices of *L'Humanité* in the evening, but it was late at night when, with difficulty, he managed to get there and turn in his request. A huge crowd had gathered in the street in front of the newspaper office.

The day of the funeral, December 3, 1911, tens of thousands of French workers, carrying red banners, marched behind the two coffins to Père Lachaise cemetery. The hall of the crematory was too small, and the funeral service was held in the open.

After several others, Lenin spoke as representative of his party to the International Socialist Bureau. He spoke in French and said in part:

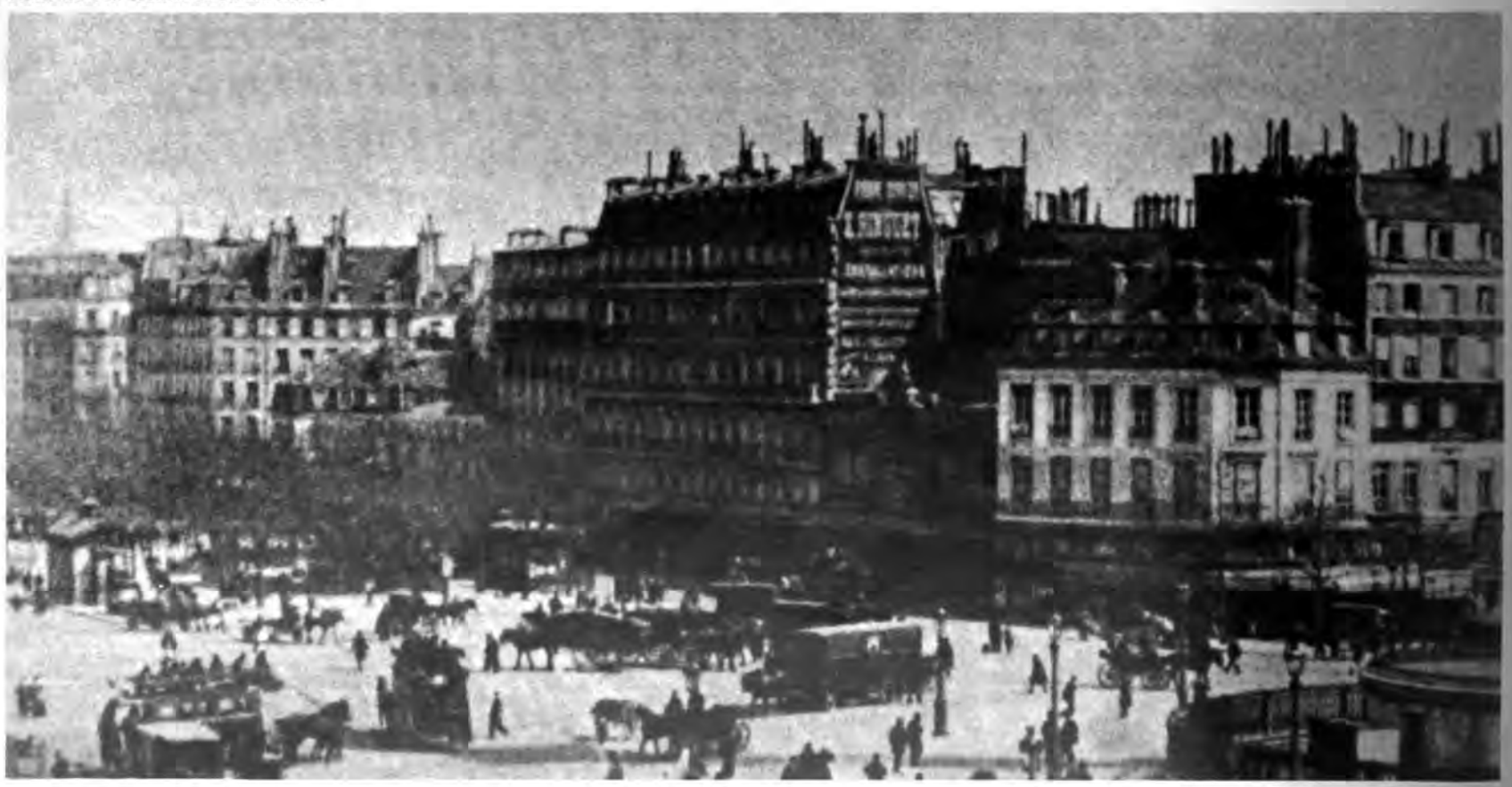
"We, Russian Social-Democrats, who have experienced all the oppression of an absolutism impregnated with Asiatic barbarity, and who have had the good fortune, through the writings of Lafargue and his friends, to draw directly on the revolutionary experience and revolutionary thought of the European workers—we can now see with particular clarity how rapidly we are nearing the triumph of the cause to which Lafargue devoted all his life."

Lenin went on to say, referring to the Russian Revolution of 1905-1907:

"The Russian revolution ushered in an era of democratic revolutions throughout Asia, and 800 million people are now joining in the democratic movement of the whole civilized world."

No, it was not funeral despondency, but the buoyant anticipation of new revolutionary storms that emanated from this speech of Lenin's.

PARIS IN 1895 (PLACE DE LA BASTILLE)



QUERIES FROM READERS

On Byelorussia

Ordinarily we do not answer anonymous letters. But we thought the points made in the letter discussed below would interest other readers.

First, a few words about the "Russian imperialists," who, the writer of the letter says, have subjugated the other Soviet republics, including Byelorussia.

Let's look at the facts. The revolutionary movement in Russia at the close of the nineteenth century stimulated the formation of Marxist circles in many Byelorussian cities—Minsk, Gomel, Vitebsk, Brest and others. During the first Russian Revolution of 1905-07, the people of Byelorussia also came out against their exploiters, the landowners and capitalists. More than 20,000 Byelorussian workers took part in strikes in January 1905. Now, the Russian Social-Democratic Labor Party, which was not founded until 1903, did not have anywhere near that many members at the time. Who was it then rose up in Byelorussia in 1905?

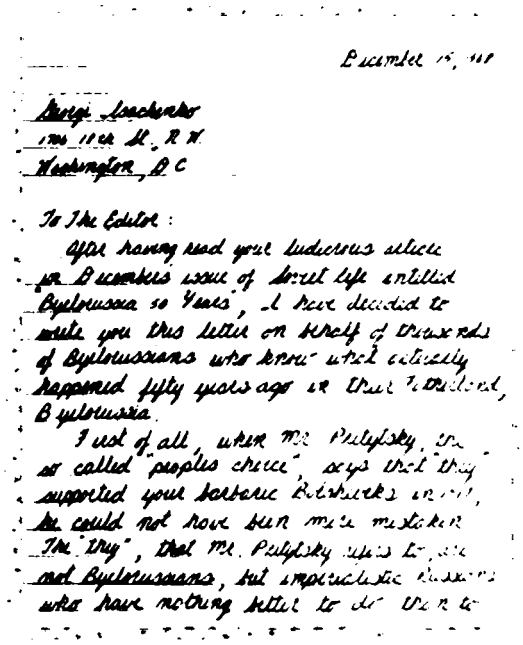
When the October Socialist Revolution triumphed in Russia in 1917, the Byelorussian people also took power, and in January 1919 set up a state of their own, the Byelorussian Soviet Socialist Republic. The republic was possible only because the Red Army and the partisans had driven out the German Kaiser's troops, which had occupied Byelorussia since the 1917 Revolution.

The common struggle against foreign intervention and the need to rebuild the economy brought the Russian Federation, the Byelorussian SSR and the Ukrainian SSR together. The situation made it imperative that they unite their efforts to fight off the White Guard armies and the interventionists. And the devastation of the First World War and the Civil War which followed it was so extensive and general that the economy could not be rehabilitated unless efforts were pooled. Late in January 1919 the Soviet government of the Ukraine called for unity with Russia in a socialist federation. In February, the Byelorussian Congress of Soviets moved to join Soviet Russia in a federation.

A decree of the All-Russia Central Executive Committee on June 1, 1919, formally announced a military and economic alliance of the republics. Military command, military organizations and major economic agencies were merged. This initial alliance paved the way for the political unification of the republics into a single state in December 1922, when the Civil War had ended and the foreign interventionist armies had been driven out of the country. The USSR at first consisted of the Russian Federation, Byelorussia, the Ukraine and the Transcaucasian Federation.

How can one talk of Russia's "occupying" Byelorussia (as the writer of the letter does) in the light of all this?

Another point the anonymous letter writer makes deserves comment. He claims that Smolensk Region was taken away from Byelorussia. Here is what history has to say on that score. In February 1918 the Kaiser's Germany seized Byelorussia's territory as far as the Dnieper. Only the eastern districts of Mogilev and Vitebsk guberniyas remained unoccupied. They were joined to the Smolensk guberniya to form the Western Region. When the occupied territories were liberated and Byelorussia joined the USSR, the Mogilev and Vitebsk guberniyas again became part of the republic in 1924. It should be noted that the Byelorussian SSR expanded territorially—at the wish of the people of adjoining areas who spoke the same language, had the same customs and followed the same economic way of life. In addition to its 15 original districts the Byelorussian SSR included individual volosts (a district comprising several villages) of the Smolensk guberniya. Perhaps the author of



December 15, 1967

Sergei Sokolenko
1705 11th St. N.W.
Washington, D.C.

To The Editor:

After having read your ludicrous article in December issue of Soviet Life entitled Byelorussia 50 Years, I have decided to write you this letter on behalf of thousands of Byelorussians who know what actually happened fifty years ago in that Motherland, Byelorussia.

First of all, when Mr. Pulyansky, the so called "peoples choice", says that they supported your barbaric Bolsheviks in 1917, he could not have been more mistaken. The "they", that Mr. Pulyansky uses to [illegible] and Byelorussians, but unscrupulous [illegible] who have nothing better to do [illegible]

the letter was not aware of these facts and erroneously thought that Smolensk was part of Byelorussia.

Time has justified this voluntary union of nations in a single state. During the period of economic reconstruction and development Russia rendered Byelorussia every possible assistance. As early as 1920 the Supreme Economic Council of the Russian Federation granted the Byelorussian Republic one billion rubles of credit. Further, the council ordered all its agencies to give the republic priority when supplying necessary materials. By 1926 Byelorussia's gross industrial output surpassed the 1913 level by 28.5 per cent.

During the first two five-year plan periods the republic built more than 1,700 industrial plants and power stations. A once backward, raw material-supplying appendage of czarist Russia, Byelorussia became an industrial producer.

Only with the assistance of the other union republics, the Russian Federation included, was Byelorussia able to liberate its territory from the Nazis in the Second World War. Only with their aid could it do its postwar reconstruction; the republic was allocated 1.7 billion rubles from the national budget for the purpose.

In its half-century as a Soviet republic Byelorussia multiplied its prerevolutionary industrial output 72 times. Byelorussian industry now produces as much in a week as it did in a year before the Revolution. It exports to 77 countries.

Many more such facts and figures could be cited to show how life in Byelorussia has changed for the better. This explains why the Byelorussian people have not exercised their right to secede from the Union.

Now for the other points raised by the letter regarding schools, theaters and language.

As in all the republics of the Soviet Union, teaching is usually done in the native tongue. But together with schools whose language of instruction is Byelorussian, the republic also has Russian schools. And that is as it should be, since there are people of other nationalities living in the republic. Speaking of the several nationalities in Byelorussia, there are five with populations of at least 10,000—Russians, Ukrainians, Poles and Jews besides Byelorussians. And since the over-all language of the Soviet Union is Russian (there are more than 114 million Russians in the country), one would expect to find Russian schools in the republic, though fewer than Byelorussian.

Judicial proceedings in the courts of all the union and autonomous republics and autonomous regions are conducted in the native language. For those unfamiliar with the native language there are interpreters. This is provided for by Article 110 of the Constitution of the USSR.

As to the language used in theaters and in literature, the republic has its own national theaters and movie houses, where performances are staged and films shown in the Byelorussian language. Byelorussia, by the way, has 11 professional theaters, two philharmonic orchestras, an academic choir, a folk chorus and a dance ensemble. Before the Revolution Byelorussia had only four theaters all told. Like many of the other republics, Byelorussia also has Russian theaters. The works of Byelorussian poets and writers are translated into Russian and the other languages of the Soviet Union, and the works of Russian and other writers are translated into Byelorussian. Thus the cultural values of one nation become accessible to all the others, with each nationality contributing.

All of this makes it hard to understand how the writer of the letter reached his conclusion that Byelorussia was being Russified. We might indicate that it was the czarist government that followed an active policy of Russifying other nationalities. That was why there were so few schools in Byelorussia before the Revolution, and why the teaching, for the most part, was in Russian. In 1914-15 there were only 266,000 children in Byelorussia's schools; today there are more than one and a half million. For school attendance per 10,000 of population Byelorussia leads England, France and West Germany. The republic presently employs 458,000 specialists and experts with a higher or secondary education.

The following figures point up the republic's cultural level: Byelorussia publishes 10 republican, 6 regional and 117 district newspapers and 51 magazines. *The overwhelming majority are in the Byelorussian language,* with an average circulation of 1,170 newspapers and magazines per 1,000 population.

Even this information should be sufficient to demonstrate that the Byelorussians are hardly subjugated by the Russians, and why the Byelorussian people do not want to separate from the Soviet Union.

The writer of the letter says that Soviet troops have been occupying Byelorussia for 50 years. This statement does not indicate very much knowledge of the history and governmental structure of the Soviet Union.

We pointed out earlier that the need to defend the revolutionary gains against the imperialist powers' armed intervention was the stimulus for unification of the republics into a federation. That was why the Red Army and its command were unified. After the formation of the Union of Soviet Socialist Republics, questions of war and peace were, according to the Constitution, decided by the central government. This was reasonable enough, since the country's defense was the common cause.

The rights of the republics eventually expanded as Soviet statehood developed. In 1944, for instance, they were given the right to national military forces of their own.

The Soviet Army, since it is the Army of the entire country, includes Ukrainians, Byelorussians, Uzbeks, Russians, representatives of all the nationalities in the Soviet Union. And if a certain unit was quartered in Byelorussia, one could say, with the same logic, that the republic was being occupied by any of the nationalities represented in the unit.

REFORM AND PROFIT

By Leonid Pekarsky

Economist, Research Institute
USSR State Planning Committee

THE ECONOMIC REFORM we have been introducing for the past three years has enhanced the role of profit. Some Western commentators see this as the "end of planning"; they see "Russia slipping back into capitalism." Their erroneous conclusions are obviously refuted by practice.

By the end of 1968 we had 26,300 industrial enterprises operating by the new system. They account for 72 per cent of the country's entire output. New economic methods—more flexible planning, more independence for individual plants, greater material incentives for workers—have increased production efficiency.

The 1968 quotas have been met. The national income increased by 7.2 per cent as against 6.8 per cent outlined by the plan. Industrial output was up 8.2 per cent.

In the last three years the enterprises operating by the new methods yielded over two billion rubles' additional profit. In 1969 it is planned to increase profit in industry by 14 per cent. Throughout the economy profit will come to 74.7 billion rubles, an increase of 13.7 per cent over the 1968 figure.

There can be no progress without expanded production. But a stable annual rate of output growth requires an increase in accumulations, which go to finance production expansion, build new enterprises and equip the existing ones with modern machines. This is where we spend the profit. It is used in the interests of the entire Soviet people. For the factories operating by the new system, profit is one of the major indices of efficiency and the source of material incentives for their staffs. From their profit, enterprises finance expansion and streamline production.

Some people seem to think that profit is a completely new element in Soviet economic practice. To think so is to misread our economic history. Profit in our country has been used from the first days of socialist construction as a lever of economic management. Its recently enlarged role stems from the growing scale of socialist production. In the thirties under the first five-year plans, the Soviet state centralized control of the country's economic growth. This was justified and necessary because it made possible the concentration of resources on key directions of development. However, as social production expanded, its internal relations grew more complicated and new branches of the economy sprang up. Centralized control of all economic activity became increasingly difficult, and there was a need for greater economic autonomy. The planning bodies are now relieved of the task of setting targets in minute detail, and they concentrate their effort on the larger problems, scientifically determining the over-all proportions of economic development.

Enlarging the role of lower economic units means enlarging the role of commodity-money relations, the economic links between enterprises. Soviet enterprises are economically accountable for the results of their work and for the resources allocated to them by the state. Hence, they must exchange their products on an equivalent, commodity-money basis, which involves finance, prices, credit and profit. Thus profit, like other value categories, is an objective, inherent feature of socialist economy.

But how does profit in a socialist economy differ from profit under free enterprise? Socialist profit is made under conditions of social ownership of the means of production. The profit goes to all the people and not to individuals.

From profit are derived the material incentives which give workers a larger interest in efficient production. In 1969 deductions for economic incentive funds will be 6.8 billion rubles, an increase of 29.3 per cent over 1968. But socialist profit cannot become private capital. Although workers are now receiving greater bonuses from the profit, none of them has bought or intends to buy machine tools and equipment to go into business for himself. Socialism does not and cannot breed capitalists.

Socialist profit is not opposed to planning, but, on the contrary, it serves as a planning instrument. For the mechanism of economic stimulation is aimed to encourage factories to fulfill planned targets.

Profit under socialism is not an end in itself. Its investment in production is determined by national interest. In 1969, for instance, huge financial resources are being invested in the advanced branches of heavy industry, in consumer goods production and in agriculture.

Under socialism profit is used for the general welfare. The accelerated growth of Soviet industry under the new conditions of management increases the net profit of the enterprises. This, in turn, makes it possible to gradually expand the share of the consumption fund in the national income, to step up consumer goods production, to improve living conditions. Thus, in the first three years alone (1966-1968) of the current five-year plan consumer goods production increased by 28 per cent, much more than the targeted growth. The number of housing starts is rising. Funds for wages, pensions, etc. are larger.

At no time in the history of our country has the increase in material wealth used to raise the standard of living compared with that of the present five-year period. A large factor in that increase is the economic reform and the augmented role of profit.

OUR THANKS

to the several thousand reader who returned our June questionnaire, telling us what they like about SOVIET LIFE Magazine where they suggest it could be improved, and how well they feel it succeeds in bettering Soviet-American understanding. The readers' replies were a pleasant reminder that our magazine fills a need. And we have gleaned a number of ideas on editorial content and illustrations, which will be put to use in upcoming issues.

Editors

WHO WON?

By Vyacheslav Kostikov

AN ACCIDENT on a construction site started this controversy which seesawed its way into court.

The Beginning

Vasili Grechev, a concrete worker, stumbled over a piece of fitting sticking up out of the ground and broke a leg. The accident happened when he had already finished work and was going home. He was laid up in the hospital for six weeks. When he went back to work, he found that he had been shortchanged on his compensation payments.

Instead of the 100 per cent pay workers are allowed in cases of occupational accidents (the law says that an injury sustained on the way to or from work is an occupational accident), he was paid only 60 per cent.

The angry worker went to the local trade union committee. His complaint was discussed by the Grievance Committee, on which management and trade union have equal representation.

The law was clear, and the management representative on the committee agreed that Grechev was entitled to full pay. The committee ruled to that effect. That should have been the end of the story. And it would have been except that the worker insisted upon knowing who was responsible for the whole business. The chairman of the trade union local, Alexei Kovalyov, looked into the matter. His investigation led him to the office of Georgi Tsoi, director of the project.

Nobody knew what they discussed, but that the talk was not amiable was evident. The director and the trade union chairman stopped saying Hello to each other. And some time later it turned out that there had been a sharp difference of opinion.

A big construction project is to a certain degree a self-contained entity with its own powers. Sometimes it has more authority than the local government bodies. Georgi Tsoi, director of the project, and Alexei Kovalyov, chairman of the trade union local, had such authority on the construction site of the Andizhan hydropower project in Armenia.

In the Courts

A court hearing held some two months later shed light on what had happened in the director's office.

The district People's Court considered the case of a senior technician who had been dismissed from his job at the project. The reason given was "reduction of staff." The dismissal order was signed by Georgi Tsoi; the plaintiff was Alexei Kovalyov, the trade union leader. I should note here that the court ordered the technician reinstated, even though management made out a case of sorts. The director had been told to cut the administrative apparatus since the wage fund had been exceeded. Tsoi used the opportunity to get rid of Kovalyov, a thorn in his side. Not that Kovalyov would have remained unemployed. If a person is dismissed because of staff reduction, management must find him another job at the same wages.

But Georgi Tsoi made a double mistake. Firstly, to dismiss a man he has to get the agreement of the local trade union committee. And secondly, since Alexei Kovalyov, besides being a senior technician, was a trade union functionary, his dismissal had to be approved by the district or regional trade union committee. Tsoi knew that he would not get that approval. So he went ahead without it.

In court Alexei Kovalyov explained the reason for their quarrel.

Prestige or Conscience?

During that talk in his office Tsoi insisted that Kovalyov stop "interfering in management affairs."

"I'm being guided by common sense, not by emotion," the director declared.

His common sense told him that the occupational accident sustained by concrete worker Grechev was a nonoccupational injury. And so, at his direct instructions, Grechev got only 60 per cent of his pay as compensation.

What prompted the director to do that? He had his reasons. The construction project he heads, like most Soviet organizations, is in competition with other projects. Those in the lead are awarded large money grants by their respective ministries to be distributed as premiums to all the members of their staffs.

The results of the competition depend not only on production indices but on working conditions, safety engineering, frequency of accidents and other such factors.

Now, this project could have taken a leading place in the competition, except that its safety engineering was not up to standard.

According to law, all injuries sustained in accidents on the job must be registered. An official report is drawn up, and a copy is sent to the higher trade union body.

Several reports of the kind had already been turned in, and another one would have put the project out of the race. So the manager decided to conceal the accident. The prestige of his project was more important to him than the welfare of the worker.

The chairman of the trade union local was of another opinion. He refused to compromise with his conscience and said so to the director.

"Prestige?" he said. "What if someone upstairs does think well of us? Our workers will know that we are breaking the law. What kind of prestige is that?"

"And how about the bonuses the rest of the men will be losing?" answered the director. "Why should they suffer because Grechev was careless? That is where all your truth-finding leads to."

"I don't think Grechev was careless," Kovalyov said angrily. "The carelessness was ours. I want the accident investigated."

An investigation of the reasons for Vasili Grechev's mishap made by the trade union committee showed that the safety engineering was not nearly as good as the director tried to make out. The work area was poorly lighted, many places were not fenced off, and other precautionary measures were neglected.

The trade union chairman demanded that Tsoi clear up the situation. The director promised to, but there the matter remained until Kovalyov sent a complaint to the regional trade union comittee. A commission came out and reports were drawn up. The director was warned that if the accident hazards were not eliminated, the regional trade union committee would see that he was replaced.

All of this, naturally, was not conducive to good relations between the director and the trade union leader. So Tsoi decided to go to extremes, to fire Kovalyov. However, as we already said, the court ordered his reinstatement.

Epilogue

How did the matter end? Who won? In this combat there was no victor. Georgi Tsoi still heads the project, and, incidentally, is very highly thought of in the ministry since he is a good organizer and business manager. At the next election to the trade union local Alexei Kovalyov was again elected chairman—the workers like this man of principle. The truth won. The project did not take a leading place in the competition, and some workers blamed the trade union local for the loss of their premiums, saying that it was all because of Kovalyov's obstinancy. But, on the other hand, every man on the project knows that if he should have trouble, neither premiums nor prestige will stand in the way of his rights.

CHOOSING A CAREER

About the Graduates of One Moscow Secondary School

By Felix Platte

FINAL EXAMS, graduation party, high school diploma and the big question: What do I want to do? Some have already made the important decision, others are uncertain or just don't know, but the majority have made up their minds to get more education.

Evidence is the fact that 24,659 of the 40,466 Moscow high school graduates of 1968 went on to institutes and vocational-technical schools: 15,719 are full-time students and 3,745 are combining work with study at college-level institutions.

Final exams ended in June, and in the early part of November 1968, the Moscow City Department of Public Education announced that practically all the graduates were either continuing their education or had been placed in jobs.

Moscow Secondary School No. 123 last year had 24 graduates. Thirteen are currently full-time students in college-level institutions, one is an evening session student, three are taking vocational courses and seven are working. These boys and girls chose a wide range of vocations, but in the spirit of our times the large majority chose the technical areas: power engineering; electronic machine building; food, textile, and chemical machine building; chemical technology and civil engineering.

Not all who applied for admission to institutes passed the stiff competitive examinations. Those who did not took jobs and are preparing for another try this fall.

Tanya Zubrilina, 17, has always wanted to become an actress. She had parts in plays put on by the school's drama group. She likes to recite and has a fair knowledge of contemporary poetry. But she was competing with the thousands of young people from all parts of the country who apply for admission to the Lunacharsky Institute of Dramatic Art every year. All applicants have to undergo three rounds of preliminary screening at which the faculty, some of them distinguished actors, select the most promising for further examinations. Tanya was one of the unlucky ones. She took a job as secretary-typist at a construction agency but still has dreams of the stage.

Galya Mareyeva and Tonya Katrikova decided to learn hairdressing. They go to a hairdressers school and do their practicing home on their parents. The mamas think their daughters are doing fine. The papas have resigned themselves to practice haircuts, but they still balk a little at the shaves. As of this year the school began training its students to cut both ladies' and men's hair, to manicure and to do makeup. Galya will eventually specialize in ladies' hairdos; Tonya will be a men's barber.

Yura Chistov, 17, and Andrei Kuznetsov, 18, took a liking to chemistry when they were in the seventh grade. Andrei was a member of the Chemists Club at the Young Pioneer Palace and competed in the chemistry contest sponsored by Moscow University. He is now at the Mendeleyev Institute of Chemical Technology. Andrei studies evenings and in the daytime works at this same institute. He is a senior lab assistant in the general inorganic chemistry department and helps the full-time students with their lab work.

His friend Yura Chistov is a full-time student at the Institute of Chemical Machine Building.

Twice a week Yura goes to one of Moscow's chemical plants for practical training.

Marina Kleshcheva is a pyrometrist, a job that needs some explaining. She supervises the operation of the hardening furnaces in the tool shop at one of the largest enterprises in the capital—the Vladimir Ilyich Electromechanical Plant. A hot job. The temperature in the hardening furnaces goes up to 1,300 degrees Centigrade, but Marina is not the complaining type.

"I tried to get into the Institute of Physical Culture," Marina explains, "but my entrance exam marks were not high enough. Mother works at the plant; that's one of the reasons I'm here."

Marina is the discus throwing champion of the plant and a first-rate athlete. The young man she works with, Sergei Skripkin, graduated from the plant's evening school for working youth and is planning to go on to college. He began his working career as a toolmaker in this same shop. Now he has a very good job and has persuaded his mother, who is not well, to go on pension. Attached to the plant are a secondary night school, a vocational-technical school and an evening institute, a branch of the USSR Extramural Polytechnic Institute. Sergei and Marina are applying for admission to this institute.

Yesterday these recent graduates were children. Now they are growing into adulthood. Some of them know what they want to do. Some of them do not. But they all know that they want to make their lives meaningful to themselves and the community they live in.

NIKOLAI OSOKIN, WORKER

Photographs by Yan Tikhonov

Electric motors for the atomic icebreaker *Lenin*, big-capacity generators for Siberian power stations, power units shipped to thousands of factories in more than 40 countries—all this equipment carries the trademark of Elektrosila. Plants like Elektrosila train Leningrad's industrial workers.

The third Soviet generation is working at Elektrosila now. The grandfathers of today's young workers made the October 1917 Revolution. In 1941 their fathers left their shops for the battlefronts to defend the northern metropolis against the nazi invaders, and returned afterward to get the wheels of peacetime production moving again.

Nikolai Osokin and his twin brother Sergei, carpenter's sons, came to Elektrosila five years ago. The 16-year-old lads enrolled in the factory's vocational school and simultaneously attended a general night school. Two years later, Nikolai and Sergei received two graduation certificates each: They became toolmakers with a high school education.

There was a family celebration when the twins brought home their first pay envelopes. Their father, not a talkative man usually, thought the occasion warranted a series of toasts with *nalivka*. He dug the home-brewed liqueur out of hiding. Their mother was happy and sad: happy that her boys were on their own now and sad because the years were flying past so swiftly.

And they did indeed pass swiftly. Before the parents had time to look around, Sergei went for his





The generator, which carries the Elektrosila trademark, may be headed for one of Siberia's new power stations or be on the way to a customer abroad; the Leningrad plant does a big export trade. But while it is in the shop, Nikolai Osokin and his friend Vladimir Agapov climb inside for a look around.

Nikolai works the morning shift. Here he is (with the bag) leaving the plant with his shopmates. He is headed for the Institute of Mechanics where he has classes four nights a week. Job and study more than take care of his time, weekends included. He is the first student the Osokins have produced.



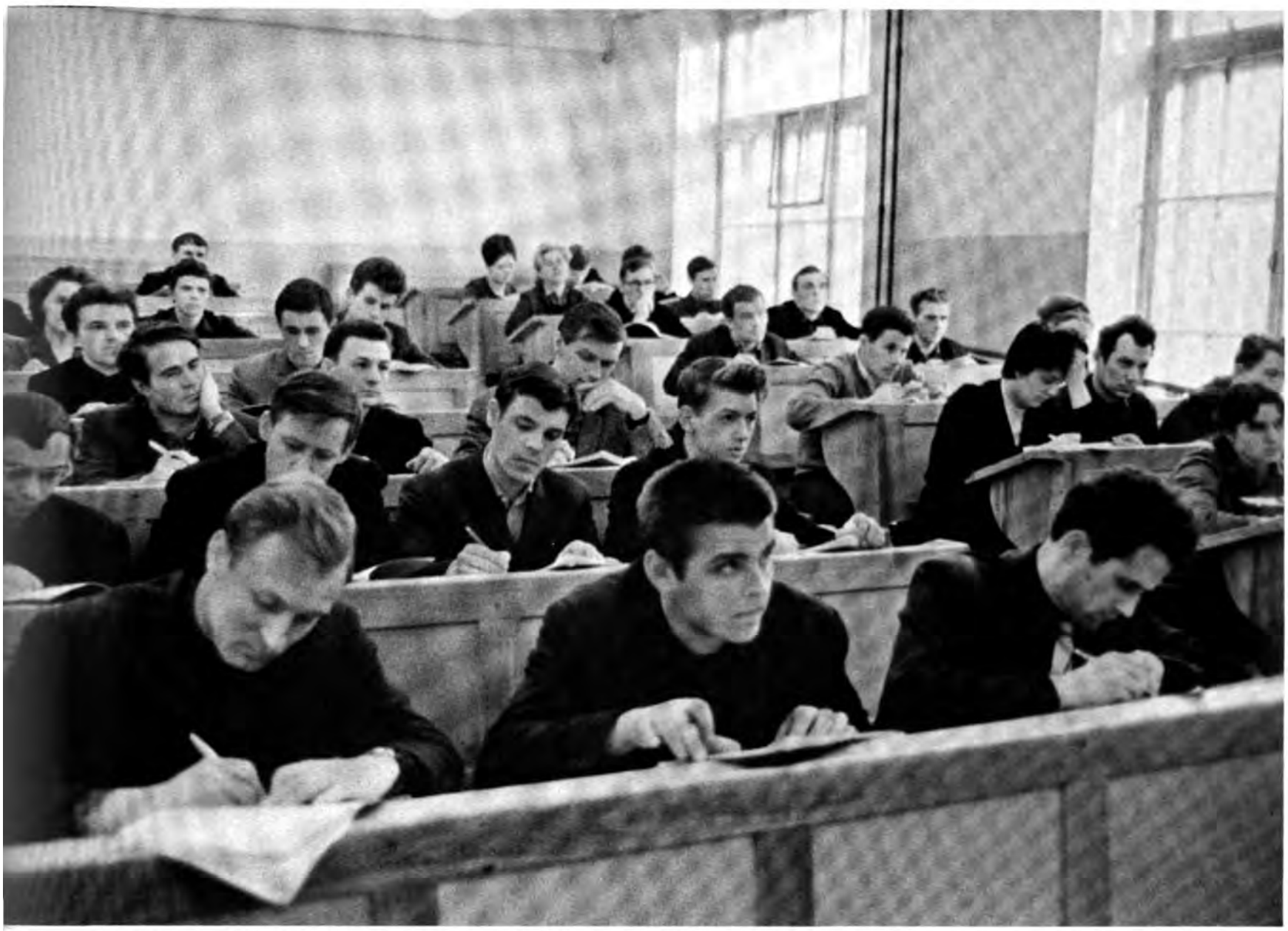


tour of army service and is due back soon. Nikolai has a student deferment: He passed his exams for the correspondence engineering department of the Leningrad Institute of Mechanics. The first student the Osokins have produced, he receives from the rest of the family the respect due that distinction.

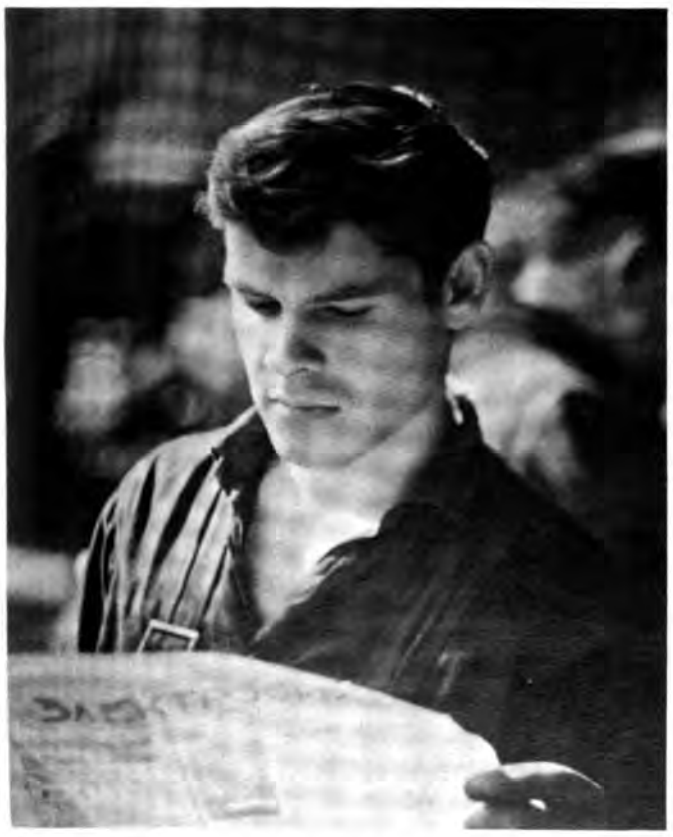
Working and studying at the same time isn't easy. Nikolai rushes from the factory to the institute four times a week. And textbooks and drafting problems keep him busy weekends. He works only the morning shift, and gets a two-week paid holiday twice a year—besides his regular vacation—to prepare for exams.

The shop where he works makes press molds for plastic parts. Team leader Timofei Lebedev, who has been on the Elektrosila staff for many years and has seen them come and go, is pleased with Nikolai. "The boy's a real worker," he says.

Nikolai will be graduating as an engineer in a few years and will most likely stay on at Elektrosila where he started. Asked whether he was sorry to take so much longer becoming an engineer (he could have done it faster and more easily by going straight from high school to the regular course at the institute), Nikolai explains that, first of all, an engineer without practical experience is only half an engineer, and, secondly, no Osokin stays a dependent past the age of 20.



He gets two weeks off with pay twice a year, besides his regular summer vacation, to prepare for and take his examinations. He will be graduating as an engineer in a couple of years and expects to stay on at the plant where he started as an apprentice.



He uses his lunch break for luxury reading, to see what's been happening in the nonengineering world. This time he is leafing through the factory newspaper for local news, maybe a mention of himself.



Like the typical Leningrader he is, Nikolai Osokin is convinced that his city is the most beautiful in the world.



Team leader Timofei Lebedev has been working at the Elektrosila plant for 37 years, but he often turns for an opinion to budding engineer Nikolai.



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VOCATIONAL SCHOOLS

It would be hard to find a factory or business office in the Soviet Union without graduates of vocational schools on its staff. Vocational school graduates now work at blast furnaces and with machine tools; they extract oil and ore, run combine harvesters, build houses, make garments and print books. Over 5,000 such schools train workers for more than 1,100 trades. Alexander Bulgakov, Chairman of the USSR Council of Ministers' Committee for Vocational Training, describes the training system.

VOCATIONAL TRAINING has been a primary concern of the Soviet state since its inception. The pace of industrial growth, the scale of the effort to develop the eastern regions of the country and to modernize production required a comprehensive plan to train skilled workers. With this in mind we created the State Labor Reserves in October 1940.

Teams comprised of students of vocational schools and schools attached to industrial enterprises did yeoman service in the construction of many power stations in the Urals and of the Magnitogorsk iron and steel mill. In the 10 years from 1941 to 1951 the State Labor Reserves trained over six million skilled workers. In the 27 years of their existence they graduated about 16 million young people.

Current industrial and farm development demands a large addition of skilled workers. Suffice it to say that by the end of the present five-year plan period (1966-1970) the number of white and blue collar workers in the Soviet Union will have increased by 14 to 15 million. By 1970 1.7 to 1.8 million youngsters will be accommodated at vocational schools. During the plan period new vocational schools will be opened for about 800,000. The new schools will be built primarily in those regions which most require manpower, the eastern regions of the country, for example, where large industrial complexes are being created guaranteeing full employment of the population.

Technical progress makes high demands on a worker's skill. It has been calculated, for instance, that two-thirds of the new industrial workers learn their basic professional skills at vocational schools. These schools have undergone many changes, and so has the character of their students. Formerly, teenagers with four and six years of education constituted the main body of new enrollments; nowadays, applicants have eight years of previous schooling, as a rule. Even an eight-year background, however, is often not enough. It is no accident that one out of four students at urban vocational schools while training for a trade is simultaneously studying at an evening school of general secondary education. Needless to say, they find it very difficult.

Vocational schools offer one-and two-year courses, not enough time, we have discovered, for many of the complex skills. We have come to the conclusion that vocational schools should offer three and four years of training, combining a general secondary education with vocational training. At present we have 124 vocational schools with a three- to four-year course of study that combine the two. Forty-seven of our four-year vocational schools are training highly skilled workers for the coal industry in addition to giving them a complete secondary education. Our three-year vocational schools will also be graduating metalworkers with a complete secondary education. Besides this, there are 54 vocational schools with the combined curriculum of a secondary school and a professional training school in various specialties. Students are taught the technology of a given production, technical mechanics and electrotechnology, together with the social sciences, political economy, esthetics and, depending on their specialization, mathematics, physics and chemistry.

A three-to-four-year course of training at a vocational school is not the only way of giving enrollees a complete secondary education. Many of our vocational schools include in their courses of study the equivalent of a full year's work in an evening school of general education. Later on, branches of evening schools of general secondary education attached to our standard vocational schools will give students the equivalent of a second year, thus completing their 10-year general curriculum.

To increase the level of general education is one of the major aims of our vocational schools.

The progress of industry and the construction of new plants with the latest equipment make it necessary for future workers to know disciplines which, a few years ago, were taught only in higher technical schools. New trades are emerging and some of the traditional trades are becoming obsolete.

The vocational schools for railroad workers trained 36,619 assistant steam-engine drivers in 1946-1950 and 4,796 in 1965. This trade is now obsolete, and in 1967 our vocational schools trained about 4,000 assistant drivers of diesel and electric railway engines.

The Committee for Vocational Training works very closely with economic planning bodies and, well in advance, considers changes in the demand for trades. As a result of the many steps taken to improve consumer services, new specialized schools were opened up. The increased output of natural Siberian diamonds and the production of artificial diamonds prompted a decision last year to open three new vocational schools, in Moscow, Smolensk and Kiev, to train workers for diamond processing factories currently under construction.

There is no need to underscore the advantages of teaching young workers their vocational skills at schools. When trained at a plant, the apprentice masters two or three operations in a comparatively short time. His over-all practical training, however, is limited and his knowledge of theory far from sufficient. Such a worker has to be trained anew as soon as any changes are made in the technique and technology of production.

The young graduates of regular vocational schools, on the other hand, surpass those who were trained on the job as soon as they become acquainted with the factory's production processes. The graduates of regular vocational schools move up the job ladder faster too.

It is also interesting to note that the students of regular vocational schools, as a rule, show a greater inclination for technical invention. Our young craftsmen are the authors of nearly 10,000 innovations and inventions that have been applied in production. The economic value of their creative efforts was estimated at 870,000 rubles in 1967 alone.

Youngsters are accepted at vocational schools without entrance examinations. Priority is given to those who have the best marks from the school they attended. In some cases, when the future trade requires a particularly good knowledge of certain disciplines, the teachers at the vocational school will talk to the applicant or even test his background. Thus, for certain vocations connected with art, applicants are examined in drawing. Youngsters who want to work as typesetters at print shops and publishing houses must pass an examination in either Russian or their native language. Priority is also given to children brought up in orphan asylums, to children of invalids, to young people directed to the school by factories, construction projects, collective farms, as well as to young men demobilized after serving in the army or navy. In selecting students for four-year mining and three-year metallurgical vocational schools, preference is given to children of miners and metalworkers.

Education and training at vocational schools are free. All students receive free meals and uniforms, and in technical schools, stipends. They are paid for the work they do as apprentices. Our vocational school students work four to six months a year as apprentices at factories, construction sites, collective and state farms.

Applicants for special secondary schools or college-level institutions are required to have held a full-time job for a specified period. That requirement is waived for young men and women graduating from vocational schools with marks of excellent—an added inducement. Those who graduate from technical vocational schools with excellent marks also get certain privileges on applying for entrance to evening or correspondence divisions of schools of higher education. We know that graduates of vocational schools generally do well in higher technical schools.

The vocational schools are becoming an increasingly vital part of our educational system.



RABBI'S JUBILEE
75
HAPPY RETURNS

By Solomon Rabinovich

Photographs by Leonid Leonov

Top: Rabbi Yehuda Leib Levin of Moscow's Central Synagogue is congratulated by his congregation and guests from other parts of the country and abroad on his seventy-fifth birthday.

Bottom: American Rabbi David Olender (center) offers a toast. Delegations from the Orthodox and Baptist churches and rabbis from the United States and Hungary arrived for the occasion.

Right: David Steinberg, cantor of the Central Synagogue, led the evening service, accompanied by the choir, and offered the prayer for the good health and long life of the Chief Rabbi.

Far right: Rabbi Arthur Schneer of New York spoke of the Chief Rabbi's service to world Jewry. Rabbi Levin closed the birthday festivities with a moving expression of gratitude.







MOSCOW'S Jewish religious community recently celebrated the seventy-fifth birthday of Chief Rabbi Yehuda Leib Levin.

The Central Synagogue was full to capacity. Among the guests were representatives of Jewish synagogues in other cities, delegations from the Orthodox Church and the Baptists, and rabbis who had come especially for the occasion from Hungary and the United States. Rabbi Levin was greeted with a long ovation. With him were his wife, his daughters with their husbands and 13 of his 14 grandchildren, the fourteenth born on the eve of the jubilee.

Cantor David Steinberg led evening service accompanied by the synagogue choir. Then birthday messages were read from other religious communities and from American Rabbis Arthur Schneer and David Olender.

Rabbi Levin closed the celebration with this statement:

"My first word of gratitude is to our Lord for allowing me to live to the present day and for granting me the great honor of being feted by my congregation. My second word of gratitude is to our country, which has given so much to my people in peacetime and during the Second World War. When the enemy seized city after city, the country mustered the means and facilities to evacuate deep into the rear hundreds of thousands of Jews who otherwise would have inevitably perished. My family and I were evacuated from Dnepropetrovsk two days before the Germans came. This noble act will always remain in the memory of our people. My third word of gratitude is to our congregation and our foreign guests, for their warm words and cordial good wishes."

Continued from page 41

ciple in relations with all countries. Consistent with this principle, it rejected the inequitable treaties concluded by the czarist government, surrendered the privileges they granted and substituted friendly and equitable relations.

Thus, the treaty concluded by the Russian Federation with Persia in Moscow on February 26, 1921, recognized "the right of each people to decide its political destiny freely and without hindrance" (Article 4). And in signing their treaty in Moscow on March 16, 1921, the Russian Federation and Turkey declared that they shared the "principles of fraternity of nations and the right of peoples to self-determination." In Ankara a representative of the Ukraine and a representative of Turkey on January 21, 1922, signed a treaty which said that the two states agreed on the "right of peoples freely to decide their destinies."

The principle of self-determination has been confirmed not only in the treaties of the Soviet state, but also in treaties concluded between the countries of the Orient. The Treaty of Alliance between Afghanistan and Turkey signed in Moscow on March 1, 1921, says explicitly that both states "recognize the full freedom of all peoples of the East and their right to independence and the freedom of each to choose independently any form of government" (Article 2).

In its treaties with the countries of the Orient the Soviet state not only recognized self-determination as a principle but took upon itself the concrete obligation to realize the principle in practice. It recognized the independence of a number of countries of the East whose peoples had been savagely oppressed (Persia and Afghanistan, for instance). The Soviet state gave up the rights and privileges forced by the czarist government from Persia, Turkey and other Eastern countries.

The Atlantic Charter was the first international legal document that recognized on a world scale the right of peoples to self-determination. In fact, however, Paragraph 3 of this charter covered only the victims of nazi aggression, that is, the peoples of Europe again. Which is why the Soviet Government took another step to give the anticolonial principle of self-determination international currency. At an allied conference in London on September 24, 1941, it issued a special declaration to make the self-determination of nations and peoples a cardinal principle for the postwar world. In keeping with the situation that had developed, the Soviet state offered a new interpretation of the principle: "the right of each people to state independence and the territorial inviolability of their country, the right to establish a state system and to choose a form of government which they consider expedient and necessary to ensure the economic and cultural well-being of their country."

After the Second World War the principle of self-determination was included in the United Nations Charter (Articles 1, 55 and 76) on the initiative of the Soviet Union. Paragraph 2, Article 1 declares that one of the three cardinal aims of the United Nations is to promote friendly relations between the nations on the basis of respect for the principle of equality and self-determination of peoples. The inclusion of self-determination in the charter marked the final approval of this principle in international law.

Misinterpretation of the charter provisions compelled the Soviet Union to raise the question of a clear-cut definition of self-determination. In December 1960 the Soviet delegation submitted to the United Nations General Assembly a draft declaration for the consistent implementation of the principle. This draft served as a basis for the historic United Nations Declaration on the Granting of Independence to Colonial Countries and Peoples, which was unanimously adopted by the General Assembly on December 14, 1960.

In expressing the will of the peoples for peace and freedom, the declaration solemnly proclaimed the need immediately and unconditionally to end colonialism in all its forms and manifestations. It said it was impermissible to subject peoples to foreign domination, to exploit them, to use any pretext for delaying independence, to wage any hostilities or conduct reprisals against dependent peoples or to attempt to destroy national unity or the territorial integrity of peoples.

The practical importance of the declaration is the fact that it recognizes the right and obligation of third powers to assist in the implementation of the right of peoples to self-determination, it recognizes that self-determination is essential for peaceful coexistence.

CHILDREN'S CORNER

ABOUT SNAILS

By Felix Lev

Drawing by Leonid Sergeyev



Wherever the snail is, there is its house, because it always carries its house on its back. Two snails mean two houses, three a whole street.

When the snails stick out their horns, it's as if aerials rise from the roof tops —as if they're sitting at home watching TV.

Suddenly the aerials move, and the houses scatter in all four directions.

It's grand, of course, to sit home in your little house watching TV. But it's even better to walk around and see everything for yourself.

Continued from page 31

her, and kissed him. This was more than Gushchin could stand. He wept. Not with tears. His eyes remained dry. His heart wept. Natasha heard the dry, soundless weeping inside him. She pressed her palms against his temples.

"Don't, darling. There's no need. I'm so calm and happy with you, but you refuse to believe it. Now kiss me."

Gushchin took her hand and kissed it. Then Natasha kissed his hand and said with frightening simplicity:

"Get undressed and lie down. I'll be right back."

It was not happiness. It was oblivion, nothingness, sweet death. When Gushchin regained consciousness, Natasha was lying on his arm with closed eyes. He could not hear her breathing. Frightened, he put an ear to her breast. Her heart was beating strongly and evenly, but very softly.

The moon had practically climbed in through the window, making the room as light as day. From a big photograph on the wall at the foot of the couch a young man of twenty-five gazed down steadfastly at Gushchin with bright eyes. Gushchin turned over, but from the dressing table the same large, steadfast eyes stared at him. Gushchin looked at the wall back of Natasha's body, but there, too, hung snapshots of the same young man. In some he looked older than in others, and in one he was a child, a big-eyed youngster with a high forehead and soft, unformed lips. That snapshot dealt Gushchin the final blow. Of course Natasha had her affections and loves, but how hurt and wounded she must be to fill the entire room with his pictures, to condemn herself to his eternal presence. If she no longer loved him, how hard and how tiresome to encounter unloved features all the time. That meant Natasha still loved the young man with the bright, steadfast eyes. Then what had happened between him and Natasha was stealing, stealing from real love. Should he leave? But what would Natasha think? She would really be convinced he was an elderly adventurer. Leave her a note? How could he say everything in a note? Gushchin rose and, without knowing himself what he was going to do, stretched out his hand toward the big photograph hanging opposite.

"Don't touch it!" came Natasha's voice. "That's my father!"

Father? Was that little boy Natasha's father? Yet there was nothing surprising about it. Killed in the war, Natasha's father might have been even younger than his daughter was now.

"And I was torturing myself!" Gushchin said. "Forgive me, Natasha. I must have actually wanted to remove him."

Natasha stretched toward Gushchin and with a strong movement, now familiar, put her arm around his neck. In the turmoil of joy and mortal pity for Natasha and her boy father who never knew what he had left behind on Earth, Gushchin suddenly shed all that hampered him, fettered him and made him a beggar.

When they fell apart at dawn, Natasha said in a voice weak with happiness:

"I fell in love with you at once. . . . As soon as I saw you. . . . You're wonderful, you're marvelous, you're—Quarengi!"

Gushchin left for Moscow late that evening. Natasha was at the studio filming, and they did not see each other.

Now Gushchin led an even stranger life than before. Outwardly everything remained the same. He went to work in the daytime, and in the evenings sat alone, looking through books on old St. Petersburg. But he did it all without soul or meaning. He stared indifferently at beautiful photographs of beautiful buildings, but they no longer soothed him. Relentlessly, cruelly, Natasha's face kept swimming up from the yellowed pages. It appeared on sheets of drawing paper and tracing paper, swayed before him in the blue cigarette smoke of conference rooms, pursued him on the streets and in the subway. The girl was as ruthless as Colleoni; she pushed her way to him through dreams and waking reality, through street crowds and business talks. There was no escaping her.

Natasha gave him no quarter. Everything around him lost its original form; everything became a reflection of Natasha, was seen through her, sensed through her. This exhausted Gushchin. "Leave me alone," he cried. "If you are not beside me, then go away altogether!" It did not help.

Still, he did not give himself away to his wife in any way and was surprised when she said, her voice gaily threatening: "Come, confess what you have been up to."

"It's just like me—" Gushchin replied listlessly.

"You can't fool me," she said anxiously, with the shrewdness of the guilty. "You're in love."

Probably because the word sounded like an insult from the lips of his wife, Gushchin did not satisfy her curiosity.

After that he would catch her studying him suspiciously. That's all I need now—for her to be jealous of me, he thought wearily. It's evidently my fate to pass through all the circles of our family hell. But she showed no jealousy. She just kept watching him. Her faded eyes, once emerald and now bottle-green, were kindly curious rather than resentful. She seemed to be trying to find something in Gushchin to remember him as he used to be. But she failed, and that alarmed and confused her. Her importunate staring bothered Gushchin. He felt she was penetrating into his last refuge, his mind. On top of everything, she suddenly stopped going out in the evening.

The burden grew to be more than he could bear. And when Natasha installed herself in all people, animals and birds, became all the objects that surrounded him, when his every contact with living or dead matter became contact with her warm, light flesh, despair rather than feeble resolution drove him to send her a telegram: "Do they still need gray hair?" The reply, to his surprise, came almost at once: "Yes, yes, yes, urgently." The thrice-repeated "yes" told Gushchin that Natasha missed him. He was shaken by the thought that he could also be the source of someone else's pain. In all those agonizing days it had never occurred to him that Natasha might be suffering too. It seemed to him that she could regard her existence as constant happiness since it was so wonderful and joyous to be her!

Now that he had learned the truth, he grew strong.

How simple it all was once the decision had been taken. At work matters were settled quickly and all his wishes complied with, as though everyone had been expecting Gushchin to make radical changes in his life. His wife put no obstacles in his way, gratefully complying with everything he said. She merely said in a sort of absurd triumph:

"You see, I guessed at once which way the wind was blowing!" How important it is for a person to be right in some way!

Then she bustled about muddleheadedly getting him ready to leave, as if he were going off to war. Gushchin found it unpleasant to see her back bent in unexpected and unwelcome concern.

His daughter was far more straightforward about her father's departure.

"Your father is leaving us," her mother told her.

"High time," came the quiet, kindly reply.

He sold his old but still good suit to an old clothes store and bought himself lightweight trousers, a wool shirt and sandals.

"How young you still look!" his wife said.

He left home with no baggage. All he had he carried in his pockets: his papers, plane ticket, comb and razor. He was making a clean break with his old life, with people who had not wanted to be close to him, with a cold apartment that was always empty and furnished with indifferent objects, with the poor clothing he had worn on his body, even with the few books he was fond of and his eternal companion, the briefcase worn to paper thinness.

He stepped out into an early-morning street still damp from watering and was amazed at its deserted resonance, hot freshness, and calm readiness to carry him away to happiness. He felt like a runner coming down the last stretch with reserves of strength still in store. Nothing any longer separated him from victory. His well-fitting clothes had almost no feeling of weight, and this intensified his sense of lightness. Yes, his wife was right. He had preserved his youth, had not spent himself on the small temptations of life. He had been kept in cold storage and now, thawing out, proved to be fresh and hale.

Just think! In two hours or so he would be with Natasha! And her dowry would be the whole of Leningrad. He thought of Leningrad with tenderness, as though Natasha had built the city especially for him, had thrown bridges across the Neva and the Fontanka, erected the Rostral Columns, fenced off each park, and built arches where houses prevented streets from reaching squares. Painstakingly and laboriously, sweepingly and delicately, she had created this incomparable city that would now become the background for their love forever. Bless the generosity of life for giving him a beloved woman in such a setting!

At the corner he turned back to look at the house where so many of his days and nights were buried. Leaning far out of the window, his wife was following him with her eyes. In a queer, unnatural approximation, he saw her battered face with enlarged pores, the faded bottle-green eyes in wrinkled lids, the defenseless face of a woman who has grown old early and whom no one needs. There was nothing left in her of the pure-faced girl. She was gazing after him in avid, perplexed curiosity, without spite, without envy, as though he were something unattainable, and although she was looking at him from above, it seemed to be from below—the look of a horseman who has been thrown, a bird brought down by a shot. He wanted to wave to her in farewell but suddenly uttered a strange, hoarse cry and turned back.



LENINGRAD MUSIC HALL

Continued from page 1



The act "Balagan-13" parodies the revivalist atmosphere of prewar Russia. (Top) "Northern Lights" scene. (Center) the cancan, replete with black tights and pink garters.



The show has everything a bright revue should have: catchy tunes, fine dancing, pretty girls and even a good smattering of social comment. (Right) Aboard the Tovarish.





The colorful extravaganza is a valentine for Leningrad past and present. The dances and folk melodies are in the old Russian style.

The costumes and setting for the itinerant clowns scene are in the spirit of the famous Vyatka clay toys.



FOLK SONGS AND CIRCUS



Valentina Baranova and Oleg Pavlov do a roller skating duet. The whirlwind performance is executed with dazzling virtuosity.

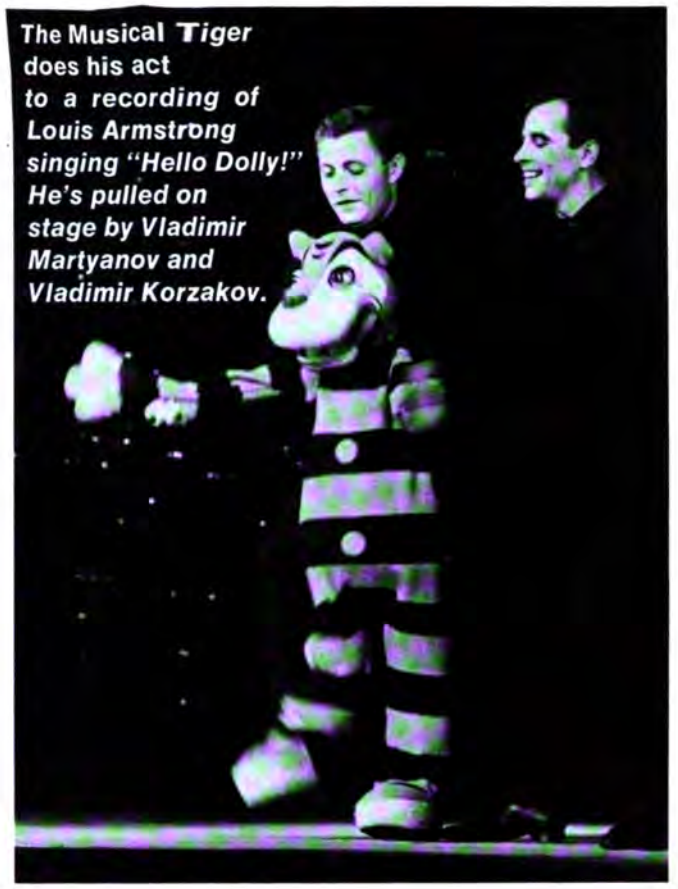


Eino Baskin—in tails, his mustache curled, waxed and pointed—is the very epitome of the Gay Nineties emcee. His patter and gestures are an affectionate take-off on a whole era.

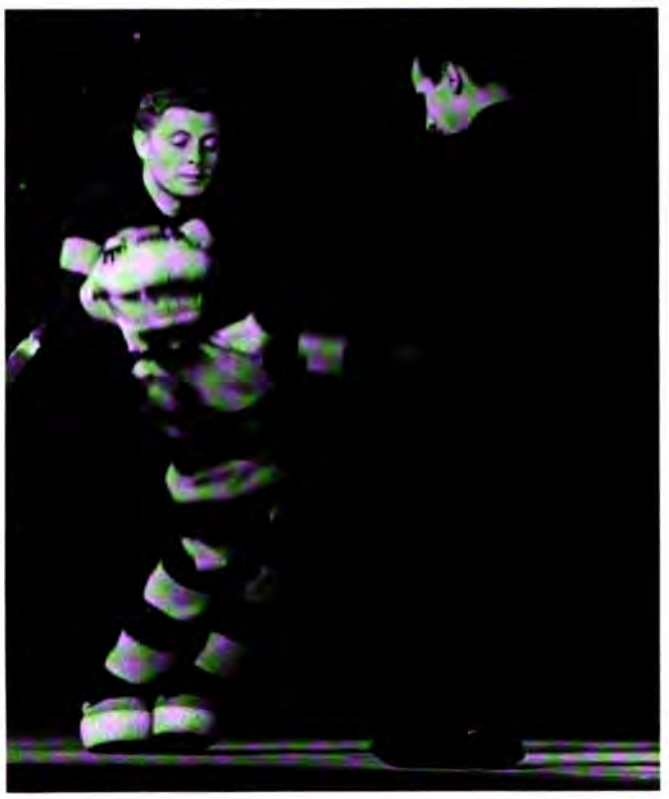


Georgi Pinezhsky gives a side-splitting parody of the traditional circus strong man, his chest muscles rippling. But the laughs stop when he does this tricky handstand.


Folk and modern dance are blended into an elegantly patterned combination in the "Lace Makers of Vologda."
LACE MAKERS OF VOLOGDA



The Musical Tiger does his act to a recording of Louis Armstrong singing "Hello Dolly!" He's pulled on stage by Vladimir Martyanov and Vladimir Korzakov.





Once on, he hams it up for all he's worth. He sings, plays a banjo, every part of his body in motion. The slightest applause and he'll do an encore.

NEXT ISSUE

Tens of thousands of college students take off for the sparsely populated areas of the country after spring examinations each year. These young volunteers go to Siberia, the virgin lands, the North—wherever they are most needed—to work on various construction projects alongside the local inhabitants. They get a fair wage for their work, but the money is not their main motivation; to be of service is. The idea originated 10 years ago when the first student detachments went to work on the virgin lands in Kazakhstan during their summer vacation and has since grown into a countrywide movement with organizational headquarters in Moscow. Four of the leaders of this student movement are interviewed to bring the reader a picture of how the national organization, the Students Building Team, started and how it operates today. There will also be excerpts from the diary of a student construction worker in this issue and a photo story on students constructing a gas pipeline in the Arctic.



The Bauman Higher Technical School in Moscow, one of the country's largest and oldest engineering institutes, trains specialists for almost all branches of industry as well as for engineering research. One of the traditions of the school, besides its high academic standards, is the sports prowess of its students and faculty. The Bauman Sports Club was the first student sports organization in the country. Today every Soviet college and university has one. They are all united in the Burevestnik Sports Society, which turns out world-class athletes for Soviet national teams. The Bauman club has 10,000 members who compete in 300 events, from mountain climbing to chess.





Teaching industrial design is the business of a large network of establishments, including several institutes. A photo story tells about one in Moscow where students can specialize in packaging, machine design, window decorating, and industrial engineering, psychology and esthetics. Besides studying fine arts, the students research and utilize intricate techniques of long forgotten folk crafts.

An excerpt from Lenin's *The Proletarian Revolution and the Renegade Kautsky*, which deals with the relationship between democracy and the dictatorship of the proletariat. Also some early photographs of Lenin.

The account of a 2,000-mile month-long trip retracing the route known as the "Great Waterway from the Varangians to the Greeks and from the Greeks." In ancient days it was used by Russian traders and the Vikings.

An amateur junior ice hockey team from the USA visits the Soviet Union and meets school and Class-A league teams in Moscow and Leningrad.

COMING SOON

Carrying out Lenin's plan for the industrialization of Russia.



Day breaks over Samarkand's
600-year-old Shah-i-Zinda.

Photograph by Nikolai Rakhmanov

SOVIET LIFE

October 1969 • 35 cents

RUSSIAN FOLK INSTRUMENTS

FOLLOWING THE ANCIENT WATERWAY

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FRANK BORMAN IN THE SOVIET UNION

See story on pages 18-23

Photographs by Dmitri Donskoi





FIRST IN RUGBY

BAUMAN
HIGHER
TECHNICAL
SCHOOL
SPORTS
CLUB

RUGBY AT MVTU

...is, an English public school student, picked ... d ... dov... e field during a soccer ... igo... ...e23. Thus was born ... ...ntries.

...nal 1923 and then ...

...ith ... ...dents Festival was ...ts included rugby ... ...a te... ...Brit... ...g Czechoslovakia. ...imov and ... ...pov... ...in the Power ... ...g Depart... ...ime... ...ner Technical ...ol (MVTU), wat... ...layers in action, studied ...rules and got together a small group of enthusiasts. The ...up grew, matches were held, and rugby fans developed. When the players graduated and left for their new jobs, rugby teams sprang up in many towns.

Today you would be hard put to find a rugby club anywhere in the country that MVTU students or graduates did not help to found. Nobody was surprised when MVTU students won the 1967 Trade Union Rugby Championship.

Sergei Selikhovkin, Anatoli Sorokin, Yevgeni Antonov and other rugby pioneers left the institute a long time ago. They all became engineers and some of them have earned master's and doctor's degrees. But they still play rugby.

The Soviet national team has had 13 matches with foreign contingents in the past four years. It won seven, including games with the champions of Poland, Czechoslovakia and Yugoslavia.



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Front Cover: American astronaut Frank Borman with his cosmonaut hosts in the Crimea. Photograph by Yuri Somov.

NOT BY CALCULUS ALONE

By Mikhail Vladimirov

THE BAUMAN HIGHER technical school in Moscow, more generally referred to by its Russian initials, MVTU, is one of the oldest and biggest institutions of its kind in the Soviet Union. Founded in 1830, it has given Russia a whole constellation of eminent scientists and engineers. Its student body was greatly increased after the 1917 Revolution. The school turns out thousands of top-flight specialists for science and industry each year.

But MVTU graduates are not only tops professionally—they are usually fine sportsmen, too. When a young man with an MVTU pin in his lapel comes to a plant or research institution, it means that sports are on the agenda.

Both gray-haired professors and freshmen go out for sports at Bauman. Its sports club has a membership of some 10,000. More than 300 competitions of various kinds are held at the school annually, crowned by a spartakiad with a 22-event program. MVTU sportsmen invariably take part in the Moscow Student Games, the national matches for the championships of the student sports society Burevestnik, the national championships and the various international tournaments.

An Athlete's Day

There are always scores of notices posted in the school corridors.

"Skindiver! The summer holidays are near. Remember? Bring your ideas or proposals to a meeting of the skindiving group at 5:00 P.M. today."

"Gymnasts! Training sessions Mondays, Wednesdays and Fridays."

"Match with Moscow Aircraft-Building Institute tomorrow. Who'll play if you don't? Volleyball group."

Announcements, announcements everywhere. They appeal, demand, request, and they show how varied and alive sports are at the school.

In one of the gymnasiums I was introduced to Natasha Petrunina, MVTU gymnastics champion. I asked what her usual day was like.

"I get up at 7 A.M., do my daily dozen, have breakfast and go to the institute. From 9 A.M. to 5 P.M. I attend lectures. The lunch break is 30 minutes. During my training days I spend two hours on the apparatus. I get back home at 8 P.M., have dinner, prepare for the next day's seminars and then take a walk before going to bed."

"And what about books, movies, theater?"

"That's for Sunday and the two days I don't train. If you're fond of something, you have to sacrifice something else. And I'm very fond of gymnastics."

Natasha is a fifth-year student. She has a Lenin scholarship, which is awarded to students for exceptional grades and community activity. Her record card shows all Excellent. She is a Master of Sports, a title awarded to top-class athletes.

"Do sports interfere with your studies?"

In Natasha's opinion they help. They bolster her will power, the determination to achieve her goal regardless of difficulties.

Six Days and Seven Seconds

The school has 33 different sports groups.

Most popular are track and field (507 members), skiing (402), volleyball (526), gymnastics (407), chess (502), boxing (321), mountain climbing (300) and touring (600). Eighty-seven group members are Masters of Sports, 45 candidate masters, 507 sportsmen of the first category rating, 4,625 of the second and third category. About 300 are beginners—potential masters and champions.

But figures make dry fare.

Here are a few activity notes.

A six-man ski team made a cross-country trip from Moscow to Helsinki, Stockholm and Oslo from February 10 to March 10, 1967. The student skiers visited dozens of towns and villages along the way and had many meetings with their Scandinavian compeers.

It was a difficult trip—they sometimes covered more than 60 miles a day—but very interesting. The fatigue they all felt before the finish was more than compensated for by the wealth of impressions they brought home.

On the athletic side the team covered the supermarathon distance of 930 miles six days faster than a 1927 team that traversed the same ground.

Another item, this one on a more cerebral sport: chess. A lightning chess tournament was held at the institute for the MVTU title. A professor and a student qualified for the finals. Their game would decide the outcome of the match. The opening was played very quickly. Midgame the opponents swapped pieces and only the Kings, Knights and a few Pawns were left on the board. Here the professor, who had excellent winning chances, overstepped his time. With only seven seconds at his disposal, student Vsevolod Makarov won the MVTU championship.

And what a reaction when, on analyzing the endgame, the players saw that in the heat of battle the winner had taken his own Knight with his King on the thirty-seventh move!

"This is really a Trojan horse you gave me," the professor said, congratulating the new champion. "I couldn't figure out where my extra piece came from."

These last two items are taken at random from the school's sports diary. The 1967 annual report of Yuri Klimovich, chairman of the MVTU Sports Club, mentioned them in the same casual way: A ski cross-country was held from February 10 to March 10 and a lightning chess tournament on September 14.

Health Costs Only 30 Kopecks

"Most young people are drawn to sports almost instinctively," Yuri Klimovich said in a talk with us. "But despite that, we have to explain to some that active recreation is good for their studies. Physical culture is compulsory in our institute for first- and second-year students. This is true of all higher educational institutions in the country."

"And how about the seniors?" I asked.

"Unfortunately, some quit sports," Klimovich said, "but most of them remain our loyal friends even after graduation. Believe me, science and sports coexist admirably."

I realized what he meant when I saw the professional records of veteran MVTU sportsmen displayed on a special board of honor. Eighty per cent of them have advanced degrees. Many have been sports champions of the USSR and Europe, prize winners in world competitions and at the Olympics.

There is a saying at Bauman: "Want to be healthy? Hand over 30 kopecks." This sum purchases membership in Burevestnik, the national student sports society. It also automatically makes a student a member of the MVTU Sports Club, whose history dates back to 1945. In addition to the entrance fee, the annual dues are a modest 30 kopecks.

The MVTU Sports Club has its own emblem, its own banner and rules. The board makes yearly reports to a general membership meeting. Most matters are settled by the students themselves. But finances are handled by the institute's administration. In other words, the state and the trade unions cover all expenses—competitions, salaries of qualified trainers, rent for sports installations, and so on. Some of the sports groups are headed by unpaid volunteer trainers, usually student Masters of Sports.

The MVTU Sports Club was the first student organization of its kind in the country. Institutes and universities in Moscow and then other towns followed suit, and all the clubs were subsequently affiliated as the sports society Burevestnik. Along with such famous societies as Spartak, Trud, Dynamo and the Central Army Sports Club.

Burevestnik became a school for training sportsmen and a supplier of world-class athletes to the USSR national teams. It has played a considerable role in making Soviet athletes formidable Olympic competitors.

Of course, any rector would be pleased to have an Olympic champion, a world champion or a national champion in his institution. Bauman, also, takes pride in the fact that many of its students have made their athletic mark: Yuri Selikhov became a world basketball champion as a member of the Soviet national team; Vadim Panteshkin, a volleyball champion of Europe as a member of the Soviet national team; Vasili Nikolayev, shooting champion of the Spartakiad of the Soviet Peoples; Alexei Altukhov, a USSR national champion on the 4x100 relay team; Sergei Chetverukhin, figure skating champion of the USSR; Vellington Barannikov, prize winner at international boxing tournaments. The list could be continued indefinitely.

But the school takes pride not only in its stars. More important to the sports club are its large number of members and their match participation. For instance, in 1967 the club held 307 different contests with a total field of 22,000 young men and women.

Of course, facilities are a requisite if everybody who wants to be active in a sport is to get the chance. The school has somewhat more modest sports facilities than Moscow University, for instance. MVTU still has to rent stadiums, swimming pools and gymnasiums from various Moscow organizations. But soon this need will end; the government has allocated funds for the construction of sports facilities. The students themselves have done much of the work in recent years. They put up a covered slip, laid out several sports fields, and built student holiday homes near Moscow and elsewhere. Today, the health facilities of the school include a mountain climbing camp in the Caucasus, a boat station near Moscow and a tourist camp in the Carpathians. The students are building themselves a stadium (each student has to work at the construction site six hours per term). The Ministry for Higher and Specialized Secondary Education has allocated 2.4 million rubles for the equipment.

The students are also helped by the local trade union committee, which furnishes money to rent gymnasiums, football and hockey fields, tennis courts and swimming pools. Training sessions in the gymnasiums and on sports fields are always crowded with participants and rooters. MVTU students are as fond of sports as they are of books, theater, painting and their different hobbies. It is not by calculus alone that a Bauman student lives.

LETTERS TO THE EDITOR

Gentlemen:

I only recently renewed my subscription to SOVIET LIFE, but your August issue on man's accomplishments in space was well worth the entire subscription cost by itself. It was the best issue of any I've received . . . fantastic!!!

The only regrettable thing about the programs of the USA and USSR is that they are carried on separately. But perhaps by the time we go to Mars it will be as a Planet rather than as mere nations on that planet. Again, my congratulations and thanks for a most interesting visit into your space efforts.

John W. Keeslar
Coldwater, Michigan

Dear Sirs,

The January 1969 issue of SOVIET LIFE was of particular interest to me, inasmuch as customs are not really unlike our own. There seems so little reason for not understanding each other.

May I compliment you on your article "Life on the Sixty-Ninth Parallel." Your illustrations and graphic explanations are marvelous.

Yours truly,
K. Bateman
Kamloops, B. C.
Canada

Dear Sir,

That article on wines entitled "In Vino Veritas!" by Kim Goshev, in the May 1969 issue, prampts me to offer my cangratulations and to thank you for making SOVIET LIFE available to Americans at such low cost.

I read 10 to 20 periodicals regularly, from the far right to the far left, so I try to skim through them as quickly as possible. But I find it hard to lay down your magazine once I have picked it up and looked at the excellent pictures and nibbled at the text.

On the wine article, I was attracted by the beautiful color picture of wines and fruit, so realistic I could almost smell and taste the wines and fruit.

Every time I try to skim through SOVIET LIFE, giving it the "once over lightly," I fail and wind up reading it cover to cover. It is so refreshing to see so many real HE men at work and at play, and so many beautiful, natural and healthy-looking women and children. Any cauntry that can produce such men, wamen, children, wines, heroic construction projects and farms can't be all THAT bad, I conclude.

Sincerely,
Charles H. McGuire
Brooklyn, New York

Dear Sir,

I have just finished reading the article in SOVIET LIFE entitled "A Journey from St. Petersburg to California" written by Fyodor Kankov.

It is a splendid article, and as I live about 50 miles from Ft. Ross I know the country very well.

The relationship between the two nations as displayed at that time was as it should be.

I hope that SOVIET LIFE will do everything possible to promote friendly relations between the Soviet Union and the United States. Thank you.

Yours very truly,
Fisher J. Kinslow
Santa Rosa, Califarnia

Dear Friends,

I wish to thank you for the excellent article "Soviet Teenagers: What They Wear, Sing, Dance." It surely points up the fact that youth around the entire world are so much alike, with the same backgrounds no matter where they live. As a young man myself I steadfastly hope that the youth of this world will be able to bridge gaps and bring to the Earth peace and brotherhood.

Richard Chinn
Chicago, Illinois

Dear Sirs,

Your magazine is outstanding. I like the way you include current events, like the USSR-USA soccer match in your last issue and the complimentary statements by the Soviet delegation, in such good humor and good spirit, even though they did nat win all of the games, which most of us in California thought they would! (It would be interesting to add names to the photos as the Clippers have many internationol stars on the team, like from Yugoslavia.) Surely you are helping international relations.

I disagree with one of your readers who stated, "too many pictures." This is the most enjoyable, when you are able to see another country's people at work or at play, and being brought together by mutual cultural interests.

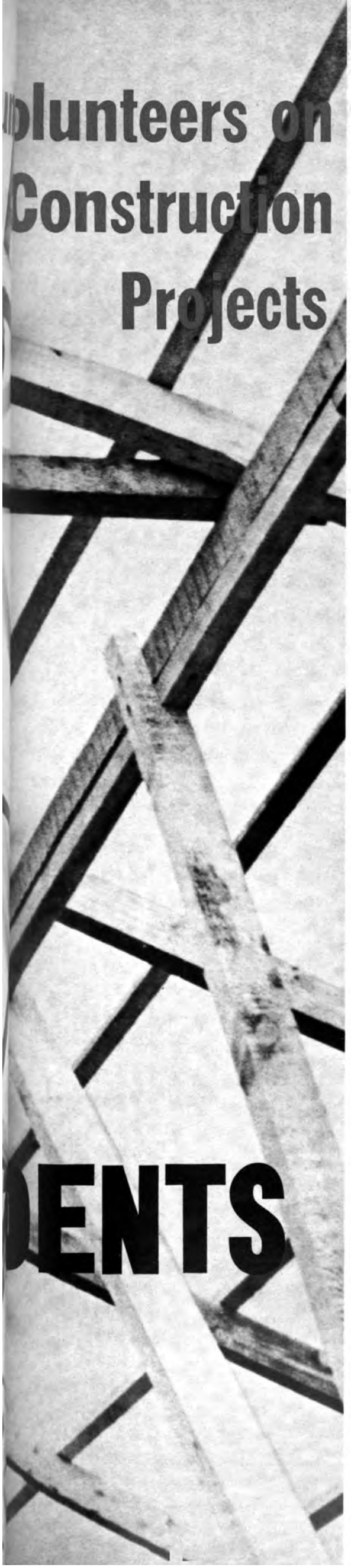
Best wishes,
Mary Vasilieff
San Anselmo, California

The following poem was sent to SOVIET LIFE by Mr. George Spain, Franklin, Tennessee.

LENINGRAD 1941-1942

Once
There were many children
Who were cold so cold
At night
Their thin arms clung tight
Around mothers
Who were so cold
While terrible dreams were dreamed
Of food
That was cold so cold
So very cold.
Many little
Sleds squeaked over snow
That was quiet so quiet
And no
Laughter was laughed by riders
Who were quiet so quiet
While sliding sliding toward
A place
That was quiet so quiet
So very quiet.
O children
Of Leningrad, beautiful Leningrad
Who are old so old
So very old
May your children be warm with Laughter.


Summ
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olunteers on Construction Projects

ENTS



MOVE EAST

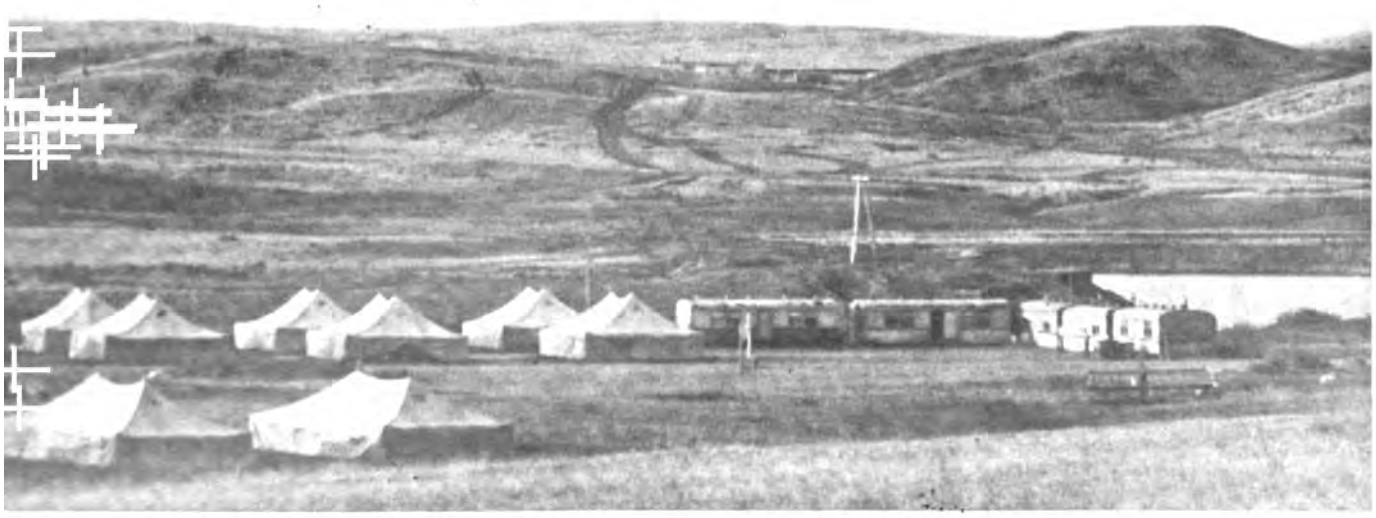
By Boris Novikov and Mikhail Polyachek

Photographs by Vladimir Tikhonov

In summer students in green blazers sporting the emblems of their universities and institutes swarm from the campuses to railway stations. They board cross-country trains and return after a month or two exhilarated, bronzed, the young men having grown beards. Summer is manual labor time for thousands of Soviet students who volunteer for construction jobs in various parts of the country. Romantic, eager for new impressions, they want to test themselves at tough outdoor work. The movement was started 10 years ago, in the summer of 1959,









by physics students from Moscow University who traveled to Kazakhstan, thousands of miles from their homes. There a newly organized state farm was in dire need of builders. The team of 330 Moscow students filled this need. Their example was followed by others. The movement embraced 270,000 undergraduates last year. It is well-organized, with nothing haphazard about it; everything is planned by the National Students Building Team. We talked with four movement leaders about some of the young volunteers' accomplishments.





Far left top: The population of Svetly in Siberia grows younger by a good 10 years when these student builders take over.

Far left bottom: The tent camp of Moscow student volunters near the site of a future dam across Kazakhstan's Ishim River.

Center left top: The owner of this jacket has already worked with teams in the virgin land areas and Yakutia.

Center left bottom: Future physicists, chemists, engineers, philosophers, economists compete in a bricklaying contest.

Left top: Student gangs lay rail lines and build roads and houses. This team is preparing a helicopter landing strip.

Left: The feminine touch is added to a house in Mirny, the diamond town, by coeds of the Moscow Power Engineering Institute.

Bottom: It takes extra special stamina and considerable dedication to volunteer for work like this under the steppe's broiling sun.

Right: Tanya Alekseyeva is majoring in interior design. Summers she does interiors for schools built by student teams.





Summer Volunteers on Construction Projects

Vyacheslav Pismenny, one of the NSBT's organizers and most zealous supporters; today a researcher in charge of a Moscow University laboratory:

Students had helped to develop uncultivated areas in Kazakhstan and other places before we set out with our team of 330 in 1959. But they were not too effective. They took their orders from the state farm management; some helped with harvesting, others built sheds. When we arrived at the remote Bulayevsky State Farm, we thought that if we concentrated on one type of work, say building, we could do a more efficient job. And so we organized ourselves into a building team.

Frankly speaking, we had no spectacular successes to our credit that first summer. We managed to build 15 small cottages and several cowsheds. We were unskilled, and the building work left much to be desired. We learned a few lessons however —that we had to have definite experience in particular kinds of jobs, and that we had to have a single student organization to direct the work, pick the jobs, handle supplies, etc.

And since the membership of student work teams kept changing—young people were graduating from college—and certain rules of behavior and community life were shaping up by themselves, we thought it advisable to draw up such rules.

I must say that at first it was pretty hard for us to believe that the organization we envisaged was practical: a nationwide student society of work teams with established rules of work and community life. But today we have such a society and a very successful one.

Yuri Strubtsov, chief engineer of the central staff:

We have traveled a long way from that one student work team organized by Vyacheslav Pismenny to our present wide-reaching system. The end of every summer brought new suggestions from students, and added experience helped us to improve our organization.

Today we have what we call a basic unit, the student work team, a large, well-knit student group usually assigned to work on some definite state or collective farm. This unit is responsible to and takes orders from a district staff of our organization. The district staff is answerable to a regional staff and the latter to a staff in the particular republic. Our highest body is the National Team Central Staff in Moscow.

Once Moscow students report for summer work in the Tselinograd Region of Kazakhstan, for example, they no longer take orders from the Moscow staff—which in the course of the academic year supervised their teams' organization and preparation—but from the local staff.

Well in advance, the Moscow, Leningrad and other staffs of our organization, appointed by the Komsomol, or Young Communist League (YCL), bodies, choose the places to which the work teams are to go and make arrangements with the local authorities. All of Moscow's college students do not necessarily travel long distances; they may be assigned to work in the rural areas around Moscow.

Early fears that our organization might become unwieldy and bureaucratic proved unfounded. Some romantics claimed that it might turn into a sort of building contracting firm which would dampen student enthusiasm. However, such arguments were pointless in the face of the obvious need for an organization that would take care of such matters as equipment and provisions, hire experts familiar with local conditions, give guidance to the movement, arrange for medical services, etc. Each team needed a doctor if the students were to keep fit and healthy in an unaccustomed climate, in sultry heat or desert dust, with hospitals far away. Moreover, doctors that came with the teams were welcomed by the local people, glad to have medical men within easy call.

Teams, too, often brought trained Young



Oleg Boiko, an economics major from Leningrad, is working on the concrete ceiling of a school building to accommodate 300 state farm children.



Leningrad students designed and built a memorial in the Kazakh steppe where Cosmonaut 5 Valeri Bykovsky came down. They signed it this way.

Pioneer camp counselors to help organize concerts, games and sports at the local children's camps run by the state farms. The student teams brought along sports equipment and camp uniforms for the children.

The salaries paid to commissary people, doctors, camp counselors and top executives in our organization are considered part of the overhead that any undertaking has to reckon with. Funds sometimes go for other things: At the time of the Tashkent earthquake, our students contributed part of their summer earnings to rebuild the city.

In a work team you almost always found a few good musicians, singers and dancers. Teams therefore arranged concerts for the local people. They organized educational talks and discussions. These activities were good for the students, who often had nothing to do in the evenings, and for the local farm youth living far from big towns.

Today teams have expert staffs looking after supplies, medical services, educational activities and, most important, building engineering. There may be on a team some senior students specializing in construction; if so, they will often serve as supervisors. But in many cases the volunteers are from nontechnical professions, and then experts are recruited to supervise the building.

Experts are needed also to see that labor safety regulations are observed. No team will begin work if conditions are substandard, regardless of promises from the building contractors. This applies to all teams, including the republic work teams.

I should say a word also about teams that do not fit into the general scheme, the ones that do not build in rural areas.

For example, we have college teams doing railway construction. Their jobs are tougher. Students who helped build a railroad to the oil fields on the Mangyshlak Peninsula (in the Caspian Sea)—and also the station structures—worked in remote desert in 122° heat. Of the students who volunteer to work on such teams the hardiest and strongest are chosen. Young men are now building a new railroad in the desert areas bordering on the Caspian Sea, connecting the town of Guryev with Astrakhan. Teams of this type go to the Far North and Siberia.

Special medical student teams spend part of the summer in distant parts of the country. They, too, are part of our central student organization, and they do just as good work as the building teams. Local health boards hire them as temporary staff. One team set up a floating hospital aboard a boat on which they sailed the Yenisei, checking the people living on the shores

of the big Siberian river. Siberia is such a vast country that local medical staffs are grateful for additional help.

This year students of the First Moscow Medical Institute were assigned to check a half-million people in Tuva and Khakassia, in the southern part of Siberia.

Teams are assigned to mushroom and berry picking, jobs male students think beneath them, but which nonetheless are important. In many of our northern woods great quantities of blackberries, blueberries and other wild berries rot on the bush.

Summer work for students ought to be even more varied, we think. Building is important, but many other forms of work should be encouraged. Law students could travel to remote areas and give legal advice to the local people; students of drama schools could arrange shows and concerts.

Of what actual benefit are these student efforts? Two years ago economic experts estimated that the work done by student teams could build a modern city of 500,000 inhabitants. Working methods improve every season. Investments in the student effort in the summer of 1967 ran to 185 million rubles and in 1968 to 318 million rubles, equal to the annual expenditures of 80 state building boards.

Working part of their summer holidays is a financial help to the students; they each bring home three to four hundred rubles, sometimes more. Incidentally, student earnings are tax exempt. They get their railway fare there and back free and meals at reduced prices.

Ivan Stolyarov, chief engineer of the Moscow regional team:

Although Yuri has dwelt at length on our whole organizational setup, there is one point that I think needs stressing. Despite the wide ramifications of our system, the lowest unit, for example, a student work team on a state farm, has a good deal of independence. For one thing it can sign an agreement for work on its own terms.

The team captain and foreman themselves pick the structures they will build during the summer. Most of the students have no building experience and therefore can tackle only the simplest type of house. The farm management must meet them halfway—they know that they can't use pressure through the central staff because the team has the right to decide what it will build.

The number of builders and the time when the building is to be completed are stipulated in the agreement concluded by the team and the state farm management, whose business it is to provide the students with living quarters, food supplies and transportation.

It's also noteworthy that our student work teams are recruited well ahead of time at the colleges on a voluntary basis and that, as a rule, more students want to go than are needed. The backbone of these teams are the "old-timers" who already have one or two summers of work behind them and are experienced in building and community living. The word of the team captain (appointed by the college YCL committee) is law. A student joins a work team voluntarily, but once he is a member he must obey the rules. The captain, of course, does not decide matters entirely on his own, but by taking counsel with the team staff or leadership, and his powers are not unlimited. The length of the workday or penalties for breaches of discipline—for example, drinking on the sly ("prohibition" is enforced)—are decided by the team members themselves. The strictest penalty is expulsion, but few students want to disgrace themselves in front of people with whom they will be studying for several more years.

Anatoli Sakhranov, chief of the Moscow united staff:

I should like to add something about the moral aspect of our movement. Not being a hypocrite, I wouldn't want to underrate the importance of these summer jobs to our students' pocketbooks.

And yet our teams are quite different from the ordinary seasonal workers hiring out for the summer on collective and state farms. For one thing, a strong sense of student fellowship pervades everything the team does. The students live in a commune in which everything is shared. Not that everybody gets the same pay, but here, too, the prime consideration is the attitude toward the work, the enthusiasm and eagerness. That, of course, is not the business of the people who hire the team; they pay a lump sum which the team members themselves divide. But it seems fair to follow the attitude-toward-the-work principle. For why should a big hefty fellow who does not overwork himself get more money than a frail coed who puts in enormous effort not to lag behind?

Earnings are not the sole incentive. Many students join the work teams to see new places and people, to get away from sheltered homes, to find an outlet for their energy. Our students are not moneygrubbers who bargain for higher prices. On the contrary, they will take an unprofitable job when they know that their work is badly needed. Nor do the teams do a sloppy job, just to get finished, pocket their money and hurry home. All of them take pride in their work.

That's the reason they are well thought of by the state and collective farm managements and the building boards. Local managements will choose student teams in preference to seasonal workers whose major incentive is the money. For rural people student teams have the additional attraction of providing entertainment and educational activities and helping to organize programs at the children's summer camps.

There is something, too, that the students themselves get from their teams that can't be measured in terms of money: organizational experience, character building, self-reliance and a sense of responsibility. We know for a fact that pretty nearly every undergraduate who spends the summer working goes back to college a more mature individual. The sense of having done something worthwhile in the summer gives the undergraduate greater independence and confidence.

Work experience gathered in the summer stands the future specialist in good stead. It teaches him the difficult art of working with and getting along with people. The other day I had occasion to talk to Semyon Berinzon, a young man who was captain of a student work team and today is in charge of a trust in Kazakhstan. Semyon told me frankly that for his speedy promotion to the big job he now holds he owes much to summer work in the virgin lands, where he learned a good deal about leadership and organization.

Nor should we forget the opportunities that working and living together for a summer provide to form lasting friendships.

Summer work teams have developed into a mass movement. In the very scope of the movement there is the danger that the students' enthusiasm will not always find the best outlet. Incompetent local managements sometimes make the mistake of piling on all kinds of uninspiring jobs, assigning dull work that takes no initiative. This means that at the present stage of the movement a good deal of thought must be given to the best way of organizing summer work.

Another problem is that eventually there will not be the great demand there is today for small building jobs. Considering that the number of student volunteers for summer work is growing, new outlets must be found. It seems logical to extend the areas to which teams are assigned, to look for other kinds of construction. Road building, for example, offers immense possibilities.

But whatever new kinds of work crop up, the student movement will continue to be motivated by its traditions of enthusiasm, adventure and comradeship.

HOW WE GREW UP

By Vladimir Tikhomirov

The writer of these notes spent several summers as a member of a student construction team. First he worked as a mason on the Leningrad University team, then on student summer newspapers.

"SOMETHING HAPPENS to us here. We become adult before we know it," wrote a student-physicist who came to the Bulayevsky State Farm in the virgin lands the summer of 1959. This 20-year-old felt that he had suddenly grown up. The feeling came when he and his comrades built their first house.

The house was nothing to write home about, but it was where the history of student construction teams originated. The new movement, its rules and traditions, were born at the Bulayevsky State Farm. The students even opted for "prohibition." Those who were opposed could leave, and no hard feelings.

I visited there several times and last year decided to go again. It was a kind of jubilee, the tenth team had come. Like the first one, it was made up of Moscow University physics students.

Some 15 years ago Northern Kazakhstan was an endless steppe burned by the merciless sun. Virgin land development brought the first fields of wheat and new state farms, Bulayevsky among them. What is special about this state farm is that more than half of its buildings—whole streets—were put up by students.

The bright-colored tents of the student camp stand out sharply against the background of unrelieved steppe. Some 300 feet from the camp a club is under construction. Nearby the walls of new houses for the state farm personnel are being plastered. The students are behind schedule because the building materials didn't arrive on time. They will probably have to report to the university that the job will not be finished until after the school year begins. This, of course, will bring angry telegrams from the dean's office ordering them back to Moscow immediately. But the students hope the telegrams won't reach them, since the state farm is going to change its name. Instead of Bulayevsky it will be called Studenchesky (Student) in honor of those who helped build it.

The Island of Kii

"We cleared the rubbish from the northeast cells and the brewery, sorted out the broken brick and pieces of plaster in the burial vault and cleared the passage in the refectory." These lines come from the diary of a restoration team. This particular student restoration team went to the North, to the island of Kii near the White Sea coast.

The young people working there are students of the Moscow Chemical Technology Institute. When they were told during the winter that their team would be sent to restore the northern monasteries the coming summer, they were bombarded with volunteers. Aliya Abdrakhimova, a Kazakh girl from Alma-Ata, was one of those who asked to join the team. She just had to see the White Sea and the northern lights, she said. The selection committee was opposed at first; the girl looked too delicate. But Aliya happened to be a Master of Sports in calisthenics, and that turned the trick.

"We expect you to take part in the variety shows we're going to give for the fishermen,

Continued on page 16

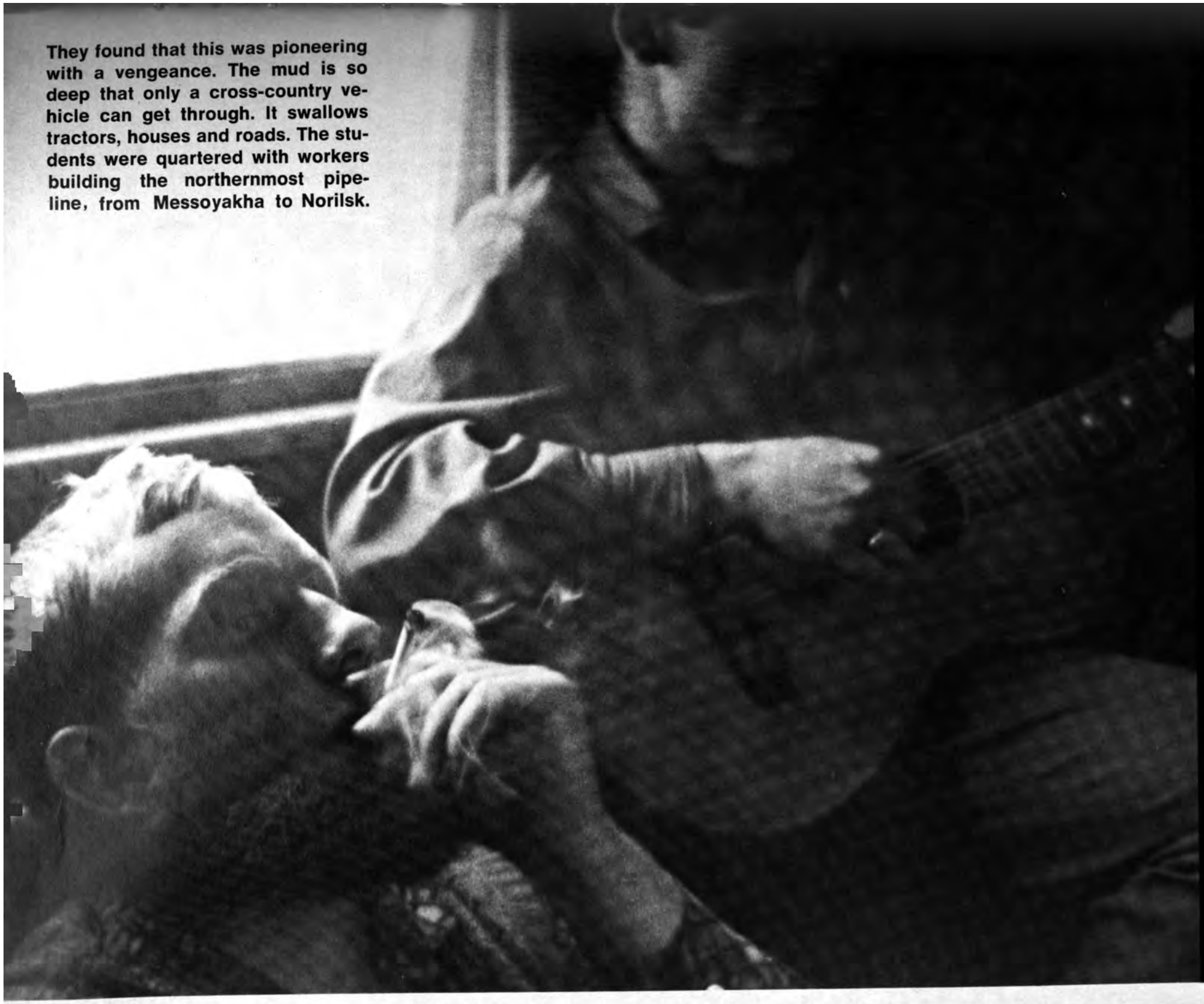
JOB IN THE TUNDRA

Photographs by Sergei Petrukhin



The Taimyr tundra country is hardly something to write home about, for people accustomed to urban comforts, certainly. Moscow Physico-technical Institute students who volunteered for construction work in this desolate country were warned beforehand, but it didn't faze them.

They found that this was pioneering with a vengeance. The mud is so deep that only a cross-country vehicle can get through. It swallows tractors, houses and roads. The students were quartered with workers building the northernmost pipeline, from Messoyakha to Norilsk.









In their free time they made friends with the Evenki, the hardy local people.



Building a house on permafrost and with almost no training was an achievement.

Getting up the last few sections of the heavy slate roofing.

For Ulyana Nikonova, a Yakutian girl, this harsh tundra is home.





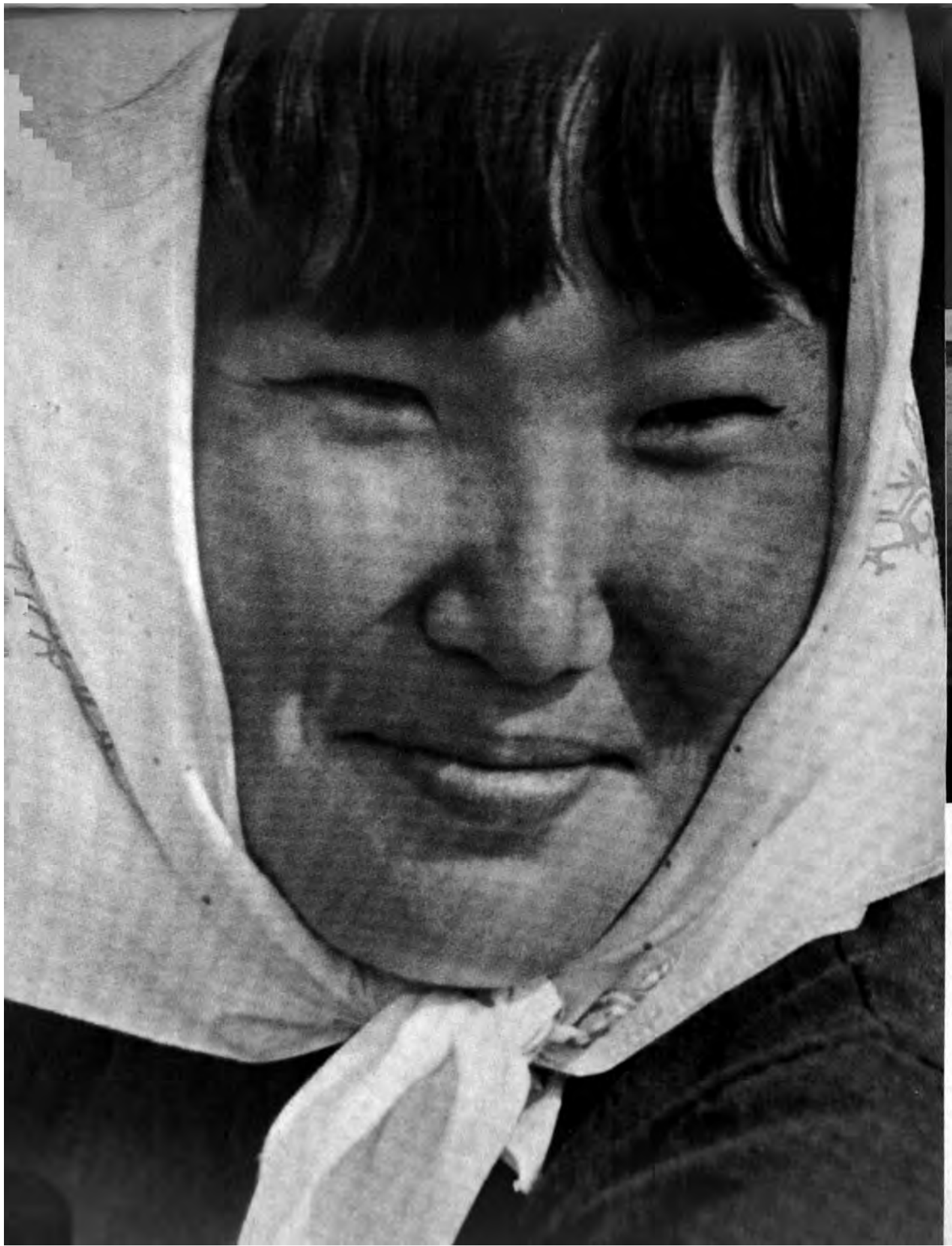
work in. The young men [illegible]

work in. The young men from the building team of the Moscow Physicotechnical Institute were warned about that in advance; nevertheless more volunteered than were needed. Wages in the Arctic are high, and in a summer a student can make enough to carry him through almost the whole winter. And yet a poll circulated by a correspondent for the youth magazine *Smena* showed that the students' prime motivation was the challenge—to see whether they could take it.

At Kisly Mys they were quartered with assembly workers who were building a pipeline to the Arctic city of Norilsk. The students were assigned jobs assembling panel houses and cobbling over wooden roads. They were short on skill, but the

That spirit took some working up to. There were delays in the delivery of building materials to this distant location, and the students had to fill in with odd jobs. But after the first disappointments they realized that this was not Moscow but tundra country and that difficulties were inevitable. After a while they stopped griping and made their adjustments.

Tough Kisly Mys helped the students see themselves and each other without blinders. By the time they headed back to Moscow they knew who was capable of leading and who must be stirred to activity, who could meet difficulties creatively and who did no more than make caustic wisecracks. They brought back more than muscle and money from the tundra.





Probably every group of student builders has a bard to compose its epic. Some of the songs have caught on with other students all over the country.

Arctic wages are high, but a poll showed it was the challenge that brought the students.



HOW WE GREW UP

Continued from page 11

so work out your program, please," she was told at team headquarters.

Aliya had a hard time of it. Besides the shows, she had to carry heavy trays. Her hands were covered with blisters the day after she came. Still she saw what she had always wanted to—the pastel-colored landscapes and the northern white nights. The students lived in the cells of the famous Krestovy (Cross) Monastery built in the seventeenth century. Evenings when the weather was bad and they had to stay indoors, they passed the time telling each other what they knew of the ancient legends and folk beliefs. The setting was perfect.

"I became so used to these isolated islets during those two months," said Aliya, "that I intend to spend all my holidays in the North from now on. I've been to the South and spent two months on the Black Sea, but I wasn't much impressed. Of course, I was just relaxing there and not working. Maybe that makes the difference."

A Gift of the Sea

The body of the dam is outlined by thousands of iron bars; fireworks of electric welding flare up here and there. Dump trucks, hidden by their own smoke, roar by.

A reservoir is being built here on the Ishim River in Kazakhstan to supply water to the city of Tselinograd in the steppes, and for irrigation. Half the workers at the construction site are students. Some come from the Tselinograd Civil Engineering Institute, others from the Moscow Land Reclamation Institute. They work as steeple jacks, electricians and geodesists.

"Of course we can't match the qualifications of real workers," says Slava Surikov, leader of the student team, "but we make up for it in enthusiasm. Besides, we take both the profitable and unprofitable jobs. If I send someone to a temporary low-paid job, he knows that his comrades will share their wages with him. Our motto is: 'One for all and all for one.' We even posted the slogan, though it isn't the slogan that matters."

I was leaving with the team's student commissar, Gennadi Kosoy. Gennadi was shipping back to Moscow a hopeless loafer who wouldn't put a hand to anything. He packed him off by train to everyone's relief. The slacker was chipper enough, but we all felt ashamed for him.

Then we went to the hospital to visit Genrik Kirokasyan, a student from Gennadi's team who was suffering from acute lumbago for the tenth day. We brought him flowers, fruit and letters. The doctor told him that he couldn't possibly go on working with the team, and although he understood he looked very glum about it.

"Unlucky fellow," said Gennadi on our way back. "He stayed out in the sun for a long time and then, without cooling off, went for a swim in the cold river. You can't always get away with that. Of course he gets his pay like everyone else, but he is pretty upset. His only consolation is that we probably won't be able to see the results of our work either, since the reservoir won't be filled until after we leave. The local students are luckier. Well, we'll make them a present of the sea."

I Can See Diamonds!

They were probably the gayest passengers Aeroflot ever flew. Inside the several planes packed to capacity with Moscow students the sound of voices and guitars did not stop all day. And they were a full day in the air, the route being a long one—Moscow, Sverdlovsk, Novosibirsk, Irkutsk. In Irkutsk they boarded other planes and flew to the diamond districts of Yakutia. Examining the enormous quarries through the portholes, Volodya Andreyev suddenly yelled: "I can see diamonds!" waking up his friends who had fallen asleep after a tiring day.

After landing, the group separated. The students from the Power Engineering Institute set up camp in the settlements of Mirny and Lensk, while the Engineering Physics Institute students went to the construction site of the new town of Aikhal and to the Chernyshevsky settlement where the Vilyui Hydroelectric Station was under construction on permafrost ground.

The future power engineers were disappointed. What they had in mind was building new houses and inscribing the name of their institute on stone for the edification of future generations. They also hoped to extract diamonds. But owing to unforeseen circumstances, they had very dull jobs—laying water mains and paving sidewalks. In permafrost conditions this was hard work. A ditch dug with great difficulty the night before that sparkled with icicles in the light of an electric torch became a dirty puddle in the morning.

At first they couldn't work up any spirit. They knew that a city must have a water system and sidewalks, but students, like young people generally, are not overly patient and hate being disappointed.

They spent their free time in the black burnt-down taiga. For dozens of miles around Mirny you see the charred trunks of larches destroyed in forest fires. The ground under the trees is all covered with red and black billberries and mushrooms that the students picked.

They put up their tents close to the town, beside a diamond-dressing mill. Before leaving for home they went to the mill to see the diamonds and also visited the quarry. They picked up bits of red pyrope and blue petrified clay to take home as souvenirs. That same evening Volodya Andreyev chipped off a bit of glass from his souvenir and threw it into the drawer of his night table. Only in the morning did it strike him that he ought to show it to somebody at the mill. The "bit of glass" turned out to be a diamond of the first water weighing six carats.

Volodya was subjected to a lot of kidding, particularly when someone remembered that it was he who had yelled on the plane that he could see diamonds. The find was much talked about at the institute in Moscow. In general, the students remembered only what was interesting and pleasant, usually the case after holidays. They soon forgot all about the eternal frost.

Pioneer Leader Natasha

Natasha Gevlich, a student at the Moscow Institute of Electronic Machine Building, had long wanted to visit the virgin lands. When everything was finally arranged and she was on the verge of leaving, she became ill. But when determined Natasha recovered, she bought a ticket for Tselinograd with her summer stipend and joined her comrades two weeks later.

She hardly recognized them. Kazakhstan had changed them, even their looks. It seemed to Natasha that the boys' faces had grown more manly. They looked like actors in adventure films. Their voices, too, were deeper and more confident.

By the time she arrived, the students had organized a Young Pioneer camp for the children of the workers on the state farm, and she was immediately made senior Young Pioneer leader. The job would not tax her physically, the students thought.

But everyone knows that working with children takes strong nerves and good health. Natasha had to manage 50 madcaps who thought that the word "discipline" was for school only, not for summer holidays. The only way to pacify them was to keep them busy all day. Natasha managed that beautifully. The children kept pulling her away to see, help, do, all the time she was talking to me.

At first the girls came to ask her to arrange a performance of the puppet theater (the "actors" and the props were brought by the students). Then it was the boys looking for the gym keys; a wrestling lesson was scheduled with one of the students as coach. Then two small boys, all in tears after a fight, came running to complain about each other. The Pioneer leader had to explain very patiently why it was not manly to tattle on one another.

"My elder brother told me all about the virgin lands a long time ago. He helped to develop them. When I had an opportunity to go somewhere besides my grandmother's village and our student camp on the Black Sea coast, I took it gladly. I'm 20 already, and I haven't been anywhere yet. I don't say that people should create difficulties for themselves, but still we should try to avoid roads that are too smooth. Or else we'll never get to know ourselves.

"Though I'm not a builder, as you see, I still hope that the children will remember me, just as their parents will remember our students who built their houses."

Drinking to Friendship

One bus after another kept pulling up at the edge of a birch grove where a student camp was situated, and members of an international student team—Polish, Czechoslovak and Hungarian students studying at Soviet higher educational institutions—got out. The light green sides of the tents soon bore the names of the different countries. However, the day after they arrived, the foreign students decided to move into the tents of the Russian students so as to improve their Russian.

In the evening the state farm sent trucks with kumiss (fermented mare's milk) to mark the occasion. Someone had complained in the afternoon that because of "prohibition" they couldn't celebrate the arrival of the foreign students in style. The manager of the state farm took the hint; his specially prepared kumiss had some alcohol, even if it was only three per cent. When the students sat around the campfire that evening, the Kazakh beverage that none of the guests had ever tasted was poured into the tankards. The first toast was to friendship.

The French students missed the feast. They arrived a little later and started working right away. The young Frenchmen changed their elegant suits for the faded tunics of the team and tried to catch up. But they spent only two weeks on the job since they were scheduled for a trip around the country, with visits to Leningrad, Moscow and Kiev. The trip was to take a week. (This group of Parisian students had come on a cultural exchange basis, and they themselves expressed the wish to join our student construction team.)

On the eve of the French students' departure, the international team arranged a farewell party. Everyone went to the lake. They made a fire on the bank, caught fish and cooked fish soup. I started a conversation with Mireille Chaudet, a student from Paris. She didn't speak Russian well enough, and we soon changed to English. Then I was in an awkward situation, my English being far from perfect. Mireille told me that she was studying literature at the Sorbonne and had read many books by Russian and Soviet writers. I'm not very experienced at interviews and asked the girl this rather trite question: How did her personal idea of our young people compare with the picture she had drawn from books?

"You know, I can't compare them," said Mireille, "since books give one the opportunity of studying the writers themselves mostly. The author usually creates a general image, while here I've gotten to know real, concrete people. Books are all very well, but I intend to study life myself, get my own impressions. The impression your students made on me is very pleasant indeed."

* * *

I could go on turning the pages of my notebook indefinitely, seeing before my mind's eye the houses, highways, dams and bridges the students built, remembering the people the medical students took care of, hearing the applause of audiences at the modest student concerts. If it were up to me, I would write it all down not in notebooks, but in special examination papers which would gauge the work done by the students during the summer "term." And I would distribute the papers to all students.

North Siberian white nights are like those in Leningrad, perhaps more romantic, with wild taiga instead of familiar streets, and tall pines instead of the Petropavlovsk spire.



ORBITING





At Leningrad Airport the Bormans were welcomed by city officials, ordinary citizens and numerous photographers. Among the nearby landmarks they visited was Petrodvorets, formerly one of the most brilliant summer residences of the Russian czars. Their guides included cosmonaut Konstantin Feoktistov (left) and Gherman Titov (right).

Photographs by Yuri Somov

JULY 2, 1969

At the last instant the air controller on duty at Moscow's Sheremetyevo Airport changed parking places—instead of Gate No. 13, the Pan American jet airliner with American astronaut Frank Borman, his wife Susan and his sons Fred and Edwin on board taxied to Gate No. 12. "This plane has had enough trouble already," the controller said. Indeed, the plane was almost 18 hours late because of technical troubles, and the air controller's gesture, although a joke, was perhaps the first contribution toward making the visit a success.

And so Frank Borman became the first foreign spaceman to visit our country. He was warmly greeted by Victor Gorshkov, vice president of the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries. This is the 30-million-member organization which invited Borman and his family to the Soviet Union. Also on hand were Dmitri Muravyov, executive secretary of the Institute of Soviet-American Relations, which is part of the union of friendship societies; Borman's Soviet colleagues, cosmonauts Gherman Titov, Konstantin Feoktistov and Georgi Beregovoi; Colonel General Nikolai Kamanin, chief of the Soviet cosmonauts, and numerous ordinary Muscovites.

Victor Gorshkov presented Mrs. Borman with a bouquet of red carnations, and Tamara Titova, the wife of the Soviet cosmonaut, presented a similar bouquet to Mr. Borman.

In answer to the newsmen's first question, Borman said: "I expect this visit to the Soviet Union to promote the further investigation of outer space and the establishment of friendly cooperation between the United States and the Soviet Union."

That same day a TU-124 jet airliner flew to Leningrad with Borman and his family, Gherman Titov and his wife, Konstantin Feoktistov, Dmitri Muravyov, a special correspondent of APN and four TV cameramen.

After a warm welcome at the Leningrad airport, the Bormans' first visit was to Piskaryov Memorial Cemetery, where the statue "Motherland" with its bronze wreath stands sorrowfully among the countless common graves of hundreds of thousands of women, children, old people and soldiers.

Frank Borman laid a wreath at the foot of the monument. The inscription on its ribbon reads: "To the heroic defenders of Leningrad from U.S. astronaut Frank Borman."

"The Americans know and remember what the Leningraders accomplished," he said.

As the motorcade rolled through the city, there were no traces of the war to be seen. The palaces, cathedrals and avenues, restored by Leningraders, looked as majestic as ever.

The visitors' destination was Smolny, the headquarters of the October Revolution. From here Lenin and his party of Bolsheviks directed the armed uprising of Petrograd workers on November 7 (October 25), 1917.

The Bormans were shown the conference hall—scene of the historic Second Congress of Soviets, at which Lenin proclaimed Soviet power—and the apartment of Lenin and his wife, Nadezhda Krupskaya.

Next the guests boarded the cruiser *Aurora*, now a museum. On November 7, 1917, its six-inch fore gun fired the shot that signaled an armed uprising.

Borman and his family were welcomed by ship's commander Yuri Fyodorov. In a small Soviet naval museum in the fore part of the ship, they saw a photograph of the cruiser *Varyag*, built in Philadelphia by order of the Russian Government. Fyodorov told Borman the story of the cruiser. During the Russo-Japanese War of 1904-1905, the *Varyag* was blocked by a Japanese squadron in a small bay of the Korean coast. The commander, with his crew's approval, ordered the Kingston valves opened and sank the ship before the eyes of the stunned enemy. "That was not a *Pueblo*," Borman remarked.

JULY 3, 1969

Mrs. Borman: "I propose a toast to the wives of spacemen, who share the equally heavy burden of anxieties and honors."

The Bormans, accompanied by Gherman Titov and his wife and Konstantin Feoktistov, paid a visit to Alexander Sizov, mayor of Leningrad. The mayor and his staff gave the guests a warm welcome.

Sizov pointed out that all the Soviet people followed Borman's flight in Apollo 8, and the subsequent Apollo flights, with great attention. Earlier, they had been deeply grieved over the deaths of American astronauts. "Everything being done by the USA and the USSR in the field of space exploration is a contribution to world science," Sizov said.

"Every great endeavor involves sacrifices," Borman replied. "The Americans shared the Russians' triumphs and their grief when Vladimir Komarov and Yuri Gagarin died." The Leningraders joined their guests in a toast to successes in space exploration, without tragic sacrifices.

Alexander Sizov outlined the history of Leningrad and told about the extraordinary work done to restore the city after the blockade. "Although we build 50,000 apartments every year," he said, "the housing problem has not completely ended. Besides, we place great emphasis on the construction of kindergartens and sports stadiums. Our soccer team put in a very poor performance this year," he went on, "so although we compliment ourselves that Leningrad is a city of intellectuals, we started construction of a covered stadium in which soccer players could practice all year round."

"Don't pin too much hope on that," Borman replied. "After a covered stadium had been built in Houston, our baseball team began to play worse than ever," he said to general laughter.

Mrs. Borman asked for the floor. "Don't forget, Susan, that we have only one day in Leningrad left," Borman warned his wife. But his fears were groundless. Susan's short speech touched everyone by its sincerity and feminine spontaneity. Reminding those present that her husband owed his career as an astronaut to Russian space pioneers, Mrs. Borman said: "I've long wanted to meet Soviet people and tell them that they are fully responsible for my becoming the wife of an astronaut. The Russian cosmonauts' wives, my sisters, know only too well what this means. I propose a toast to the wives of spacemen, who share the equally heavy bur-

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den of anxieties and honors," Susan said to applause and exclamations of approval.

The mayor of Leningrad presented a memorial medal to Borman and photo albums of Leningrad to his wife and sons.

JULY 4, 1969

Frank Borman: "We all of us are children of the Earth, and we should dedicate ourselves to the improvement of life on it."

The Red Arrow express train took the guests back to Moscow. En route, the Bormans' Soviet companions congratulated them on the U.S. national holiday —Independence Day.

Their first visit that day was to the Moscow City Soviet. Deputy Mayor Vasili Isayev greeted Borman and his family on behalf of Mayor Promyslov, who was in Paris at the time.

Using a big illuminated map of Moscow, Isayev told the guests about the present and future of the city. Moscow's population is 6.7 million, including 610,000 college students and more than a million schoolchildren. The city transport carries 13 million passengers daily —four million of them on the subway. To keep the air clean, emphasis is placed on development of the subway and trolleybus networks. Every day more than 300 families move to newly built apartments.

Thanking Isayev for his hospitality, Borman dwelt on the similarity of problems faced by Soviet and American mayors—air pollution, housing, transport, schools. "The only means toward a fast solution of these problems and toward giving people better living conditions is a lasting peace on our small, but only, globe. We all of us are children of the Earth, and we should dedicate ourselves to the improvement of life on it," Borman said.

The second visit was to Nina Popova, chairman of the union of friendship societies. She told the guests briefly about the activities of her organization and then added: "The cause of peace is especially dear to women, to mothers. Women make up a half of mankind, and a better half at that. Men do not deny that, and therefore the influence of women in preserving peace should not be underestimated."

"If top-level conferences were held by women only," Susan Borman remarked, "all the problems would long have been solved."

The Bormans expressed a desire to invite a few Soviet young people to Houston for a month. "I promise not to make hippies out of them," Borman said with a smile. "That's not a bad idea," Nina Popova answered. "We, too, would be pleased to have young Americans here, and we promise we won't make Communists out of them."

In the evening the Bormans, at the invitation of the U.S. Ambassador, attended a reception in the American Embassy in honor of Independence Day.

JULY 5, 1969

Frank Borman: "I shall devote the remainder of my life to the improvement of relations between our two countries."

At 10 A.M. a motorcade pulled into Red Square and stopped in front of St. Basil's Cathedral.

Frank Borman and Susan Borman and their sons, Gherman and Tamara Titov, Konstantin Feoktistov, Victor Gorshkov and Dmitri Muravyov approached the Lenin Mausoleum. Borman's sons laid a wreath at its foot; the inscription on the ribbon reads: "To V. I. Lenin, the founder of the Soviet state, from U. S. astronaut Frank Borman."

The group then proceeded to the Kremlin wall, in which the ashes of our country's famous men lie buried. Borman laid red carnations below the marble plaque at the grave of Academician Sergei Korolyov, the chief designer of spaceships, while Susan Borman laid flowers at the plaques covering the ashes of Yuri Gagarin, the world's first cosmonaut, and Vladimir Komarov, the command pilot of spaceship Soyuz 1.

Borman stopped next at the Tomb of the Unknown Soldier. Here an eternal flame symbolizes the memory of the Soviet soldiers who gave their lives in the struggle against nazism. To a roll of drums, a wreath was laid by Borman, Titov and Feoktistov. Its inscription reads: "To the Soviet soldiers who fell in the battles for their country, from U. S. astronaut Frank Borman."

"It is a great honor," Borman said, "for me to pay homage to the memory of the valorous Soviet soldiers. In the minute of sorrow I thought about the incalculable sacrifices made by the Soviet people for our common victory." Lieutenant General Ivan Kolesnikov, commandant of Moscow, cordially thanked Borman for his tribute.

After a visit to the Armory and to the Diamond Fund of the USSR, the group made the rounds of the Kremlin: Cathedral Square, the Bell Tower of Ivan the Great, the Czar Cannon, the Czar Bell. The Kremlin gardeners presented bouquets of roses to Borman and his wife, and they had their photo taken near the oak tree planted by Yuri Gagarin on April 14, 1961—two days after his historic flight.

Stellar Town—where our cosmonauts and spaceship designers live—was the motorcade's next stop. This is a regular town, complete with homes, administrative buildings, a restaurant, polyclinic, school and movie theater. Situated on the edge of a forest, it is an excellent place for work and rest. Frank Borman, his wife and sons were the first foreign guests there.

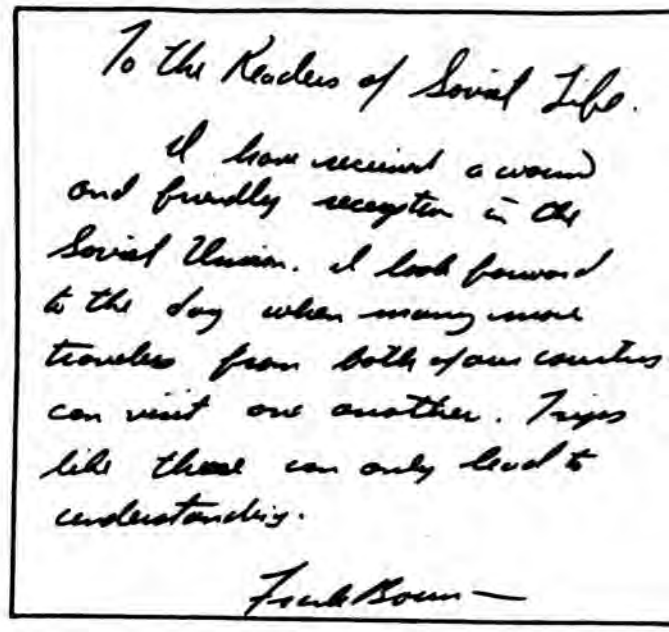
At the entrance to the town club the guests were greeted by Marshal of Aviation Pavel Kutakhov and Colonel General Nikolai Kamanin, along with Soviet cosmonauts and other inhabitants of Stellar Town.

The club was crowded. Marshals, cosmonauts and other guests were seated in the dais against the background of a big color portrait of the world't first cosmonaut, Yuri Gagarin, in a spacesuit.

Marshal of Aviation Pavel Kutakhov greeted the courageous American astronaut, recalling the stages of space exploration and the work of pioneer Soviet and American spacemen.

Frank Borman replied that it was a great honor for him to be the first American astronaut in Stellar Town. "The Soviet and American astronauts," he said, "are connected by bonds that transcend national limits." He conveyed greetings to the audience from American astronauts and expressed the hope that this day would open up a new era in the cooperation of Soviet and American

Continued on page 45



At the USSR Academy of Sciences discussion ranged from space research to Armenian brandy. Mstislav Keldysh, president of the academy, is at the left. Bottom: The Hermitage, Leningrad's world-famous art collection, was on the guests' itinerary.







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Moment of silence: Fred and Edwin Borman had just laid a wreath at the foot of the Lenin Mausoleum.

Edwin Borman stands in Red Square with his parents, a guide and Victor Gorshkov, vice president of the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries. In the background is a monument to Citizen Minin and Prince Pozharsky, who saved Russia from a foreign invasion in 1612.





A visit with the President of the Presidium of the USSR Supreme Soviet. Left to right: Konstantin Feoktistov, Victor Gorshkov, Mrs. Borman, President Podgorny, Borman, Tamara and Gherman Titov. Bottom left: Examining the architectural styles of two centuries, reflected in Petrodvorets's restored palaces. Below: At Science Town two hydrodynamics experts—Engineer Frank Borman and Academician Mikhail Lavrentyev—watch the operation of a water gun used for mining.

ORBITING THE USSR









Left: Gherman Titov comments on a notebook lost by an absent-minded journalist in the cabin of the airliner.

At Artek, the count largest Yo Pioneer camp, the g soon gras the fundamentals Russian quadr

Above: In Petrodvorets, Borman found, stairways as well as buildings and fountains are made of marble.

Right: A pleasant break in the schedule—tasting some of the Crimea's famous vintages at the Massandra winery.

Center right: Minutes before the takeoff, Susan Borman finds it's not so easy to part with new friends.







Vladimir Lenin
1870-1970

FROM TIME TO TIME the Soviet state is accused of totalitarianism. It is pictured as a country ruled by a "bureaucratic communist elite." And the democratic institutions that were evolved by the people in their revolutionary struggle for socialism, institutions that have full popular support, are depicted as authoritarian, based on the unlimited power of party leaders. Most frequently offered as confirmation is that Soviet democracy originated and maintained itself in power as a proletarian dictatorship putting down all dissent by force.

Dictatorship or Democracy?

The conclusion is then drawn that either you extend the benefits of democracy to everyone, in which case you can have no dictatorship, or you have a dictatorship of one class, in which case you can have no democracy.

Let us see whether this is so. Are these aspects so irreconcilable in our case?

In a society made up of classes with opposing interests, political authority, whatever democratic forms it may take, invariably serves the economically dominant class.

History demonstrates that graphically. In the ancient slave-owning society the state was a slaveowner dictatorship. It could not be otherwise. The wealthy needed a political machine to protect themselves from the slaves and the unpropertied, a machine to crush the slightest sign of slave unrest. The democracy expressed in elections and strife between political groupings was democracy only for the slaveowners.

The same was true under feudalism, with the privileged class being the feudal lords. Their dictatorship was directed against the dependent landless peasantry. Capitalism did not alter the situation; it only changed the owner class. The state was now a capitalist dictatorship opposed to the working class and toiling peasantry. Of course, the external attributes may have seemed more democratic: constitutions, general elections, parliaments, party opposition, etc. Nevertheless, the state is still there to protect the interests of the owner class. Hence, the much proclaimed democratic rights and liberties are in effect also the property of the owner class.

In that regard the proletarian dictatorship that took over from the capitalist dictatorship is no exception.

History shows that dictatorship and democracy can and do combine and condition each other. The state may be a dictatorship with respect to one set of classes and simultaneously be a democracy with respect to other classes. The crux of the matter is: Whose dictatorship? And democracy for whom?

The fundamental difference between the proletarian dictatorship and all preceding dictatorships was that political authority was vested in the working people, the overwhelming majority of the population. Therein lies its democratic substance, because as history shows, political authority had hitherto always been in the hands of the minority. The people, the demos, were always deprived of such authority.

Let us now examine the situation in the Soviet Union to see whether it really is the majority of the population who rule. In 1913 factory and office workers and peasants comprised 83.7 per cent of the population. The Revolution was made in their behalf. The working class, as the leader of the Socialist Revolution, drew support from the toiling peasantry and the intelligentsia. What brought these classes and social strata together was that they were all exploited in one way or another and that all lived by the fruit of their labor. That was the foundation of their class solidarity. Lenin regarded this alliance as the cornerstone of proletarian dictatorship.

It was only natural for the proletarian dictatorship to suppress those who tried to turn the clock back. But while the working class, the driving force of the Revolution, used dictatorial methods to fight its enemies, it never used these methods against the peasantry, the intelligentsia and its other allies. It led them to socialism by democratic means—persuasion, encouragement, example and organization. The peasantry, lower urban middle classes and intelligentsia had to see for themselves that socialist reforms were vital. That was why Lenin said that the proletarian state is *a new democracy* for the overwhelming majority of the population and *a new dictatorship* for the small reactionary minority against whom the proletarian dictatorship is directed.

When class antagonism was eliminated, the Soviet Union no longer needed a proletarian dictatorship. Those temporary restrictions imposed upon classes and segments hostile to socialism were no longer necessary—these classes and segments had gone. The state of the proletarian dictatorship was now transformed into a state of the whole people. It now expressed the interests of all classes and social strata; they were no longer divided by antagonisms. This is evident in the amicable cooperation between the working class and the peasantry and such social segments as technicians, engineers, scientists, teachers, student youth, in short, among all sections of Soviet society. Proletarian democracy, formerly extended only to the working class and its allies, was now socialist democracy for the whole population.

Socialism had created the prerequisite for that by making the means of production the property of the people. The socialization of the

DEMOCR
FOR WHOM IS IT MEANT?

By Alexander Kositsyn
Doctor of Science (Philosophy)

means of production and the public ownership of the press and cultural and educational institutions gave substance to socialist democracy. The fact that the means of production and the cultural institutions are controlled not by private owners but by the people, either directly or through their agents, means that in the Soviet state democracy extends beyond the purely political to economic and cultural areas.

Socialism and Democracy

How is this manifested concretely?

Communists *discriminate* between real and fictitious democracy. Democracy is not simply an official declaration; it is the actual rights given the working masses, the specific economic and cultural conditions guaranteed to them. The democratic ideal man has evolved in his age-old struggle for emancipation is *decisive* popular influence on state politics, the participation of *all* in government administration, the possibility for *everyone* to enjoy all the rights and freedoms.

To this end socialism has abolished all and every restriction or curtailment of rights because of racial or national affiliation, sex, religious creed and education. It has shifted the emphasis from a formal declaration of rights to tangible guarantees enabling the working people to enjoy their rights and liberties and really take part in the administration of the country's political and economic affairs.

The socialist ideal is for every man to govern. In other words, public self-government in the broadest sense. [As Lenin so aptly put it, every cook is to become a statesman.] When the Soviet state was in its infancy, Lenin noted in the draft for his article "The Immediate Tasks of Soviet Power": "The immediate aim is six hours of physical work plus four hours for administration of the state."

We are moving toward this ideal.

In what ways do Soviet people participate in running their government?

First through the Soviets. These broadly representative bodies hold all the strings of power. They are both lawmaking and executive bodies, from top to bottom. Hence, if we know how the people participate in

ACY: DEMOCRACY, THAT WORD OF ANCIENT GREEK ORIGIN CAN BE FOUND IN EVERY LANGUAGE. IT MEANS THE RULE OF THE PEOPLE, A SEMANTIC DEFINITION THAT NO ONE WOULD ARGUE. BUT ITS ACTUAL MEANING HAS CHANGED FUNDAMENTALLY OVER THE CENTURIES, AND TODAY IT MEANS MANY THINGS. WHAT I SHALL TALK ABOUT IS SOCIALIST DEMOCRACY, HOW IT IS UNDERSTOOD BY COMMUNISTS, HOW IT IS PRACTICED IN A SOCIALIST SOCIETY.

the work of these bodies, we can judge whether the system itself is really democratic.

The Soviets are democratic by the very way they are constituted. Their members are elected by universal, direct and equal suffrage by secret ballot. The electorate keeps growing. In 1917 less than 37 million voters elected the Soviets, in 1937 slightly more than 90 million, and in 1967 more than 146 million. Of course, over these years the population grew also. Let me give you some figures for the proportion of the electorate that went to the polls: 63.5 per cent in 1921, 72.1 per cent in 1931, 85 per cent in 1935, 96.8 per cent in 1937, and 99.96 per cent in 1967.

This voting activity testifies to the democratic character of the socialist system. When a person feels that he is really one of the masters of the country, not a pawn in the political chess game of various groups and parties, he is vitally interested in choosing his representatives. That is why he goes to hear his candidate at pre-election meetings. That is why there is no political apathy in the Soviet Union, none of the wholesale staying away from the polls so common in other countries.

It is interesting in this connection to hear what historians have to say. One of the ancient Greek states went so far as to pass a law which subjected citizens reluctant to participate in the political wrangle and to join any of the rival parties to harsh penalties. They could even be executed. Lawmakers thus tried to counteract political indifference. There are such laws even today. Some countries have made voting compulsory, to force people to the polls. The penalties are varied—criminal punishment in Belgium, moral sanctions in Italy, fines and even jail in Austria.

There is no need for any of this in the Soviet Union. The people themselves nominate their representatives to the Soviets at meetings called for the purpose. Hence they are interested in making the best choice possible. Take the composition of the USSR Supreme Soviet, the country's parliament. All its 1,443 deputies come from the working class, the farms or the intelligentsia. They are men and women from various walks of life: fitters, miners, building workers, steelworkers, shepherds, tractor drivers, engineers, agronomists, scientists, writers, actors, servicemen, and government, party and Young Communist League functionaries. Of the total, 646 are factory workers and collective farmers directly engaged in production. In the local Soviets, incidentally, such people comprise 64.3 per cent of the total.

Socialist democracy is spread by involving a growing number of people in civic affairs. The aim is to have everyone go through this school of government. More than two million deputies were elected to the local Soviets in the last election. At least a third of the membership of the Soviets is renewed every election. Of the 1,443 deputies in the present USSR Supreme Soviet 1,007, or 69.8 per cent, are serving their first term. In the Supreme Soviet of the Russian Federation 78.3 per cent of the deputies are first-termers. More than half the deputies elected to the local Soviets this year are new to the job.

However, there is more to it than simply electing representatives. What the deputy does is controlled by his constituents. He is required to account to them regularly. Before every new election the deputies and executive committees of the Soviets must make a full report of their stewardship to the electorate. Before this year's elections more than 205,000 such meetings were held, attended by 40 million people.

A deputy may be recalled by his constituents. Such cases, though rare, do happen. In 1967, for instance, 300 deputies in the local Soviets were recalled.

It is sometimes said that the Soviet electoral system is undemocratic because it is a one-candidate system. If the voter has no slate to choose from, how can it be called an election?

At first glance this seems to be a valid argument. But only at first glance. Actually, the people who say this are mechanically applying the standards of bourgeois countries with their class society to the conditions of the Soviet socialist state where classes have long since been eliminated. Our society is a political monolith. The economic life of our country is not based on private property but on public, socialist property. There is, therefore, no basis for a class struggle and, hence, no justification for having more than one candidate on the ticket.

The nomination of candidates is an extremely important stage in our elections. Since everybody is aware of the great responsibility involved in nomination, only the most able people become candidates. Of course, the casting of ballots is decisive. It is only in universal elections by secret ballot that a candidate receives legal approbation. He has no other way of becoming a deputy. If a candidate gets one ballot less than the required minimum, he will not be elected. It is true that there is only one candidate, but he is invariably really the people's candidate, their true representative.

I have been discussing the makeup of the Soviets in such detail because they are the basic organs of power. Still, however we enlarge their scope of activity—say by enlisting volunteers in their various committees—they cannot hope to involve everyone in government. Nevertheless, the spirit of democracy that permeates every aspect of life in our society motivates other forms of mass participation.

Thus, we have been holding public referendums to discuss bills of local and national importance for a long time now. An illustration is the discussion several months ago of the new Rules of the Agricultural Artel.

Further, hundreds of thousands of citizens serve as elected lay assessors in the People's Courts, where they hear cases on an equal footing with the judges.

The volunteer control and supervision groups set up at factories and construction sites in recent years provide another medium for public participation in government. The volunteers come from the trade unions, the party, the YCL and other public organizations at these enterprises. Their function?

It is no secret that we still have negligent managers and officials who abuse their powers. These volunteers keep an eye out for such neglect and abuse. Besides the control they exercise over factory and office executives, these groups teach people to think in nationwide terms; they make people feel responsible for the public interest.

The mass organizations—the trade unions and the YCL, to mention only two—play a major role in involving people in government. The trade unions now discharge such functions previously exercised by state agencies as labor protection, social insurance, and providing health-resort facilities. The Znaniye (Knowledge) Society disseminates political and scientific information. This process of transferring certain governmental functions to mass organizations is a promising preparation for future communist public self-government.

Mass organizations and state agencies are jointly responsible for a variety of state functions. The country's economic activity is one such instance. The trade unions, with a total membership of more than 86 million factory and office workers, constitute the biggest mass organization in the sphere of production. Through factory committees, shop meetings and the permanent production conferences, the trade unions actively influence the nation's economic development when they bargain collectively with management, pledge higher production quotas and define management's responsibility for improving working and living conditions.

Participation of public organizations in state affairs extends to the drafting of laws that affect labor. The All-Union Central Council of Trade Unions, the steering body of the Soviet trade unions, has submitted any number of recommendations for bills to the Committees on Legislative Proposals of the USSR Supreme Soviet. At the AUCCTU's initiative, for instance, the Presidium of the USSR Supreme Soviet passed a law on settling labor disputes. The USSR Supreme Soviet takes no legislative action on wages, the length of the workday, pensions, holidays for one or another category of workers and other such matters without first reaching agreement with the trade unions.

The trade unions and YCL may also initiate legislation. This obviously enlarges their sphere of influence.

The general public is now exercising functions which have always been considered the exclusive prerogative of the state. The maintenance of law and order is one such function. Factory and office workers, collective farmers and college students form volunteer public order squads to help the militia and the courts preserve order and prevent crime. These squads also educate the general public, especially young people.

An extension of that same idea is the comrades' courts at factories, offices and housing developments. Though with no authority to deprive the guilty of liberty, the moral impact of these courts of neighbors and shopmates is very considerable.

Other forms of volunteer participation include the street and housing committees and the club, library and pensioners councils.

As you see, the forms of community activity are many and varied, ranging from apartment house to state level. Taken together, they demonstrate that democracy in the Soviet Union is expanding in scope and depth—in scope by involving millions, in depth by bearing upon every aspect of community living.

One final aspect of socialist democracy.

While democratic participation is one keystone of the Soviet political system, another is centralized administration. The socialist state is structured on the principle of centralism, but of democratic centralism. That means, in essence, that centralized administration, the subordination of the local to the central government, is combined with the election and accountability of all state agencies to the electorate, the widest enlistment of the public in government, in short, independence at the grass roots. "We are for democratic centralism," Lenin wrote. "Centralism, understood as indeed democratic, presupposes for the first time in history tangible possibility for the full and unhampered development, not only of local specific features but also of local beginnings, local initiative, the diversity of ways, means and methods of movement to a common goal."

The proportion of centralism to democracy cannot be hard and fast. It is not the same at every stage of development of the socialist state. It will vary with economic, political and cultural development, with such factors as productivity, the internal and external political tasks of the period, the availability of trained specialists nationally and locally, the relations between the various peoples in the country. However, the sum and substance of socialist democracy—genuine power vested in the people—is the one factor that never changes.

THE

By Emmanuil Kazakevich

Emmanuil Kazakevich (1913-1962) was a noted Soviet novelist, poet, columnist, critic and translator. His best known works are the novel* Spring on the Oder *and the novelettes* Star *and* The Two in the Steppe. *In the novelette* The Blue Notebook *(1961), which was adapted for a film of the same name, he tried to give a picture of Lenin. In 1917 Lenin lived in hiding at Razliv, a railway station on the shore of the Gulf of Finland. Here in brief are the events which forced him to go underground.

July 1917 was a period of deep political crisis in Russia. The drawnout war, economic ruin, famine and escalating prices triggered off against the bourgeois Provisional Government spontaneous demonstrations which threatened to turn into a general armed uprising. The Bolshevik Party opposed such an uprising as premature. But the calls of Bolshevik speakers to stop the demonstrations were unavailing.

On July 4 (17) more than 500,000 workers and soldiers of Petrograd and its environs gathered in the city streets. The Provisional Government, the Socialist - Revolutionaries and the Mensheviks decided to use the occasion to smash the revolution. The troops they sent against the peaceful protesters opened fire, and the streets were bathed in blood. Mass arrests and searches began. Lenin's life was in danger, and he was compelled to go into hiding. Razliv, near Petrograd, was selected as the hiding place. Living there was the family of Nikolai Yemelyanov, a factory worker. With his assistance Lenin, in the guise of a farm hand doing seasonal mowing, lived in Razliv from July 12 (25) to August 21 (September 3).



Emmanuil Kazakevich

I

The pale northern sky was lit feebly by a misty moon. Two boats glided across the lake.

Lenin was seated in the stern of the first boat. He kept peering at the fading twilight of the distant bank. He was thinking that if it should turn out quiet and safe over there in the meadows across the lake, he would be able to send for his blue notebook and complete a very important pamphlet that had long been on his mind.

He looked hard into the misty distance but then reflected that it was no use, that he might just as well close his eyes. That thought had not occurred to him before. His eyes closed, he now heard only the creak of the oarlocks and the gurgling and splashing of the water. Only now did he feel that he was sitting in a rowboat under a boundless sky in which the mist-draped moon drifted slowly off to the left.

He had a sense of profound calm, the first time in many years. It was as though he had been running, running quickly for months on end, now up the mountains, panting, then down, barely able to hold himself back: Houses swept by, streets, towns, countries, crowds of people; an endless stream of words, shouted by different voices, and hot piercing whispers—words in Russian and foreign tongues, words scientific and simple, cruel words and gentle words, words that were precious and words that were hateful—they pressed on him, buffeted him like gusts of wind buffeting a runner. And now he had suddenly stopped and was sitting in a small rowboat gliding through dark water under a pale sky. The whirling words and the fleeting faces were cut short, the insistent hammer blows at his brain of well-nigh insoluble problems had ceased. The oarlocks creaked faintly, the water gurgled tranquilly.

Meanwhile the bank was drawing near. It would not have been altogether unexpected had the boat been met by a volley of rifle fire from the shore. Enough for one of the dozen people who knew of Lenin's whereabouts to have blabbed or in some way broken the rules of conspiracy, and Cadets and Cossacks would have been lying in ambush here, one behind each tree on the bank. Lenin recalled the face of a Cossack he had seen the previous Sunday near the Tavricheski Palace, a dumb eyeless face, as red as the stripes on his army breeches. And Lenin thought that perhaps that particular Cossack might be standing behind one of the trees on the shore, with those slits of eyes that saw no one, that could see only to take aim.

Lenin felt no fear and reflected that, in fact, Ulyanov's life was not very dear to him. That Ulyanov, born 47 years ago in Simbirsk, having read piles of books and covered mountains of sheets of paper with writing, was tired, suffered from insomnia and headaches. A swift and painless death did not frighten him; he was a man who had known, oh, so well, from the days of his childhood that he was a mortal particle of immortal nature. But the life of Lenin, the leader of the most revolutionary party in Russia—that had to be saved at all costs.

Evidently the revolution needed him to stay alive if its enemies were so anxious to see him dead. Naturally, preparing the revolution for long years, he had been preparing himself for it too. He had walked the streets of a good many cities in Europe, taken many a mountain path; he had swum many an hour in Europe's rivers and lakes, had skied and bicycled all for the revolution, in order not to break down physically when it came, in order to bear the strain when the hour for action struck. But he had rarely thought about the importance of his own person, and that recently. Only three months ago, when he returned to Petrograd after 10 years in emigration, had he fully realized what part he played in events.

With humorous surprise, as if recalling some prehistoric event, he remembered his passage across Finnish soil—the last stage of his sensational and daring return to Russia. He and his wife were worried at the time about how, in the event the train reached Petrograd at night, they would get to Anna Ilyinichna's place in Shirokaya Street. Would they find a cab that late at the Finland Station, especially on Easter Sunday? And when he saw the marines drawn up in a guard of honor on the platform and the mass of people in the station square, the armored cars at the doors of the royal entrance to the station, the army searchlights lighting up the red flags and a banner with the words "Welcome to Lenin," he felt in his heart how little aware he had been abroad of the scale of the revolution and how much had been done in emigration, all that routine, wearisome work which sometimes seemed to give such insignificant results, mere gnat bites on the enormous body of the imperial giant! How vividly that quiet, routine work was personified in the Petrograd worker Chugurin whom he caught sight of in the crowd at the station. Chugurin, who had been trained at the party school at Longjumeau near Paris. Chugurin's face was wet with tears.

Climbing to the top of an armored car, Lenin saw before him a sea of caps and army hats. He felt a little embarrassed about his own black foreign bowler, so incongruous on the armored car in this crowd of rebel workers. He took the bowler off as if discarding it once and for all, and hid it behind his back. Later he placed it on the seat next to the driver, a soldier from the armored car division. When the armored car moved along the streets of Petrograd, accompanied by thousands of people, Lenin remembered how worried he had been about the cab and reflected with some sadness that he would probably never ride in a cab again, that he would never be a "private person" again, that the hour had struck for him either to lead revolutionary Russia or die. In spite of all the excitement and enthusiasm of those days, this thought sometimes flashed through his mind.

Those days too he recalled the profound allegory of the *Odyssey:* After striving half his life to return to his native Ithaca, Odysseus fails to recognize it when he reaches its shores. He, Lenin, had recognized his Ithaca immediately but had not realized that he was its Odysseus.

During those days he became aware of it, aware that he was the man who had the power of feeling the pulse of the revolution with extraordinary sensitivity, feeling its ebb and flow, all its undercurrents. He had never before had such insight, he had never seen so clearly the inner springs that moved people, groups of people, meetings and organizations, he had never felt it so easy to distinguish what was really important from what was of minor importance.

Then too he observed his party comrades with particularly close attention and, doing justice to their experience, revolutionary zeal and various gifts—oratorical, literary and organizational—he came to the conclusion that several of them might have taken his place had he not been there. But since he was there, none of them could replace him. The Russian revolution did not depend on one man, but it had, evidently, pushed him forward in order to give the revolution the clearest and most consistent expression.

Lenin sat motionless in the rowboat, his eyes closed. Abandoning himself to the sensation of peace, he knew, of course, that it was purely imaginary and that at any moment the problems of the day would arise before him once more in all their gigantic stature. Another moment and again, with the inevitability of the circulation of the blood, there would rush to his heart the experiences and alarms of recent days; his deep-seated anxiety for the welfare of his wife Nadezhda Konstantinovna, his sisters, his party comrades; his reserved but no less strong affection for them—men and women of his party—some buoyant, others so ascetic, some fiery by temperament, others grave and severe, but all of them dedicated to the common cause and ready to defend it to their last breath. Again he felt a stab of pain from that razor-sharp sense of responsibility for

BLUE NOTEBOOK

the lives and souls of the workers, sailors and soldiers whose faces flashed before his mind's eye once more. He gently resisted the returning flood of difficult thoughts and intricate political calculations; he had to take a respite from those things, and he rested as much as he could, when he could. And when he could no longer resist them, he opened his eyes to meet them, the way a swimmer meets a wave with his chest.

When Lenin opened his eyes, he saw the motionless bushes quite close to him. A wall of low trees ran down to the water's edge. The prow of the boat scraped against the rushes. The bow drove into the shore.

* * *

Yemelyanov laid down the oars, sat still a moment, listening hard, then stood up, stepped ashore and pulled the boat up. The second boat came alongside. Its passengers began to whisper and bustle about. Nearby, a bittern called with an almost human voice.

Lenin reached for the attaché case that lay at his feet, put it under his arm and stepped ashore. Four men got out of the other boat. Yemelyanov cast a proprietary glance at the people, the boats and the lake and nodded to Lenin:

"Let's go."

He walked ahead, followed by Lenin. Zinoviev and Yemelyanov's four sons—Kolya, Sasha, Kondrati and Sergei—followed in Indian file. The earth felt damp underfoot and made little sucking noises under the pressure of their boots, but soon they were on firm ground. The air smelled of marsh and meadow grass.

Yemelyanov knew the path well. He had examined the area thoroughly before bringing Lenin; he had even visited it at night on one occasion. So he walked with assurance, waddling a little, pleased with himself for having planned everything so carefully and hoping that Lenin would notice. His right shoulder sagged a little under the weight of a sack of supplies. Though he was confident that there were no people in the vicinity, he had nevertheless been disappointed when Lenin refused to let him bring arms of any description. He had three rifles in store. Well greased, with several dozen cartridge clips, they lay in a dependable hiding place. But Lenin would not hear of it. He simply laughed, waved his hands and said:

"The time for rifles will come later. Keep them till then. They're greased, you say. That's good. They'll be needed. Not three, but three million. I'll agree to no less. Three won't save us. If there are any complications, they'll only make us ridiculous. Ridiculous people or ridiculous corpses. Today you and I are politicians, not soldiers."

Yemelyanov was an old party militant. Many rifles had passed through his hands in 1905 and after. He believed that arms always come in handy. With a revolver in his pocket or a rifle on his shoulder he felt more confident. He grumbled but complied.

Lenin had spent several days in the garret of Yemelyanov's shed, sleeping up there on the straw. He had talked freely to the children and to Yemelyanov's wife Nadezhda, had shared the family meals of potato soup, herring and millet porridge, and often helped to wash up afterward. In a word, he had shared their life. But Yemelyanov found it difficult to imagine even now that the man breathing evenly just behind him was Lenin. All Russia was talking about Lenin. You couldn't travel in a suburban train without hearing the name which three months ago was known only to a narrow circle of Bolshevik Party members, the most progressive workers and, of course, the active opponents of the Bolsheviks. With his arrival in Petrograd a new voice of astonishing power and sonority made itself heard in the discordant chorus of agitated Russia—growing and growing in volume until before long it drowned all other voices. It was like a challenging trumpet call among the shrieking of whistles, the whining of mouth organs and the tinkling of balalaikas.

A small clearing opened in the trees.

"Here's the place," said Yemelyanov.

Lenin stopped, looked around, saw a haystack with a little shanty propped up against its side, put his attaché case down on the grass, took a few steps into the darkness, out of sight, and then returning rubbed his hands together as though ready to start haymaking and asked:

"Are there any scythes and rakes?"

"Yes," said Yemelyanov. "You'll see them in the morning."

"We must have everything as if we were real haymakers."

"Of course we must. Shall I light a fire?"

"Wouldn't that be risky?"

"No. There isn't a soul around."

After a few moments' thought Lenin said:

"All the same, there's no need for a fire tonight. We'll sleep without one. We'll take a look around tomorrow and organize ourselves properly."

The older boys—Sasha, Kondrati and Sergei—set out to explore the neighborhood. The youngest, 13-year-old Kolya, stayed behind: He liked to be with grownups. Zinoviev sat on the grass and began to take off his boots. He had wrapped the foot bindings badly, and his left foot had blistered.

Lenin walked to the hut, looked in and then went inside.

"Wonderful!" he called out. "A splendid home. It's warm, soft and smells good." He stretched himself out on the hay and laughed quietly. Then he said: "Of course, it would be good to have a wireless telephone hidden in the hay to make contact with Petrograd. I rely on you, Nikolai Alexandrovich, to see to it that the newspapers are delivered punctually."

"Everything will be done," replied Yemelyanov, rattling pots and pans in the darkness. "Well, that's all. Everything's in its place. Well, lads, get started. Remember the way, so that if anything happens you can get back here any time. I'll lead you to the boat. It'll be your turn to bring the newspapers tomorrow morning, Sasha."

Lenin called from the hut:

"When you get to the shore, speak loudly and we'll listen. We'll test how clearly we can hear anything on the shore. Come in here, Kolya."

Kolya crawled into the hut and squatted down beside Lenin. Yemelyanov left with his elder sons. The rustling of their feet in the grass soon became inaudible. Lenin put his arm around the boy's shoulder and said:

"Listen."

Fifteen minutes passed. There was not a sound, neither of voices, nor of the oars splashing. Lenin nodded his satisfaction and asked Zinoviev:

"Shall we go to sleep, Grigori?"

"D'you mean to say you can sleep, Vladimir Ilyich?"

"I haven't the slightest doubt about it," Lenin replied, though he knew very well that he wouldn't sleep.

"I can't."

"That's bad. We're like two hunted animals now. We ought to fall asleep quickly and sleep with our ears open. What's the matter with your foot?"

Zinoviev answered plaintively in his high voice:

"Oh, all those bindings. I wrapped it clumsily and now I've got a blister."

"Take a philosophic view of your misfortune. A night under the old moon encourages philosophizing. That moon has seen everything there is to see. It's probably not the first time it's seen intellectuals hiding from the police and not knowing how to wrap a foot binding."

"You're always joking."

They heard footsteps.

"It's me," said Yemelyanov out of the darkness.

Lenin and Kolya crawled out of the hut and sat on the grass near the entrance. Yemelyanov squatted down nearby. Lenin asked:

"Did you talk there on the shore?"

"Yes."

"Loudly?"

"Yes."

"What did you talk about?"

Yemelyanov laughed. "I said: 'The Finns are probably asleep already. They'll be up and working at dawn tomorrow. They don't seem like bad people. Good haymakers, maybe.' Sasha replied, 'It's a pity they don't understand our kind of talk, though.' And more in that style."

"Well done, conspirators. So we can't be heard from the shore. That's good."

Zinoviev crawled into the hut with blankets and set about making his bed.

"Are we going to light a campfire in the morning, Dad?" Kolya asked.

"Yes, we'll light one," said Yemelyanov.

"Let me light it."

"All right. Now get into the hut and go to sleep. It's late."

"Can't I sit up a bit longer?"

"All you want to do is sit around. . . ."

Inside the hut Zinoviev fidgeted a little and fell silent.

"This place has one shortcoming," Lenin said quietly.

"The mosquitoes?" Yemelyanov spread out his hands guiltily. "Yes, there are a lot of mosquitoes, especially at night."

"No, it isn't that. It's not possible to work at night here; that's the trouble."

"Maybe that's for the best," said Yemelyanov. "You can rest."

"Smokers are lucky fellows," said Lenin after a short pause. "Good to sit in the dark on a night like this and smoke a pipe. Doing nothing but, all the same, having something to occupy oneself with."

"Did you give up smoking a long time ago?"

"I never smoked. Never had time and, besides, it's an unnecessary expense. We lived more than modestly; we had to count every kopeck. Besides, smoking is a distraction. It's not a serious passion, but it's a passion all the same. You get used to smoking, and when you haven't any tobacco you're in torture and can't work. And to find oneself without tobacco was very easy when we were in exile or living as emigrants. So I've lived a dull life, you see: I didn't smoke, didn't drink, had practically nothing to do with girls. . . ." He laughed. "But an interesting life, nevertheless, don't you think? And now it's a real adventure story. A hut in the depths of the forest across a lake! Terrible conspirators disguised as Finnish haymakers. Sleeping, Grigori? He's asleep. Tired. He needs a real rest; he's all worn out."

II

By midday it had grown very hot. The heat lay on the meadow like something solid and immovable, and even the shade, deceptively dark, could not cool it but was itself breathing heat.

Lizards, dragonflies and clouds of mosquitoes vainly sought refuge in the shade. Lenin broke off his work with increasing frequency and glanced at Yemelyanov who, stripped to the waist,

was mowing the grass not far away

Yemelyanov mowed only for conspiratorial effect, so that the haystack should grow higher as in real haymaking. But he worked with a will and competently. He really was a Jack-of-all-trades. Mowing here was difficult. Lenin had tried once and almost broken the scythe on the many small tree stumps concealed in the grass. When he stayed in the garret, Lenin had

German. At dawn, tormented by insomnia, he would crawl down from the garret and tiptoe past the sleeping children. They lay sprawled on the hay, rosy-cheeked and warm, and their even breathing and light children's snores touched him to the heart. He would have liked his wife to see them. At those moments he felt a twinge of envy for the Yemelyanovs, for the domestic cares and joys which he, the professional revolutionary,



A sketch of the shed in Razliv, on the shore of the Gulf of Finland, where he hid. Nikolai Yemelyanov, a party militant, owned it.

Lenin posed as a seasonal farmhand when he hid away from the police in the summer of 1917. He used this teapot, ax, rake and scythe.



enjoyed looking through the chinks watching Yemelyanov busy carpentering or digging, and his wife trying to keep track of two-year-old Gosha while she prepared dinner at the little brick hearth in the yard. Her smooth brow was covered with little drops of perspiration, her pretty face was flushed. It occurred to Lenin that these working people were real revolutionaries, ready to give their lives to free the working class. How uncomplainingly they had agreed to hide him in their house, at the risk of their lives! But the family is the family. And whatever lay in store for them, in the meantime they looked after their household affairs efficiently and willingly, watering the vegetable beds, preparing meals, repairing the earth wall around the house footing, raising their seven children without fuss, without admonitions or loud talk, by the example of their own honesty to themselves and others, by their constant truthfulness and steady work.

It was the first Russian working-class family in which Lenin had lived in recent years. He liked to hear children speak Russian. He had never spent much time with children, and those he had met were usually the sons and daughters of emigrants—they talked French or had been deprived of early in life and would remain deprived of forever.

When they awoke, the entire family set about doing something; each according to his strength worked for the common good.

Lenin liked this unhurried human activity of a large family. When he looked at them, at their work, as he was now watching Yemelyanov with his scythe, he was taken with a passion for physical work. He wanted to dig, plane wood, carry earth, wash floors. But he soon forgot this impulse when he got back to his articles and newspapers and was moved by other passions, by the yearnings and sufferings of the masses, the intrigues of the various parties.

When Kolya returned from his patrol along the shore of the lake, he found Lenin deep in his work again. Sitting near the hut, Kolya watched him for a long time, watched the way he wrote, reflected, stood up, walked a few paces up and down pondering, paying no attention to the fearful heat. Kolya wanted to invite him for a swim in the lake, but he did not dare to interrupt: His father would have been angry if he had.

The boy walked around an anthill and headed for the shore. He was a little tired of hiding, putting his ear to the ground, standing stock-still at every sound, imagining detectives and Cossacks all around. But when he reached the lake he again threw himself on the ground: He had seen a boat on the lake. His heart stopped beating. He was about to dash back to the hut but on second thought decided to stay and watch. Before long he was able to make out the figures of two men, and a minute later he recognized his brother Kondrati. Kondrati was at the oars. Kolya smiled but did not emerge from the shrubs, trying to forget that he had recognized his brother, making a serious face and watching the progress of the boat tensely. After all, this was something real, not an anthill. "They're coming this way," Kolya muttered anxiously. In the stern sat a man in a leather tunic. A leather tunic in this heat! Kolya wondered suspiciously. The rowboat ran into the reeds of the coast. Kolya recognized the man in the leather tunic, a worker named Vyacheslav Zof who had already visited Lenin several times.

Without showing himself to the newcomers, Kolya crept from the shore into the undergrowth and ran to the hut. His father had finished mowing and was busy with the fire. A pleasantly acrid smoke rose above it. Lenin and Zinoviev, barely visible in the dense osiers, were still writing. Kolya whistled like a bullfinch and hid in the bushes to feel more conspiratorial.

A minute later Zof and Kondrati reached the sun-flooded meadow. Lenin hurried to meet them but stopped, put his head on one side, took in Zof with a mocking smile and said with a wink at Zinoviev:

"Here's the very man, in his leather tunic. . . . Short, rather graceful and lithe, brilliant dark eyes." He laughed and walked forward toward Zof, who was somewhat taken aback and embarrassed by the strange words. "Have they never told you that you look like Napoleon in his youth? No? Well, thank goodness for that. Take off your tunic, Comrade Zof, you'll roast in it."

"I wore it because of the lining," said Zof with a shy grin.

He slipped it off, ripped open the lining and pulled out a heap of papers. A sudden gust of wind caught them. Lenin jumped for them. Zof helped him. Lenin laughed, and Zof, echoing him a little uncertainly, was surprised by Lenin's spontaneity and control in that grave period of history.

But when the papers were retrieved, Lenin frowned and asked quietly:

"So all our newspapers have been shut down. The Kronstadt *Golos Pravdy* too? How did the Kronstadt comrades let that happen?"

"*Proletarskoye Dyelo* is coming out in its place. The new paper came out the day after *Golos Pravdy* was closed. Ludmila Nikolayevna Stahl is editing it."

"Splendid," Lenin exclaimed and turned to Zinoviev. "You see, as you and I supposed, the Kronstadt comrades have not disgraced themselves." He walked across to his working place in the undergrowth and returned a moment later with his manuscripts. "Sit down, Comrade Zof. I'll explain it all to you. Here are two articles I have just written, 'The Political Situation' and 'Our Gratitude to Prince Lvov.' And here is another article that I wrote earlier, in Petrograd, about the Cadets' leaving the Ministry. Give these three articles to *Proletarskoye Dyelo*. I have changed the words 'armed rising' in the text to 'decisive struggle' not to give the authorities an excuse to ban the paper. It's the only one we have left now. I hope the workers will understand the expression for what it means. What's the circulation?"

"I don't know. Only the first copy has appeared thus far. I'll let you know more about it next time. Here are some letters. Nadezhda Konstantinovna and Comrade Lilina are in good health. They're sending a change of linen and some food with Tokareva tomorrow."

"Very good. I'll send another article with her; I'll try to finish it today. A very important article. Now I want to write a letter to the editor of *Proletarskoye Dyelo*—over our two signatures, Grigori. It's necessary for Kronstadt, and not only Kronstadt but Petrograd, to know that we're alive, that we're working and refuting that foul slander."

Lenin sat down to write. Zof watched the rapid, concentrated way he wrote. Gnats swarmed around him, dragonflies swooped down. He brushed them off with an absent-minded wave of his left hand. Sometimes a caterpillar would crawl across the sheet of paper and he would pick it up and without a glance toss it into the bushes.

Then he stood up and handed the letter to Zinoviev. While Zinoviev was reading it, Lenin went up to Zof. "Now I have another very important mission for you. Very important. In Stockholm—Nadezhda Konstantinovna knows just where—is one of my notebooks, a blue notebook with a stiff cover. The title on the cover is 'Marxism on the State.' I must have it as soon as possible. Remember: a blue notebook. This is ultraimportant. Will you remember?"

"I'll remember."

"Where are you going straight from here?"

"To Vyborg. I'm going to give Nadezhda Konstantinovna the articles. They'll be typed at once and in Kronstadt no later than tomorrow morning."

"Excellent. Tell Nadezhda Konstantinovna not to come here. She's certainly being followed. Don't forget the blue notebook."

III

All this time Yemelyanov's wife lived in a state of extraordinary exaltation. Whatever she was doing—washing dishes, making soup, laundering, weeding the vegetable beds, darning stockings, putting the children to bed—in her thoughts she always stood at the edge of her yard, near the pond connected by a rivulet with the lake of Sestroretsk Razliv. And she always saw herself in the same pose: her back to the lake, her arms flung out wide as though she was defending the lake, and the meadows beyond it where the hut stood, from the entire hostile world.

Her eyes became sharper, her ears more sensitive. She found herself noticing everything that went on around her, things she had overlooked before. She could distinguish by the footsteps whether it was a man or a woman walking on the other side of the lilac hedge. The voices that reached her from the neighbors and from the street held her attention now and provided her with food for reflection.

She discovered that she was now thinking less of her husband and sons, who were seriously threatened should the conspiracy fail. Her thoughts were only for Lenin and for the fact that his safety depended on her and her family.

These vague but strong feelings pierced her to the very heart. She could not have put them into words, but she felt that she stood in the very center of something great. With a mother's and woman's sensitivity she, more deeply than her husband, understood the significance of Lenin's personality. Yemelyanov knew very well what Lenin meant for the party, but he approached Lenin as a party member does his leader, as a soldier his commander. He thought more of the cause than of the individual.

That had been his wife's attitude too until she met Lenin. She had accepted the party's instructions to conceal its leader not indifferently but very practically, and immediately set about thinking where to put him, how to feed him, make his bed. She said what she thought about the deficiencies of the shed, which stood right up against the fence close to the street, about the political attitude of the neighbors, and so on. In short, she did everything she was accustomed to do as the Bolshevik wife of a party militant—a woman who during the 1905 Revolution had concealed arms and all kinds of people on the run, whose house had often been searched by the police, whose husband had been arrested and who was always prepared for the misfortunes and unpleasantnesses that came with her situation.

Her cool and practical attitude had changed soon after Lenin's arrival at their shed. He was not at all what she had expected. His simplicity and unusual tact, his lively and sociable nature surprised her. She had not expected a famous man to be so straightforward and artless. She was surprised by his great, almost hungry interest in her, in her husband, her children, her daily work; it was a very simple human interest in people and also something more, not so simple, not so everyday. True, it was aimed at her and at her children—Kolya, Sasha, Kondrati, Seryozha, Gosha, Lyova, and Tolya—at their little and commonplace needs, yet at the same time it was a personal interest in something much greater—in all working people, in their cares and experience of life. When they were talking about something with him, he would often ponder and say:

"That's interesting. . . .

"That's very important. . . .

"That must be considered. . . ."

It was clear that whenever he made an observation, however petty, about the lives and needs of the people, he weighed it on some special scale and then thought of how he could adapt what he had found out, what he had heard to a much greater scale. He was wholly with them, with the people he was living amongst, and at the same time he was not there at all, but with a vast number of other people whom he did not know personally. He was like the artist who admires a landscape or who looks at people just as another man does but who at the same time is using his imagination in a way that others do not, thinking: "I'm going to paint that." "I could draw that." "That might be useful for my idea."

Seeing how Nadezhda did much of her housework with one hand—for with the other she held to Gosha—Lenin shook his head and said, in passing:

"We must have kindergartens so that mothers can be freed to some extent from their daily chores."

Several times a day she had to wash the dishes. She did it mechanically and was surprised when Lenin said unexpectedly:

"We'll open inexpensive canteens so that women can do the big things in life, not only the little things."

This thoughtful interest in her housework flattered her, though she realized that it was not directed only toward her.

Once he said something that surprised her more than anything else:

"Only that revolution will succeed which is supported by women and in which women participate."

In the evening, after a hard day's work, he would climb down the ladder from the garret. Hearing his step on the ladder, the entire family would be transformed; the children's eyes would glow in anticipation of a lively, interesting talk.

Nadezhda, busy darning stockings, sweeping the floor or serving tea, listening to his talk with the little boys. Her mother's heart was delighted that the children were taking part in conversation which, she felt, would make them more intelligent and understanding. He told them about exile in Siberia, about the western capitals, about Switzerland's glaciers and lakes, about the lives of people in other lands.

The boys sat motionless, and Nadezhda tried to move as quietly as possible, smiling gently when all the others burst out laughing.

One evening he told them about his childhood and about his elder brother, who was hanged just 30 years before in Schlüsselburg Fortress. The boys looked very serious and Nadezhda, bent over her darning in the corner, wept a few silent tears.

Another time he jokingly read their futures. Kondrati, who not long before had been attracted to anarchism and had been visiting an anarchist club, would become a general in the future proletarian army or ". . . still better, an admiral in the revolutionary navy. The sea is close by, your father is almost a sailor, he knows the Gulf of Finland. Yes, you'll be an admiral." For Alexander, a bright, intelligent boy, his mother's right hand, Lenin foresaw the life of an engineer or even—"why not? The workers will be in charge"—of a manager of a huge factory that made agricultural implements "which we're certainly going to build. We'll make iron plows and tractors. Do you know what they are? They're American machines for working the land quickly and easily. They'll plow up all of Russia and tear down all the boundary lines." Kolya with his thoughtful and serene eyes would be a scientist and invent an airplane to fly to the Moon, and he would be the first to fly it there. As he spoke, Lenin turned to Nadezhda and assured her that education would be free for the children of the proletariat. "So," he added with a laugh, "there's no need for you to worry, Nadezhda Kondratyevna, it won't cost you anything."

"What about me?" asked 10-year-old Tolya shyly.

"And me?" asked six-year-old Lyova.

"I don't know what to do with you all," said Lenin, spreading out his hands comically. "You decide for yourselves."

He spoke in jest, but there was an undercurrent of seriousness. Watching him and the children with eyes full of tender warmth, Nadezhda was ready to pray to God, in whom she did not believe, to protect his health and well-being, and also, of course, the children sitting around him.

Sometimes Lenin became lost in thought. Then he fell silent, the line of his mouth grew firmer and his face changed almost beyond recognition. On those occasions everyone else grew silent and, as though by some secret agreement, took up his own task, read books or newspapers, or left the shed for the yard.

Zinoviev too was a well-educated, polite and talkative man, but he was rather absent-minded. He paid no attention to the children. Sometimes he would talk to Lenin in French or German in the presence of others—evidently he didn't want them to understand—but Lenin would get angry and always answer in Russian.

Once she got used to Lenin, Nadezhda found it hard to believe (for he was so amusing, lively and kind) that he was on the run, that thousands of people were roaming about search-

ing for him, and that he was protected from them by nothing more than the thin wall of the shed. And after she had read a newspaper which ran some crazy campaign against him, or overheard talk about Lenin in a shop, she would catch the children in the yard or in a corner and remind them for the hundredth time to keep their mouths shut and not betray the presence of the stranger in their midst by a word or a glance; they were to forget about the man in the garret. When they were together, she gave each of the children in turn a piercing, commanding look. She kept a steady, almost hostile eye on Kondrati in particular. Now she could not forgive him his bent for anarchism; earlier she had paid no attention to it. Kondrati, embarrassed by her intent look, would smile in confusion. And then, knowing how honest he was by nature and feeling ashamed of her suspicion, she would give him a quick pat on the cheek. She would gladly have gathered all seven children to her heart, for she did not know how otherwise she could convey to them her feeling of alarm and responsibility.

IV

Visitors to the haymakers' hut were rare. In Petrograd they were afraid of putting the police on Lenin's trail. Once every three or four days "Berg" would come. "Berg" was Alexander Schotman. With his chestnut beard, pince-nez and white Panama hat he looked a real gentleman, and this circumstance, in the interests of the conspiracy, was very much to Nadezhda's liking. Even more infrequent were Zof's visits. Sometimes a taciturn woman in widow's weeds would sidle quietly up to the Yemelyanovs' gate and leave a loaf of bread or a change of linen.

These visitors always arrived and left under cover of darkness.

Schotman, with his gold pince-nez, his walking-stick and a black hat—as like as two peas to a holidaymaker out for a stroll—arrived one evening and saw Lenin seriously disturbed by the latest news. Lenin sat by the fire. The light of the flames darted uneasily across his face. The newspapers received that morning, heavily scored with red and blue pencil, lay scattered around as though there had been a battle. Except for these papers tossed around so angrily the scene, the blazing fire with the simmering kettle and the three men and a boy sitting around it, would have looked perfectly peaceful.

For conspiracy's sake Schotman silently picked up the papers and made a bundle of them. Then he sat down near the fire and began to talk. Usually so composed and reserved, Schotman was very excited today: The newspapers had published an account of the Bolshevik congress now in progress and had quoted Sverdlov's statement that Lenin, unable to attend in person, was not far away and was directing the proceedings unseen. As a result the state prosecutor's office and counterintelligence were bustling about. It was rumored in Petrograd that they were preparing to interrogate the congress about Lenin's whereabouts, and in the event of a refusal to answer, they would charge the congress participants with harboring a criminal.

Schotman said, thumbing through the papers he had brought with him,

"Look, here's a notebook Nadezhda Konstantinovna sent you."

For a moment Lenin froze with surprise, then he slowly put down his mug and took the notebook. Yes, it was the blue notebook, the very one. He held it in his hands, turned the pages rapidly, snapped it shut and put it down at his side, though not for long. A moment later he picked it up again. He read it, closed it, opened it again thoughtfully, resumed his reading. He vaguely recalled that once he had opened and shut another notebook with the same intense happiness, which then too he had concealed from those around him. Yes, that was more than 20 years ago. But that notebook had been yellow, not blue, a hectographed edition of the pamphlet *What the "Friends of the People" Are and How They Fight the Social-Democrats,* his first major work in print.

Lenin even lost his usual interest in the newspapers; he did not examine the evening papers Schotman had brought. He kept picking up the notebook, turning over the pages, grunting his satisfaction, and from time to time stealing sly glances at Zinoviev and Schotman, who were discussing the situation in Petrograd.

Schotman said with a laugh:

"In the Petrograd Committee yesterday Lashevich said, 'You'll see, Lenin will be prime minister in September!' "

Lenin, turning over the pages of the blue notebook and sipping hot water, said calmly:

"Nothing surprising about that."

Schotman smiled with some embarrassment. Lenin looked at him hard and putting his mug down on the grass, said:

"Surely you can see that we are advancing full steam ahead to the second revolution, which is going to found a new state of the working class and the half-proletariat of the countryside?"

And without waiting for an answer he plunged back into his notebook.

Yemelyanov silently tossed some twigs on the fire so that Lenin could see more clearly.

* * *

Reading his extracts from Marx and Engels gave Lenin a thrill comparable, perhaps, only to the one he had felt on April 3 at the Finland Station when he caught sight of the Petrograd proletariat on the square outside, with their guns and red flags. He almost forgot where he was, he forgot about the Sestroretsk Razliv, about the comrades sitting beside him, about the underground. He imagined himself standing again on the armored car with millions of eyes no longer glowing with joy but severe eyes, looking at him not with triumph and hope but with the question: "What are you going to tell us now? What can you do for us? Are you going to pull us out of our poverty and blindness? Where are we to go? Tell us, if you know."

When in the library of the Museum Gesellschaft and in the reading room at 31 Seilergraben in Zurich he had copied out extracts from Marx's and Engels' works on the state and the dictatorship of the proletariat, he had fully realized their significance. He had intended to write a commentary on them, to strip off the scales that petty bourgeois socialists had covered them with and publish them in the fourth issue of *Sbornik Sotsial-Demokrata,* which he had been planning since 1916 but failed to publish for lack of funds. But in those days they had only been reflections in the quietness of a library in a calm Swiss town; they had been addressed directly only to a few hundred people, most of whom he knew personally by name and party alias. They were intended mainly for groups of underground workers in Russia, groups of exiles in the Turukhan and Narym Regions, groups of emigrants in Paris, Berne, Geneva, New York, London and Vienna. This work had, to tell the truth, been conceived as a reply to the erroneous opinions of Bukharin and some other Russian Marxists, as a rejection of the false petty bourgeois illusions of Kautsky and some of the fat German Social-Democrats. Now all those plans looked small and laughable, like his anxiety about finding a cab in April 1917, like a foreign bowler hat amidst the caps of a crowd of workingmen. Now the extracts and the conclusions he drew from them were no less important for the millions than bread, salt, calico.

It was just this change of scale of the same idea that shook him so. It was the feeling a man might have experienced when he made the first wheel, had he been shown in his own lifetime what it would lead to and on what a scale his original rough handiwork would develop.

Naturally, Lenin brushed aside those grandiloquent comparisons and pulled a preoccupied and practical face as he glanced at his comrades out of the corner of his eye. Had they noticed his "moment of rapture," so inappropriate for a practical revolutionary? But they went on sitting as before beside the fire, looking as if nothing out of the ordinary had happened. As a precaution he tossed them a few deliberately commonplace words:

"It's a useful notebook, very useful."

He did not like high-flown language; he was suspicious of it, always tried to avoid using it.

All the same, he was delighted. He thought of Marx and Engels as he did of his closest friends, even of his relatives; he imagined that both the old men were sitting behind him and talking wisely and benevolently, using words of fathomless depth and Promethean daring which flooded his heart with a warm, turbulent, youthful gaiety.

Lenin spent the following days at work on his pamphlet. He barely noticed his companions; he ate even less than usual, and lost all his early morning impatience for the newspapers.

When he had sketched out his plan of work, Lenin told Zinoviev its contents. They sat together near the hut. Yemelyanov had gone off to do something on the other shore, and Kolya was probably in the forest gathering mushrooms for supper.

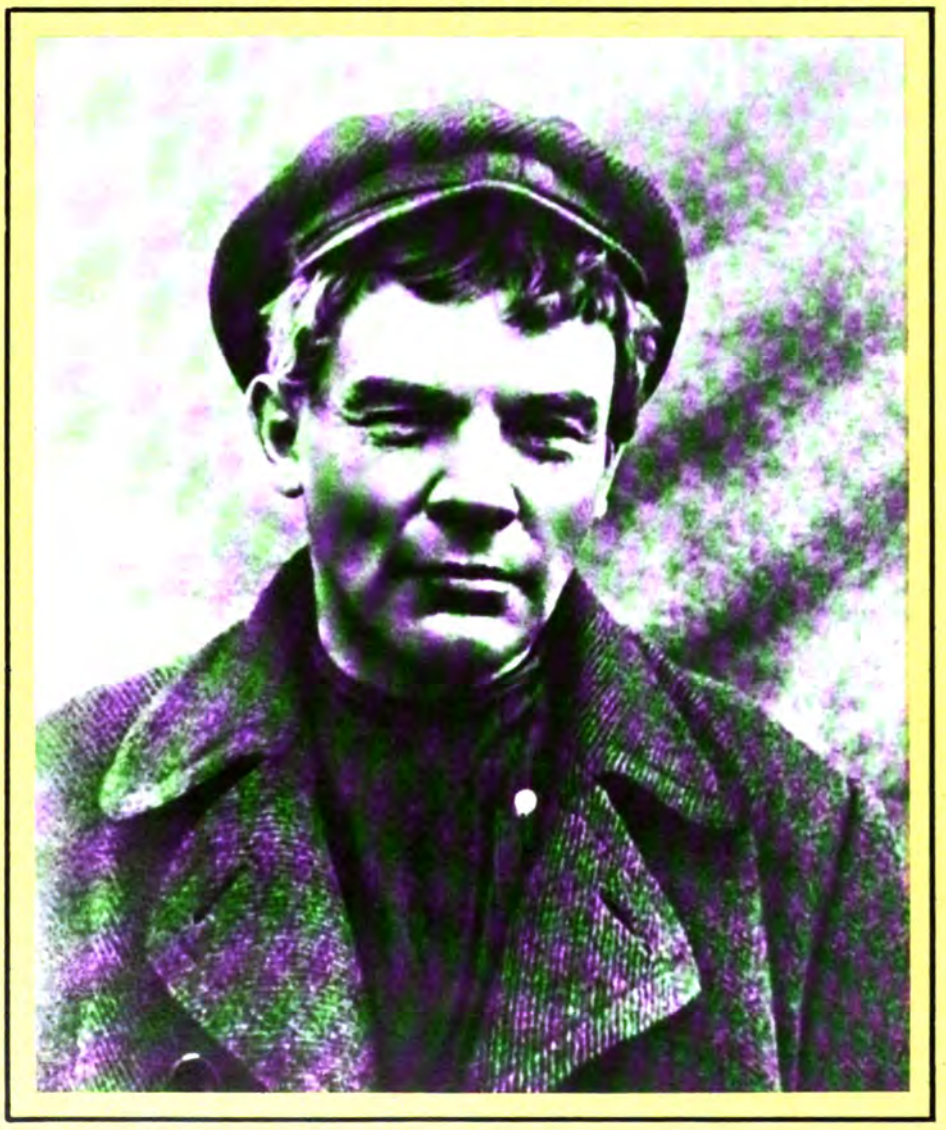
"It will be a useful thing," said Lenin, walking up and down in his customary way. "A clear program of action for the first period after the seizure of power, yes, and perhaps for more than the first period. It deals with the character, even, if you like, with the style of life of a proletarian state, a state of the Commune type, but at the same time it isn't at all a utopian plan, since we have a pretty clear picture of the difficulties and complications of building a socialist society with the human material we see before us. . . . It will be a state of the dictatorship of the proletariat which, generally speaking, will have two sides: democracy for the vast majority of the people and merciless crushing of the oppressors of the people and, together with them, such unconscious but stubborn 'admirers' of capitalism as loafers, fine gentlemen, swindlers, hooligans and arch reactionaries. . . . It will be a state without precedent, one which will aim at its own disappearance. It will disappear when people are so used to observing the basic rules of society and when their work has become so productive that they will work voluntarily according to their abilities. It will be a state where there will be no place for highly paid officials, where all officials will be elected and can be replaced at any time, where the functions of audit and control will be fulfilled by the majority of the people; and as the armed workers are not sentimental intellectuals and won't allow themselves to be made fun of, evasions of the general audit and control will be exceptionally rare, and the observance of the rules of human society will become a habit. This pamphlet will declare war on two equally dangerous forms of political blindness: reckless anarchistic long-sightedness, that is, the incapacity and unwillingness to see actual reality, and cowardly opportunistic shortsightedness, the incapacity and unwillingness to see the aim, the perspective, the future. Yes, Engels was right. The state is an evil which the proletariat inherits after its victory. The victorious proletariat will cut away the worst features of that evil, but it will have to preserve it until a new generation which has grown up in free social conditions is in a position to fling overboard all that trash of the state. . . . My pamphlet will, in addition, prove that there is no need to stick to the old idea that it is for the French to start and for the Germans to consolidate the results. . . . Russia will be the one to make the start. That isn't messianic, it's historical necessity. I shall call my pamphlet 'The State and Revolution.' "

ANXIOUS DAYS IN THE UNDERGROUND



This reads: Konstantin Petrovich Ivanov is permitted to enter the Sestroretsk Small Arms Factory magazine workshop till January 1, 1918.

When he had to go underground for a time, Lenin, photographed in wig and makeup, took the name Konstantin Ivanov for the identity card.



BOURGEOIS AND PROLETARIAN DEMOCRACY

This is a chapter from Lenin's* The Proletarian Revolution and the Renegade Kautsky *written in the fall of 1918 and published as a separate book in Moscow immediately thereafter.

It was Lenin's direct answer to the pamphlet* The Dictatorship of the Proletariat *(Vienna, 1918) written by Karl Kautsky (1854-1938), a German philosopher, historian and politician. One of the leading advocates of opportunism in the international workers movement, he crudely distorted the principles advanced by Marx and Engels on such basic questions as the nature of the dictatorship of the proletariat and the role of the working class in organizing the socialist state. At the same time Kautsky slandered Soviet power in Russia.

In the first chapter of his book Lenin quotes some of Kautsky's unscientific and anti-Marxist statements on dictatorship and democracy, including his affirmation of "pure democracy" and continues:

THE QUESTION which Kautsky has so shamelessly muddled really stands as follows.

If we are not to mock at common sense and history, it is obvious that we cannot speak of "pure democracy" as long as different *classes* exist; we can only speak of *class* democracy. (Let us say in parenthesis that "pure democracy" is not only an *ignorant* phrase, revealing a lack of understanding both of the class struggle and of the nature of the state, but also a thrice-empty phrase, since in communist society democracy will *wither away* in the process of changing and becoming a habit, but will never be "pure" democracy.)

"Pure democracy" is the mendacious phrase of a liberal who wants to fool the workers. History knows of bourgeois democracy which takes the place of feudalism, and of proletarian democracy which takes the place of bourgeois democracy.

When Kautsky devotes dozens of pages to "proving" the truth that bourgeois democracy is progressive compared with medievalism, and that the proletariat must unfailingly utilize it in its struggle against the bourgeoisie, that in fact is just liberal twaddle intended to fool the workers. This is a truism, not only for educated Germany, but also for uneducated Russia. Kautsky is simply throwing "learned" dust in the eyes of the workers when, with a pompous mien, he talks about Weitling and the Jesuits of Paraguay and many other things, *in order to avoid* telling about the *bourgeois* essence of modern, i.e., *capitalist,* democracy.

Kautsky takes from Marxism what is acceptable to the liberals, to the bourgeoisie (the criticism of the Middle Ages, and the progressive historical role of capitalism in general and of capitalist democracy in particular), and discards, passes over in silence, glosses over all that in Marxism which is *unacceptable* to the bourgeoisie (the revolutionary violence of the proletariat against the bourgeoisie for the latter's destruction). That is why Kautsky, by virtue of his objective position and irrespective of what his subjective convictions may be, inevitably proves to be a lackey of the bourgeoisie.

Bourgeois democracy, although a great historical advance in comparison with medievalism, always remains, and under capitalism is bound to remain, restricted, truncated, false and hypocritical, a paradise for the rich and a snare and a deception for the exploited, for the poor. It is this truth, which forms a most essential part of Marx's teaching, that Kautsky the "Marxist" has failed to understand. On this—the fundamental issue—Kautsky offers "delights" for the bourgeoisie instead of a scientific criticism of those conditions which make every bourgeois democracy a democracy for the rich.

Let us first remind the most learned Mr. Kautsky of the theoretical propositions of Marx and Engels which that pedant has so disgracefully "forgotten" (to please the bourgeoisie), and then explain the matter as popularly as possible.

Not only the ancient and feudal, but also "the modern representative state is an instrument of exploitation of wage labor by capital" (Engels, in his work on the state).[1] "As, therefore, the state is only a transitional institution which is used in the struggle, in the revolution, to hold down one's adversaries by force, it is sheer nonsense to speak of a free people's state; so long as the proletariat still uses the state, it does not use it in the interest of freedom but in order to hold down its adversaries, and as soon as it becomes possible to speak of freedom, the state as such ceases to exist" (Engels, in his letter to Bebel, March 28, 1875). "In reality, the state is nothing but a machine for the oppression of one class by another and, indeed, in the democratic republic no less than in the monarchy" (Engels, introduction to *The Civil War in France* by Marx). Universal suffrage is "the gauge of the maturity of the working class. *It cannot and never will be anything more in the present-day state.*" (Engels, in his work on the state. Mr. Kautsky very tediously chews the cud over the first part of this proposition, which is acceptable to the bourgeoisie. But the second part, which we have italicized and which is not acceptable to the bourgeoisie, the renegade Kautsky passes over in silence!) "The Commune was to be a working, not a parliamentary, body, executive and legislative at the same time. . . . Instead of deciding once in three or six years which member of the ruling class was to represent and suppress (*ver- und zertreten*) the people in Parliament, universal suffrage was to serve the people, constituted in Communes, as individual suffrage serves every other employer in the search for workers and managers in his business" (Marx, in his work on the Paris Commune,[2] *The Civil War in France).*

Every one of these propositions, which are excellently known to the most learned Mr. Kautsky, is a slap in his face and lays bare his apostasy. Nowhere in his pamphlet does Kautsky reveal the slightest understanding of these truths. His whole pamphlet is a sheer mockery of Marxism!

Take the fundamental laws of modern states, take their administration, take the right of assembly, freedom of the press, or "equality of all citizens before the law," and you will see at every step evidence of the hypocrisy of bourgeois democracy with which every honest and class-conscious worker is familiar. There is not a single state, however democratic, which has no loopholes or reservations in its constitution guaranteeing the bourgeoisie the possibility of dispatching troops against the workers, of proclaiming martial law, and so forth, in case of a "violation of public order," and actually in case the exploited class "violates" its position of slavery and tries to behave in a nonslavish manner. Kautsky shamelessly embellishes bourgeois democracy and omits to mention, for instance, how the most democratic and republican bourgeoisie in America or Switzerland deal with workers on strike.

The wise and learned Kautsky keeps silent about these things! That learned politician does not realize that to remain silent on this matter is despicable. He prefers to tell the workers nursery tales of the kind that democracy means "protecting the minority." It is incredible, but it is a fact! In the summer of this year of our Lord 1918, in the fifth year of the world imperialist slaughter[3] and the strangulation of internationalist minorities (i.e., those who have not despicably betrayed socialism, like the Renaudels and Longuets, the Scheidemanns and Kautskys, the Hendersons and Webbs et al.) in all "democracies" of the world, the learned Mr. Kautsky sweetly, very sweetly, sings the praises of "protection of the minority." Those who are interested may read this on page 15 of Kautsky's pamphlet. And on page 16 this learned . . . individual tells you about the Whigs and Tories in England in the eighteenth century!

What wonderful erudition! What refined servility to the bourgeoisie! What civilized belly-crawling before the capitalists and bootlicking! If I were Krupp or Scheidemann, or Clemenceau or Renaudel, I would pay Mr. Kautsky millions, reward him with Judas kisses, praise him before the workers and urge "socialist unity" with "honorable" men like him. To write pamphlets against the dictatorship of the proletariat, to talk about the Whigs and Tories in England in the eighteenth century, to assert that democracy means "protecting the

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[1] *The Origin of the Family, Private Property and the State.*

[2] The uprising of Paris workers in the spring of 1871.

[3] The First World War.

minority," and remain silent about *pogroms* against internationalists in the "democratic" republic of America—is this not rendering lackey service to the bourgeoisie?

The learned Mr. Kautsky has "forgotten"—accidentally forgotten, probably—a "trifle," namely, that the ruling party in a bourgeois democracy extends the protection of the minority only to another *bourgeois* party, while on all *serious, profound and fundamental* issues, the proletariat gets martial law or pogroms instead of the "protection of the minority." *The more highly developed a democracy is, the more imminent are pogroms or civil war in connection with any profound political divergence which is dangerous to the bourgeoisie.* The learned Mr. Kautsky could have studied this "law" of bourgeois democracy in connection with the Dreyfus case[4] in republican France, with the lynching of Negroes and internationalists in the democratic republic of America, with the case of Ireland and Ulster in democratic Britain,[5] with the baiting of the Bolsheviks and the staging of pogroms against them in April 1917 in the democratic republic of Russia. I have purposely chosen examples not only from wartime but also from prewar time, peacetime. But mealy-mouthed Mr. Kautsky prefers to shut his eyes to these facts of the twentieth century, and instead to tell the workers wonderfully new, remarkably interesting, unusually edifying and incredibly important things about the Whigs and Tories of the eighteenth century!

Take the bourgeois parliament. Can it be that the learned Kautsky has never heard that the *more highly* democracy is developed, the *more* the bourgeois parliaments are subjected by the stock exchange and the bankers? This does not mean that we must not make use of bourgeois parliaments (the Bolsheviks made better use of them than probably any other party in the world, for in 1912-14 we won the entire workers' curia in the Fourth Duma). But it does mean that only a liberal can forget the *historical limitations and conventional nature* of the bourgeois parliamentary system as Kautsky does. Even in the most democratic bourgeois state the oppressed people at every step encounter the crying contradiction between the *formal* equality proclaimed by the "democracy" of the capitalist and the thousands of *real* limitations and subterfuges which turn the proletarians into *wage slaves.* It is precisely this contradiction that is opening the eyes of the people to the rottenness, mendacity and hypocrisy of capitalism. It is this contradiction that the agitators and propagandists of socialism are constantly exposing to the people, *in order to prepare* them for revolution! And now that the era of revolution *has begun,* Kautsky turns his back upon it and begins to extol the charms of moribund bourgeois democracy.

Proletarian democracy, of which Soviet government is one of the forms, has brought a development and expansion of democracy unprecedented in the world, precisely for the vast majority of the population, for the exploited and working people. To write a whole pamphlet about democracy, as Kautsky did, in which two pages are devoted to dictatorship and dozens to "pure democracy" and *fail to notice* this fact, means completely distorting the subject in liberal fashion.

Take foreign policy. In no bourgeois state, not even in the most democratic, is it conducted openly. The people are deceived everywhere, and in democratic France, Switzerland, America and Britain this is done on an incomparably wider scale and in an incomparably subtler manner than in other countries. The Soviet government has torn the veil of mystery from foreign policy in a revolutionary manner. Kautsky has not noticed this, he keeps silent about it, although in the era of predatory wars and secret treaties for the "division of spheres of influence" (i.e., for the partition of the world among the capitalist bandits) this is of *cardinal* importance, for on it depends the question of peace, the life and death of tens of millions of people.

Take the organization of the state. Kautsky picks at all manner of "trifles," down to the argument that under the Soviet Constitution elections are "indirect,"[6] but he misses the point. He fails to see the *class* nature of the state apparatus, of the machinery of state. Under bourgeois democracy the capitalists, by thousands of tricks —which are the more artful and effective the more "pure" democracy is developed—*drive* the people away from administrative work, from freedom of the press, freedom of assembly, etc. The Soviet government is the *first* in the world (or strictly speaking, the second, because the Paris Commune began to do the same thing) to *enlist* the people, specifically the *exploited* people, in the work of administration. The working people are *barred* from participation in bourgeois parliaments (which *never decide* important questions under bourgeois democracy; they are decided by the stock exchange and the banks) by thousands of obstacles, and the workers know and feel, see and realize perfectly well that the bourgeois parliaments are institutions *alien* to them, *instruments for the oppression* of the workers by the bourgeoisie, institutions of a hostile class, of the exploiting minority.

The Soviets are the direct organization of the working and exploited people themselves that *helps* them organize and administer their own state in every possible way. And in this they are the vanguard of the working people and exploited, the urban proletariat, which enjoys the advantage of being best united by the large enterprises; it is easier for it than for all others to elect and exercise control over those elected. The Soviet form of organization automatically *helps* unite all the working and exploited people around their vanguard, the proletariat. The old bourgeois apparatus—the bureaucracy, the privileges of wealth, of bourgeois education, of social connections, etc. (these real privileges are the more varied, the more highly bourgeois democracy is developed)—all this disappears under the Soviet form of organization. Freedom of the press ceases to be hypocrisy, because the printing plants and stocks of paper are taken away from the bourgeoisie. The same thing applies to the best buildings, the palaces, the mansions and manor houses. Soviet power took thousands upon thousands of these best buildings from the exploiters at one stroke, and in this way made the right of assembly—without which democracy is a fraud—*a million times* more democratic for the people. Indirect elections to nonlocal Soviets make it easier to hold congresses of Soviets; they make the *entire* apparatus less costly, more flexible, more accessible to the workers and peasants at a time when life is seething and it is necessary to be able very quickly to recall one's local deputy or to delegate him to a general congress of Soviets.

Proletarian democracy is a *million times* more democratic than any bourgeois democracy; Soviet power is a million times more democratic than the most democratic bourgeois republic.

To fail to see this, one must either deliberately serve the bourgeoisie or be politically as dead as a doornail, unable to see real life from behind the dusty pages of bourgeois books, be thoroughly imbued with bourgeois-democratic prejudices, and thereby objectively convert oneself into a lackey of the bourgeoisie.

To fail to see this, one must be incapable of *presenting the question* from the point of view of the *oppresssed* classes:

Is there a single country in the world, even among the most democratic bourgeois countries, in which the *average rank-and-file worker,* the average rank-and-file *farm laborer,* or village semi-proletarian generally (i.e., the representative of the oppressed, of the overwhelming majority of the population), enjoys anything approaching such *liberty* of holding meetings in the best buildings, such *liberty* of using the largest printing plants and biggest stocks of paper to express his ideas and to defend his interests, such *liberty* of promoting men and women of his own class to administer and to "put into shape" the state, as in Soviet Russia?

It is ridiculous to think that Mr. Kautsky could find in any country even one out of a thousand well-informed workers or farm laborers who would have any doubts as to the reply. Instinctively, from hearing fragments of admissions of the truth in the bourgeois press, the workers of the whole world sympathize with the Soviet Republic precisely because they regard it as a *proletarian* democracy, *a democracy for the poor,* and not a democracy for the rich that every bourgeois democracy, even the best, actually is.

We are governed (and our state is "put into shape") by bourgeois bureaucrats, by bourgeois members of parliament, by bourgeois judges—such is the simple, obvious and indisputable truth which tens and hundreds of millions of people belonging to the oppressed classes in all bourgeois countries, including the most democratic, know from their own experience, feel and realize every day.

In Russia, however, the bureaucratic machine has been completely smashed, razed to the ground; the old judges have all been sent packing, the bourgeois parliament has been dispersed—and *far more accessible* representation has been given to the workers and peasants; *their* Soviets have replaced the bureaucrats, or *their* Soviets have been put in control of the bureaucrats, and *their* Soviets have been authorized to elect the judges. This fact alone is enough for all the oppressed classes to recognize that Soviet power, i.e., the present form of the dictatorship of the proletariat, is a million times more democratic than the most democratic bourgeois republic.

Kautsky does not understand this truth, which is so clear and obvious to every worker, because he has "forgotten," "unlearned" to put the question: democracy *for which class?* He argues from the point of view of "pure" (i.e., non-class? or above-class?) democracy. He argues like Shylock: my "pound of flesh" and nothing else. Equality for all citizens—otherwise there is no democracy.

We must ask the learned Kautsky, the "Marxist" and "socialist" Kautsky:

Can there be equality between the exploited and the exploiters?

It is monstrous, it is incredible that such a question should have to be put in discussing a book written by the ideological leader of the Second International. But "having put your hand to the plow, don't look back," and having undertaken to write about Kautsky, I must explain to the learned man why there can be no equality between the exploiters and the exploited.

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[4] The provocative trial staged in 1894 by France's reactionary circles against Alfred Dreyfus, an officer on the French General Staff and a Jew by nationality. He was framed on a charge of high treason and sentenced to life imprisonment. It was not until 1906 that the court of appeals ruled Dreyfus not guilty.

[5] The reference is to the cruel suppression, by the English authorities, of the Irish uprising of 1916.

[6] Indirect, stage-by-stage elections to the Soviets were contemplated by the 1918 and 1924 Soviet Constitutions. The 1936 Constitution, which is still in force, established direct elections to all Soviets, including the Supreme Soviet of the USSR. Since that time the quota of representation for the Soviets has been the same for the urban and rural population. These changes, testifying to the continuing development of Soviet democracy, are possible because the USSR is a socialist country.



Pyotr Otsup is an old photographer who took pictures of Lenin several times. He made numerous photographs reflecting the first years of Soviet power. Otsup has compiled several albums of photographs illustrating the history of the Revolution and the Red Army and the creation of the Soviet republics.

HOW I PHOTOGRAPHED LENIN

BY PYOTR OTSUP

I SAW Vladimir Ilyich for the first time on October 28 (November 10) 1917. He was walking fast down the corridor of the Smolny Palace with a coat over his shoulders and carrying a big folder full of papers. I came up and asked to take his picture.

"I think now is not the time, comrade," he answered. "It would be better to do it when I look like myself again. Then you will be welcome."

This conversation took place soon after Lenin returned from Finland, where he had been hiding from the Provisional Government police. He had shaved his beard off so he would not be recognized.

Life was all astir in Petrograd in those agitated days. Unprecedented historical events were taking place. New life was being created in the streets and squares of Petrograd and in the rooms and corridors of the Smolny.

Every minute counted, bringing changes no one had ever conceived of. I knew that I could not go on doing merely routine work. The days would come and go and some of the wonderful details and characteristics of the period would be forgotten. My camera gave me the opportunity of fixing on film and paper what was going on around me. I took pictures of everything I saw: demonstrations in the streets, meetings in the squares, Red Guard units forming, delegations arriving from the front.

Meeting with wonderful people who headed the mass movement and led the proletariat, I thought up the idea of compiling an album so as to perpetuate their faces for history and future generations.

It was not easy. The people I wished to immortalize were extremely modest, and when I asked to photograph them they often answered:

"Why take a picture of me? Better photograph the masses, the people who are making the Revolution."

Besides, they were all very busy. And here I was poking through the doors with my big wooden camera. I would fix the tripod where an important conference was going on, get under the black cloth and often fill the room with the noise and smoke of a magnesium flash at the most inopportune moment.

They would usher me out politely by one door, and I, obsessed by the idea of photographing everything important, would come in through another one.

I had not forgotten the promise Vladimir Ilyich had made me, and once I asked his secretary to remind him.

Minutes later I was invited into Lenin's private office.

"How much time will the business take?" asked Vladimir Ilyich.

"No more than five or 10 minutes," I said.

"Well, go ahead."

"While I was setting up the camera, Vladimir Ilyich picked up *Pravda* and became absorbed in reading. After fixing the camera to the tripod, I focused it and without losing a moment made three pictures in succession.

Having finished the article he had been reading, Vladimir



Taken in Moscow October 1922.

Taken in Moscow October 1918.



Ilyich put the paper aside, apologized for keeping me waiting and asked me to begin. I took several more pictures and left.

The next day, when I brought the photographs, Vladimir Ilyich looked at them in surprise.

"And where did you take these with the paper?" he asked.

I explained the origin of the pictures and Vladimir Ilyich smiled.

"You photographers are dangerous people!" he said and signing two of the pictures I had brought, presented them to me. I keep these pictures as a great treasure.

During the Civil War I went to the front several times and brought back photographs for the newspapers and the museums. Vladimir Ilyich always looked at those I brought him with great interest.

"The historical importance of photography is very great," he said. "An artist cannot commemorate an event as quickly as a photographer. Do not make so many photographs of individuals, pay more attention to the masses, try to commemorate events."

I tried to follow Lenin's advice. But it was hard to photograph in those days. Cameras were imperfect and cumbersome. I traveled with large wooden ones. The slides were also made of wood. Every negative weighed almost a pound and all my equipment—more than 40 pounds. Getting the camera set up took so much time that often the most interesting moment was lost. There were no such fine portable cameras as the FED, the Leica and the Contax then.

The poor quality of the plates, paper and chemicals, which were produced in very primitive fashion, made developing and printing a lengthy and painful procedure. One could not tell beforehand whether the picture would be good or whether the negative would be covered with blobs and spots.

Every time I returned to Moscow from my trips to the front and the cities of the republic, I looked for a chance to take more pictures of Lenin. Lidiya Fotieva, his secretary, and Maria Ilyinichna, his sister, were often angry at my persistence, but I bore all their reproaches silently, convinced that I was doing something necessary and important for everyone.

The second time, in 1920, I made several portraits of Vladimir Ilyich in his study in the Kremlin.

I was assigned the task of compiling several albums on the history of the Revolution, the Red Army and the creation of the Soviet republics. Vladimir Ilyich personally supervised the work. He looked through all the pictures, gave advice and corrected mistakes.

In 1922 I photographed Vladimir Ilyich a third time. In spite of his illness he was always very mindful of me.

This time I was not able to show him the photographs. I called up the secretariat for an appointment and was told that Comrade Lenin was very ill.

When I saw him for the last time, it was on his deathbed. The day he died I was urgently called to Gorki where I made my last photograph of Vladimir Ilyich.



Third-year student Irina Subbotina modeling in clay.

Teaching INDUSTRIAL DESIGN

By Yevgeni Protopopov

Photographs by Vsevolod Tarasevich



A lifetime's history is told by these hands: the confident hands of the girl working on her own creation, the fumbling hands of the novice, the demanding hands of the craftsman satisfied only with perfection.





ART should be part of everyday life, not confined to museums and exhibitions. The talent and taste of the artist are needed in literally every field. In the Soviet Union many of the people who are working to beautify our environment come from the Moscow Higher School of Industrial Arts, heir to the rich tradition of the Stroganov School founded in 1825. Such eminent Russian painters as Mikhail Vrubel and Konstantin Korovin and such celebrated Soviet architects as Ivan Zholtovsky and Alexei Shchusev taught there.

The school has three departments. The industrial arts department offers courses in designing industrial equipment, consumer commodities and artistic items of metal and plastics. The monumental-decorative and applied arts department has sections for murals and frescoes, decorative architectural elements and park statuary, artistic ceramics and glassware, and poster, label and packaging design. An interior design department trains interior decorators and furniture and textile designers. The course of study is six years, and graduates are placed in jobs in their chosen fields.

Students spend much of their time in workshops using automatic lathes, machines for working in wood, equipment for testing the strength of yarn, and other such modern tools. In this way they learn various crafts, weaving for instance. This does not necessarily mean that they will become weavers. The idea is to place these sophisticated machines and equipment at the service of their creative ideas. The ceramics workshops have automatic, electric and gas kilns. Large pieces, for instance, 10-feet-tall park vases, are fired in kilns the students themselves designed and built. Incidentally they made all the furniture, partitioning and metal hardware

1. Fifth-year students arranging their work for a ceramics exhibition.
2. Ilya Viev and Alexander Sokolov.
3. His head is busier than his hands at this moment of conception.
4. Fyodor Lvovsky is majoring in interior design.
5. Professor of Architecture Victor Kolmykov analyzes a student's work.
6. Every student exhibits at the fall show.
7. Sculpture students Zinaida Osipova and Magomet Kubanov.



Anatoli Yelizarov looks more like a smith than an art student. He actually was a smith before he enrolled at the school where he is majoring in artistic metal processing.


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at the school. There is a lab for experimental work with different dyes for woodenware, another for protective and decorative metal coatings. With these various facilities, the graduating student is able to design his own project, make the prototype and calculate the cost.

All the departments require the usual courses in drawing, painting, composition, sculpture and art history. The school provides an excellent background, and the graduate is quite capable of working on his own. In the murals and frescoes section;for example, preparations for summer practice begin as early as the fall, with students developing related projects for buildings already erected or in blueprint. They are given problems that require thematic, compositional and color development, which they must, moreover, synthesize with the architecture. Various techniques are employed: tempera, fresco, sgraffito and mosaic. In the second semester the students are required to have the design ready. Of the 12 to 15 designs presented by a class, the best is chosen and a full-size cartoon made. Actual practice begins in June, when students and their instructors go out to the building site. They do the mosaic or mural from scaffolding or on separate slabs which are then put in place. Agreement is reached earlier with the building contractors on working and living conditions and pay.

The exhibition hall on the first floor displays work done during the annual summer practice, obligatory for all students from the first year to the last. Freshmen measure and sketch work already in place; sophomores sketch at the botanic gardens or the zoo and do sculptural studies; seniors are busy with their graduation projects. During the academic year


7



Corner of the decorative architectural element design studio at the end of a long hard-thinking day.

The late Professor Vatagin, famous animal sculptor, with Bintsam Jean Vincent, a Congolese student.

Magomet Kubanov is concentrating on his diploma project. It will incorporate all he has been taught.

students work on projects which they translate in the respective medium during summer practice.
The school has a museum of the best students' work, much of it done under contract with industrial establishments. Also on display is a collection of old Russian, Soviet and foreign industrial design.
To collect the finest specimens of the decorative applied arts and to study folk arts and the tradition out of which they grow, the students go on expeditions all around the country. They bring back fascinating material and sketches and, of course, a host of impressions. These field trips are sponsored by a student society—very popular on campus—whose purpose is the study of the artistic legacy of the past, and its application to modern materials and to industry.





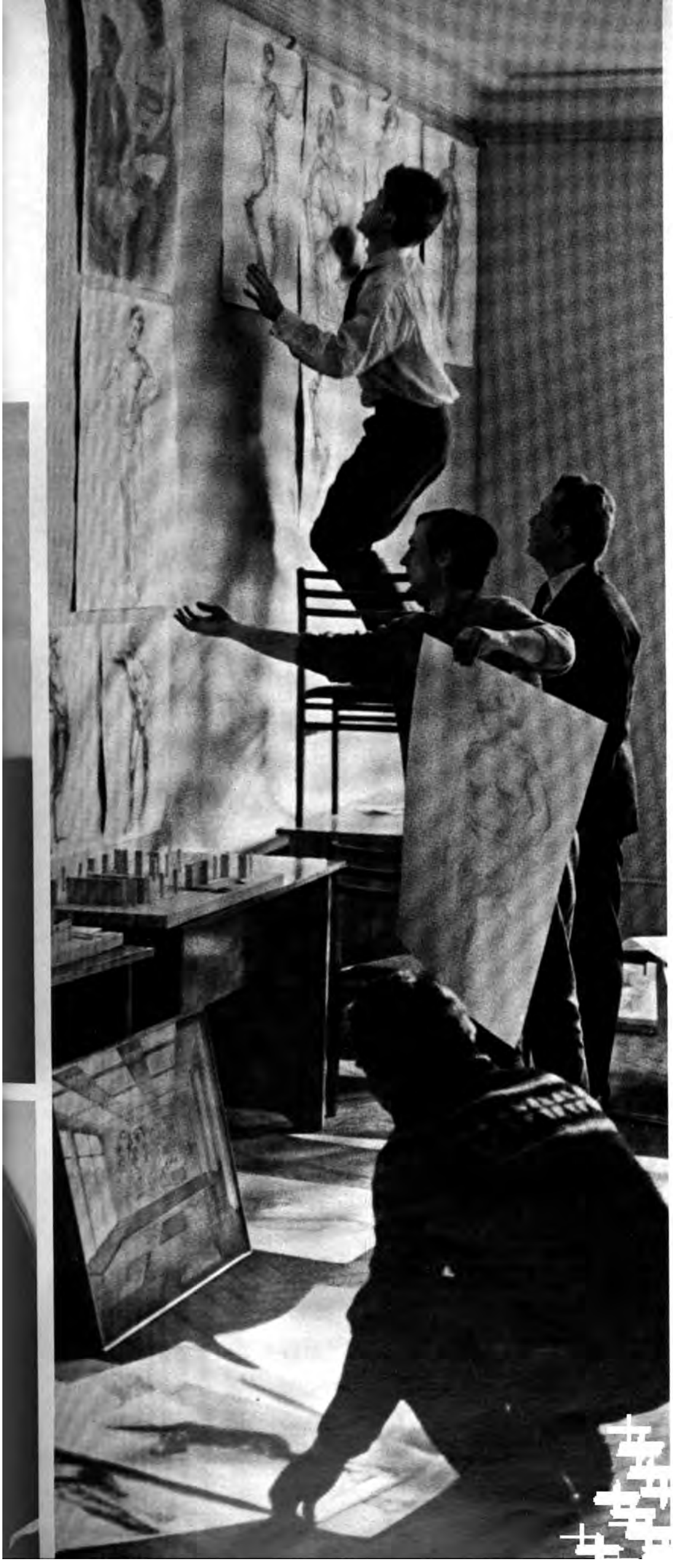
Drawing, painting, sculpture, composition and art history are required courses.

Valentina Kopylova and Irina Simonova are new and still not quite at home. A few weeks and they'll feel like old-timers.

Hanging an exhibit is not a formal course, but it is a necessary learning experience.







CREATING ARTISTS

By Grigori Anisimov and Ivan Kuptsov
Art Critics

PROFESSIONAL art training in the Soviet Union is on three levels—primary, secondary and postsecondary. On the primary level there are more than 100 art schools for children between the ages of 11 and 17. Besides general education subjects, the course of study includes drawing, painting, modeling, composition and art history.

There are 55 schools of fine and industrial arts on the secondary level. In addition, five art boarding schools offer a seven-year course for children age 5 to 11. Tuition and board are free.

Lastly, 17 schools of fine and industrial arts on the college level have five-year and six-year courses of study. The universities and teacher training institutes also have departments of decorative and applied arts, book and stage design and industrial arts design. No tuition is charged, as in all Soviet colleges. The students get maintenance stipends and all their paints, canvas, paper, and other supplies.

This unified system turns out some 5,000 artists and designers yearly. Many of them become members of the art unions and get their studios without charge. The Union of Artists of the USSR has a membership of 12,500.

All the art schools offer theoretical and practical training in class and practice work out of school. The course of study of the Surikov Art Institute in Moscow is fairly typical.

First Year. Introduction to the techniques



Corner of the decorative architectural element design studio at the end of a long hard-thinking day.

The late Professor Vatagin, famous animal sculptor, with Bintsam Jean Vincent, a Congolese student.

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First Year. Introduction to the techniques













of art: sculpture; the graphic arts; light and shade; fundamentals of drawing; still life; the head and torso.

Second Year. Head portraits, semifigures, nudes, compositional painting. Analysis of expressive and pictorial methods in painting. Beginning of annual practical training.

Third Year: Nudes and complex compositions. Theory: nature or art, esthetic judgment, types and genres of art, content and form of art.

Fourth Year: Composition, drawing (individual themes).

Fifth Year: Composition, painting and drawing, free themes, sketches and practice for diploma.

Sixth Year: Diploma (painting, sculpture, graphics, stage design or monumental painting, depending on department). Gifted graduates of the departments of painting, graphic arts and sculpture may, if they wish, be assigned to the studios of known masters.

Methods of training in all the art schools are similar. It usually takes several years for a graduate to "find himself." Among the postwar Surikov Institute graduates who have become famous are Geli Korzhev, Tair Salakhov, Izzat Klychev, Togrul Narimanbekov, Pavel Nikonov and Nikolai Andronov.

A word about pre-Soviet art education. The Royal Academy of Fine Arts was founded in St. Petersburg in 1757 and produced many Russian masters. But its complete dependence on the royal court, its narrow choice of subjects and obsolete methods, its intolerance for everything original and fresh soon set progressive-minded artists against it.

A second major institution was established in the mid-nineteenth century, the Moscow School of Painting, Sculpture and Architecture. Here the spirit was far more progressive.

In Soviet times art took a new direction. Workshops were set up in Moscow, Petrograd (now Leningrad), Saratov, Kazan, Nizhni Novgorod (now Gorky) and other cities. They evolved into art schools with courses of study drafted by the People's Commissariat of Education. The Department of Pictorial Arts of this commissariat was headed in the twenties and thirties by David Shterenberg, a prominent artist.

The art studios were self-managing, and the students followed diverse artistic trends, doing everything possible to make art accessible to the people. They designed scenery for productions staged by Vsevolod Meyerhold, published art portfolios and decorated the streets on revolutionary holidays.

In 1920 two Moscow studios amalgamated to form the Higher Art and Technical Workshops. Its students were exempt from military service and supported by the state, both very important privileges during the lean Civil War years. The Workshops offered training in painting, graphics, sculpture, architecture, textile design, ceramics, work in woodcraft and metalcraft. A special course was given in spatial composition. The teachers were artists, architects and men familiar with factory production, and they cultivated in their students a spirit of creative daring and individuality. The professors and teachers themselves were vivid personalities: Vladimir Favorsky, Alexander Matveyev, David Shterenberg, Robert Falk, Abram Arkhipov, Dmitri Kardovsky. The Workshops' first graduates became noted masters. One illustrious example is Alexander Deineka, who came to the Workshops straight from the Civil War front.

Beginning with 1926 the Workshops became the Higher State Art and Technical Institute. In 1930 the institute was closed, and new fine arts institutes and schools opened.

From the very outset art education in the Soviet Union was scaled large. Art schools opened in many Russian cities as well as cities in Central Asia, the Ukraine and Transcaucasia. In Tashkent (Uzbekistan) Alexander Volkov headed the College of Arts. In Ashkhabad (Turkmenia) a School of Oriental Arts was founded. A great number of studios and groups for art training were organized in factories and schools. The big galleries opened their doors to the general public.

In 1947 the government set up a USSR Academy of Fine Arts. Composed of the country's leading masters, it worked through its affiliated educational and research institutes.

Art training is open to everyone in the country. Kindergarten and primary school pupils are taught to draw and model. Soviet children have won numerous awards at international exhibitions and contests.

Aside from art groups at schools, there are studios for gifted children at all the houses and palaces of Young Pioneers and similar groups at clubs and houses of culture for adults. The USSR Correspondence University of Culture has a department of fine arts for those who live in areas far from metropolitan centers and those who prefer to work at home rather than in a studio.

Students of the Moscow Industrial Arts School executed all of these pieces. The diploma works are usually larger pieces or sets composed of several parts, as shown by the photographs. They are, of course, more detailed than the pieces crafted as part of the students' regular training or those made during their work on summer projects. The diploma works represent the students' finest efforts. They are the embodiment of the pinnacle of his creativity and everything he has been able to assimilate from all that he has been taught in the six years he has spent at the school.

1, 5, 15 and 16. Bent glass animal. Vladimir Dzugayev's diploma work.
2 and 8. Wine glass set. Sergei Konoplev, third-year student.
3 and 9. Ceramic crockery set for a restaurant in the town of Suzdal. Nina Pomyelova, fourth-year student.
4. **Guardian of the Night.** Decorative ceramic sculpture for a sanatorium. Ivan Denisenko's diploma work.
6 and 10. **Warrior.** Stone sculpture. Pyotr Chaplygin.
7. **Maternity.** Sculpture for a kindergarten. Vasili Yermolenko's diploma work.
11. Church of John the Goldenmouthed in Korovniki. Etching on a glass vase. Mirza Ibragimov. Third-year student.
12. Wine decanter and glasses. Sergei Konoplev.
13. A crockery set for a Suzdal restaurant. Ludmila Averkieva, fourth-year student.
14. **Mermaid.** Ceramic sculpture for a garden. Irina Krygina's diploma work.
17. **Maternity.** Glass. Yuri Sergeyev's diploma work.
18. The sugar bowl from the "Chess" coffee set. Nina Ignatieva.
19. **Ancient Rus.** Metal and enamel platter. Galina Malysheva's diploma work.
20. Decanter and wine glasses (left). Alexander Chernousov, third-year student.
Decanter and mug. Nikolai Klishchenko, third-year student.

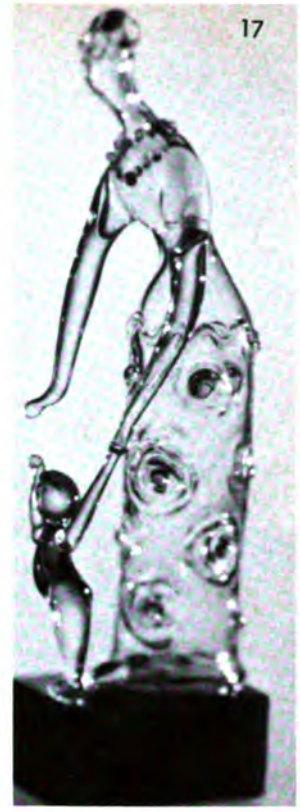

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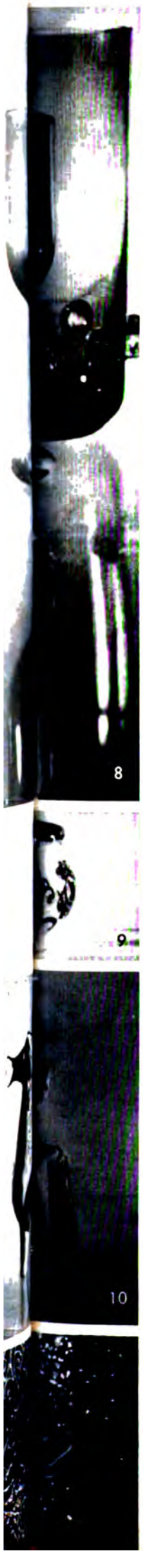


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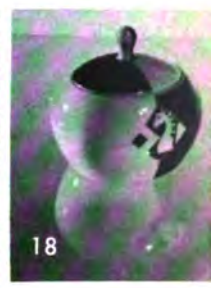

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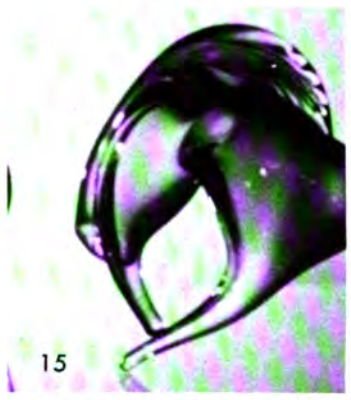



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QUERIES FROM READERS

QUESTION: How much does a physician in the USSR charge per visit at his office? How much does a stay in the hospital cost a patient per day (exclusive of laboratory, doctor's service or medicine), simply occupation of a bed, food and nurse's care? (Marie de Bruyan Steinbach, Jacksonville, Florida)

ANSWER: There is no charge in the Soviet Union for medical services, including house calls by a physician and first aid. The duty of the state to take care of the health of its citizens is specified by our Constitution. We have 25 doctors to every 10,000 people.

The costs of maintaining medical institutions are covered by the state budget. There are no private hospitals or clinics; the staffs of all medical institutions are paid by the government.

A stay in a hospital does not cost the patient a single penny, no matter how long and costly the treatment he requires. Besides, he is entitled to full or partial pay, depending on his length of service. Women workers get a paid maternity leave of 112 days.

In urban residential areas health care in each district is structured on the visiting physician. At industrial enterprises it is structured on the shop physician. The district pediatrician and his staff look after the children.

The maternity homes and the maternity consultation centers attached to them are also organized on a territorial basis. All pregnant women are under the care of gynecologists. The consultation center doctors and nurses visit pregnant women and nursing mothers for observation, counseling, and instruction on how to nurse and take care of their infants.

There are children's clinics, children's departments in the general hospitals, children's polyclinics and infant welfare centers. The nurseries, kindergartens and children's sanatoriums are, of course, also part of this child health system. Infant welfare centers and children's polyclinics look after the child's health from the moment he is born till he leaves high school. Like the adult health facilities, they are organized on a territorial basis. District pediatricians and nurses are on call for home visits to children.

Besides those supported by the state, there are polyclinics that are self-supporting. They charge one ruble for an appointment with a specialist, one ruble and 25 kopecks if he is a Master of Science, and two rubles if he is a professor. A house call from a polyclinic specialist costs four rubles plus the taxi fare there and back, or six rubles plus the taxi fare if the physician is a professor. A doctor may also have a private practice, but that is not usual.

QUESTION: How much is philosophy studied in the colleges and universities? Or is Western philosophy banned? (Mayer Chariff, Miami Beach, Florida)

ANSWER: All our students are required to take social science, a basic course on human society, the laws of its development, etc. Students at all higher educational institutions are required to take courses in historical materialism and dialectical materialism. The history of philosophy beginning with the most ancient times is offered by the humanities departments of our institutes and universities. They also offer courses in ancient and medieval philosophy, Renaissance philosophy, French materialism and the French enlightenment of the eighteenth century, Locke, Hume, Spinoza, Hegel, Kant, Anglo-American philosophy of the nineteenth and twentieth centuries, the existentialism of Heidegger and Sartre, Charles Peirce's pragmatism and every other area of the history of philosophy and modern philosophy.

Many universities have a history of foreign philosophy department.

QUESTION: Do you teach "ABC" or the old-fashioned phonics system? Do you teach "new math" or the older system? At what age do you think real learning should begin at day centers or nursery schools? How do you prevent wasting intelligent people whose type of intellect might not show in school but later? Today in many countries they would never be educated farther unless they showed promise at first. (Mrs. Joseph D. Cole, San Diego, California)

ANSWER: All Soviet children start school at the age of seven. Many of the children have not learned to read and count by then, but efforts are under way to give preschool age children an elementary knowledge of reading and arithmetic. At many kindergartens six-year-olds take special classes to prepare them for the first grade.

Preschool education is particularly important now that the primary school has changed from a four- to a three-year program, with a consequent change in curriculum and textbooks. Elements of algebra and geometry are introduced in the first grade. The children are taught to find unknown quantities—not only to do elementary sums, but to think logically as well.

We do not do intelligence testing in our schools, and our children are not divided into groups according to ability. A high learning level is expected of everyone. Our teachers believe that being in the same class with good students helps to motivate poor learners.

We are in the process of making 10-year education compulsory throughout the country. Every graduate, regardless of his marks, is eligible for admission to any higher educational institution in the country if he passes the competitive entrance examinations. The only consideration is how he does in the entrance exams; his high-school grades are not a factor.

QUESTION: In the February 1968 issue, on page 48, Igor Kon states that Communists have always fought individualism. Why? As a society is composed of individuals, it would seem that to fight individualism would be to fight society in a sense. Also how can there be "free development of each" if you fight individualism? (Kathleen Wade, Austin, Texas)

ANSWER: The word "individualism" has several shades of meaning in English. What we had in mind was the definition *Webster's International Dictionary, Second Edition* gives as "7. *Philos.*, egoism." In that sense Igor Kon's usage was correct: Communist ideology does indeed refute the philosophy of individualism. But any progressive-minded person would have to agree that this philosophy is egotistic by nature and even antihuman. A person lives in society and must consider those around him.

Marxist philosophy maintains that individualism is not simply a psychological but a social phenomenon. Proof of that is the private property concept. Regardless of their wish and will, people are motivated by the concept. Some people are ruled by it: They are avaricious, have insatiable ambitions, are unscrupulous and heartless. Others are compassionate, sensitive to the griefs of their fellow humans, try to soften the rigors of life. We think the writer of the letter would prefer, as we would, to be surrounded by such unselfish people.

We have abolished private property, but of course individualism has not disappeared with it, for human psychology is not changed by decree. However our ideology, our morals and ethics are based on relations between people which are at variance with an individualistic philosophy. The purpose of communism is not only material plenty but also complete equality of people, the freedom of everyone and the fraternity of all. Individualism is not compatible with such a moral code.

However, Communists are very much for the personality development of the individual. We know that the more free and complete the development of a person is, the greater his contribution to society will be. By the way, Igor Kon on the same page talks of conformism which depersonalizes the modern world.

The idea of freedom of personality, however, is a relative concept. We are opposed to the kind of individualism which limits the freedom of others. That definition could justify even criminals. Let them operate as the spirit moves them and what happens to the freedom of honest people? We obviously have to differentiate between individualism and the individual.

QUESTION: Are there any ski areas in the mountains one can go to in the USSR? (O. L. Nordberg, Highland Park, Illinois)

ANSWER: Intourist, the Soviet travel agency, offers two alternatives, Itkol or Dombai. Both are in the mountains of the Caucasus, where the skiing season lasts from November till May. Itkol is more attractive, most people say; its altitude is higher than Dombai's and the ski descent is longer. It has more tows and two comfortable hotels. However, Dombai is building new hotels and new slopes.

Continued from page 19

space explorers. "I am sure that in the middle or at the end of the seventies," Borman said, "when big manned orbital stations are launched, joint Soviet-American space exploration will begin. Our light-blue planet," he continued, "is the only spot of color in the blackness of space and we, its inhabitants, should learn to live in peace. I shall devote the remainder of my life to the improvement of relations between our two countries."

As the audience applauded, Georgi Beregovoi handed to Borman a model of the Vostok spaceship. "This is the most valuable gift I've ever received," Borman said with deep emotion.

The lights went out, and the audience was shown some short documentary color films about the life of Gagarin and the recent joint flight of Soviet spaceships Soyuz 4 and Soyuz 5. Borman showed his NASA color film about Apollo 8's flight to the Moon. "This film is my gift to Stellar Town," he said. "When you view it in my absence, remember that this is a gift from a friend."

The guests then toured two town landmarks: the Gagarin Museum and the Gift Museum. "I am happy that I've had the chance of visiting these," Borman said. "This is an excellent idea. We ought to open such a museum, too."

Half an hour later, at a banquet in the town restaurant, Frank Borman replenished the museum's collection with a new exhibit—the watch he had received from West Point friends and which accompanied him on the Gemini 7 flight. "And as for your gift, the model of the Vostok spaceship," Borman said as he handed the watch to Beregovoi, "I shall never give it to any museum."

JULY 6-7, 1969

Frank Borman: "The 'Black Doctor' wine is the only doctor I put up with."

A special IL-18 airliner took the Bormans and those who accompanied them to Simferopol, in the Crimea.

After a light luncheon at the airport Frank Borman, accompanied by the director of the long-range space communication center, left by helicopter for a tracking station. Meanwhile his wife, children and "traveling companions" took a 60-mile bus ride to Yalta over a winding mountain road and went to the Hotel Ukraina, situated on a green, quiet street.

Yalta is the biggest resort center on the southern coast of the Crimea. The historic Yalta Conference of the Big Three—Roosevelt, Churchill and Stalin—was held near there early in 1945—at Livadiya, site of a former palace of the czar which is now a trade union sanatorium. One of Yalta's central streets is named after Franklin D. Roosevelt in commemoration of that meeting.

Borman arrived in Yalta the following morning. A 15-seater hydrofoil took him, his wife and children to Artek, the largest Young Pioneer camp. The hydrofoil glided at 50 miles per hour past the picturesque shore dotted with trade union sanatoriums.

At the entrance to Artek the Bormans were met by Indian Young Pioneers Anjela Cheterjee and Aba Purohit, who received the first autographs. The Bormans' guide was camper Asya Atamanchuk.

Yevgeni Rybinsky, director of Artek, showed the guests a model of the camp, which was founded in 1925. That first year, 80 Young Pioneers spent their vacations there. Today the summer population is 5,000 boys and girls. Asya Atamanchuk told the guests about the camp's activities—the numerous amateur societies, excursions, sports competitions.

The guests viewed the international friendship monument by the well-known Soviet sculptor Ernest Neizvestny: Prometheus Bringing Fire to the Children of the World.

At the bonfire site about 1,000 Young Pioneers greeted the Bormans and the Soviet cosmonauts with an impromptu amateur concert.

On their way back to Yalta, the guests stopped at Massandra, the Crimea's famous wine-making center. In its collection are wines of many countries of the world and various ages, the oldest one dating from 1775. Massandra makes fortified and dessert wines—sherry, Madeira, Muscat, port. Many of its products are exported.

Borman was treated to his favorite wine, "The Black Doctor." "This is the only doctor I put up with," the astronaut remarked.

JULY 8, 1969

Frank Borman: "Nobody will believe that I bathed in a Siberian river . . . and that the water was as warm as in the Gulf of Mexico."

After a six-hour flight across four time zones, the airliner landed in Novosibirsk early in the morning. An hour later the guests relaxed in a special cottage for the distinguished visitors of Science Town—the scientific center of the Siberian Branch of the USSR Academy of Sciences—20 miles from Novosibirsk.

In the Scientists Club the guests were met by Science Town's founder, Academician Mikhail Lavrentyev, an enthusiast for the development of Siberia. He proudly showed the Bormans the art gallery, with paintings by the town's scientists.

Lavrentyev described the town's 20 big research institutes, which tackle specific problems of the development of Siberia and the Soviet Far East. The community is only a little over 10 years old, but it already has many interesting research projects to its credit. "In a few decades," Lavrentyev said, "Siberia and the Far East will provide most of our raw materials and our industrial output."

The computer center is fitted out with the latest Soviet models. One of these, the BSM, presented Borman with a portrait of Lenin it had drawn. At his request, he was given punch cards containing the program of Lenin's portrait. "I shall get the same portrait from an American computer," he said with a smile.

After a boat trip across the Ob water reservoir, Borman took a swim. "Nobody will believe," he said, "that I bathed in a Siberian river flowing into the Arctic Ocean and that the water was as warm as in the Gulf of Mexico."

At 10 P.M. the Bormans took off from the airport and headed for Moscow. In one cabin were Academician Leonid Sedov, one of the leading specialists in space exploration, on his way back to Moscow after a two-week voyage along the Ob River; Borman; Mikhail Lavrentyev, bound for a session of the USSR Supreme Soviet; Gherman Titov and Konstantin Feoktistov. Professional talk gave way to discussions of religion and atheism, the problem of racism in the USA, and private property. . . . Each stuck to his own opinion.

JULY 9, 1969

Frank Borman: "Most [Soviet cosmonauts] are members of the Soviet parliament. The American astronauts ought to adopt this valuable experience."

At 11 A.M. Frank Borman visited the presidium of the USSR Academy of Sciences. President Mstislav Keldysh, Academician Anatoli Blagonravov, Titov, Feoktistov, scientists and guests sat at a festive table. The talk revolved around big orbital stations, artificial gravitation, Armenian brandy, allocations for space research, the banning of military use of outer space (unanimous opinion), the date of landing on Mars, disarmament, mutual cooperation in space research, ballet.

At 5 P.M. Borman was received by Nikolai Podgorny, President of the Presidium of the USSR Supreme Soviet.

"I sent you my greetings," President Podgorny reminded him, "in connection with the wonderful flights on Gemini 7 and Apollo 8, and now I am glad to welcome you personally to the Soviet Union. And what are your feelings now that you are leaving us?"

"I am optimistic," Borman replied. "It is a great honor to meet you. We shall long remember the warmth and cordiality of the Soviet people. I have already said that I want to devote the remainder of my life to the improvement of relations between our two countries. Soviet cosmonauts are in a more favorable position in this respect—most of them are members of the Soviet parliament. The American astronauts ought to adopt this valuable experience."

Borman further said that it was necessary to include in the draft disarmament program a point on banning the use of controlled spacecraft for military purposes.

President Podgorny asked Borman to convey greetings to President Nixon and the American people. The improvement of relations between the USSR and the USA, he pointed out, would benefit all the peoples of the world. He then wished Apollo 11 a successful flight.

At the end of their 35-minute talk President Podgorny presented to Borman a jubilee medal commemorating the fiftieth anniversary of Soviet power and a Palekh box with a portrait of Yuri Gagarin on the lid. To Susan Borman he gave an Orenburg shawl, hand-woven of filmy wool. Despite its large size, such a shawl can easily be passed through a signet ring.

In the evening the union of friendship societies arranged a farewell reception in the Red Hall of the Hotel Metropol in honor of the Bormans. More than 200 people greeted the American astronaut and his family, and the last souvenirs were presented to them.

JULY 10, 1969

Newsman: What would you like to tell the Soviet people? Frank Borman: Many thanks from myself, my wife and the boys.

At 8:30 A.M. a press-conference was held at the Sheremetyevo Airport. The Bormans were questioned by correspondents from Associated Press, ABC, the Novosti Press Agency, NBC and TASS. Their chief impression? The warmth and cordiality of the Soviet people. Their main conclusion? That we must maintain cooperation between our countries, and space exploration is the first real step in this direction. What would he like to tell the Soviet people? Many thanks from myself, my wife and the boys.

The last handshakes and kisses. Victor Gorshkov and Susan Borman wiped away tears. Good-by Frank, good-by Susan, Fred and Edwin! You came as friends, and you leave thousands of new friends behind.

This diary was kept by Ted Rukhadze, a special correspondent of Novosti Press Agency.

AN AMERICAN IMPRESARIO ON CULTURAL EXCHANGE



Joseph Zarovich, American impresario and head of Zarovich Concert Management, Inc., visited Moscow recently to sign cultural exchange contracts for the next two years. Mr. Zarovich was interviewed by SOVIET LIFE correspondent Maya Gordeyeva on his firm's upcoming projects, which include a festival of Soviet music in the U.S. and visits by American musicians to the Soviet Union.

Correspondent. Which Soviet musical company will be coming to the USA first?
Zarovich. The Nikolai Osipov State Orchestra of Folk Instruments will be arriving in October for an eight-week tour.
Correspondent. What cities will it visit?
Zarovich. Several southern cities where no Soviet performers have yet appeared—Florence, Alabama; Jackson, Tennessee; Birmingham, Alabama and Panama City, Florida, among others. This will be the orchestra's first trip to the United States. From there the Soviet musicians will go to Canada and may possibly have time for some concerts in New York on the way back. Repeat concerts are usually important. Of course, the orchestra will be returning to the States during the Christmas holidays—a dead season—but I think it should arouse enough interest to draw audiences even then.
Correspondent. Why did you choose this orchestra in particular?
Zarovich. I heard it several times in Moscow and last year in Great Britain, on its tour there. I hope our audiences will like it. Americans associate the balalaika mainly with our Russian restaurants. They never hear other Russian folk instruments—the *bayan* (button accordion), *rozhok* (small horn), *gusli* (psaltery) and *domra* (a stringed instrument).

I should like to do everything possible to prepare our public for the Osipov orchestra. I myself feel that it is a very serious and interesting ensemble, and I would like Americans to give it the attention it deserves. I am sure our music lovers will like the unusual sounds of the folk instruments and that many will pass the word on to friends.

Unfortunately, our tour allows for only one performance in most of the cities we are going to, so that we shall probably be unable to accommodate all those who want to hear the orchestra.
Correspondent. Which soloists have you invited to appear with the folk instrument orchestra?
Zarovich. Ivan Petrov, bass, and Valentina Levko, contralto, both of the Bolshoi Theater, and Ludmila Zykina, folk singer, among others. A dance pair—Liliya Novgorodova and Yuri Mironov—will also perform. But the soloists will not be given so much space in the program that they outshine the orchestra, as was the case in London—it is too good to be relegated to the status of mere accompanist.
Correspondent. What will the program be?
Zarovich. Folk songs and interesting folk music. But this orchestra also does classical music. I am not sure that a folk orchestra ought to let itself be carried away by classical music, but it will not hurt to make this exception. The orchestra gives a fine rendition, for instance, of Lyadov's *Magic Lake*. When Lyadov heard his work played by the Andreyev folk orchestra, Russia's first, in 1912 or 1913, he decided to reorchestrate it for folk instruments. He thought it sounded better played by folk instruments than in symphony rendition. The Osipov orchestra also plays Moussorgsky, Brahms, Khachaturyan and other composers.
Correspondent. What other Soviet musicians will you be introducing to American audiences?
Zarovich. This time I managed to conclude a contract with Goskontsert (the state concert organization) for a U.S. tour of two young Soviet orchestra conductors, Dmitri Kitayenko and Maxim Shostakovich. The latter appeared in New York with the State Symphony Orchestra and won the hearts of both the public and the press.

Last year I announced the tour of the brilliant Zhok Ensemble of Moldavia, which I intend to bring to America. While the dates haven't been set, I'm sure Americans will also like the Bolshoi Theater's fine group of violinists conducted by Yuli Reyentovich, which we have tentatively named the *Virtuosi de Moscou*.

I have also organized a festival of Soviet music in the USA for December 1970. A festival of this kind was scheduled for Paris in July, and then for Rome. I think the idea is very interesting and I am glad we will be able to carry it through. The program will include concertos by several outstanding Soviet composers—Shostakovich, Prokofiev, Khachaturyan, Khrennikov, Shchedrin, Sveridov and Babajanyan—with a number of first-class Soviet conductors and soloists participating. I can't name them yet, but I do know they will be eminent musicians.

In the spring of 1971 I will be bringing the very engaging Omsk Folk Chorus to the USA.

Besides, I am making arrangements with Goskontsert to invite the Leningrad Philharmonic Orchestra and its famous conductor Yevgeni Mravinsky, who have appeared in the United States with great success.
Correspondent. How did your business arrangements in Moscow go?
Zarovich. I had very pleasant business dealings with Venedikt Boni, director of the state concert organization, and Deputy Minister of Culture Vladimir Popov. They showed me every attention. I have already given you the results of these meetings. Minister of Culture Yekaterina Furtseva was away, but I saw her the last time I was here and can say that I had a very good reception. Madame Furtseva understands our problems introducing Soviet artists to Americans and vice versa.
Correspondent. What are the problems?
Zarovich. The point is that in different countries audience reactions are different, and what is popular at home may not go over abroad. Of course, such great masters as Rastropovich, Oistrakh, Gilels, Richter and Kogan are appreciated anywhere and anytime. But when it comes to lesser known artists, it is hard to say what the public's reaction will be. Take Raikin's satirical show, for instance. I consider this artist very gifted, but his satire would be completely lost on our audiences because we know too little about your everyday life, let alone your language.
Correspondent. In organizing the tour of a company or soloist, I suppose you are guided primarily by box-office considerations?
Zarovich. Box-office success, unfortunately, is very important, because the performance of a big company entails great expense. In the first place there is the overseas trip, and then travel in the USA is an expensive business. Our air tariffs differ from yours. I flew to Tashkent to see one of the national companies. It took almost seven hours of flying time, which is the distance from New York to Paris, and my ticket cost only 52 rubles. It would cost 500 dollars to fly that distance in the USA.

Another reason the financial aspect cannot be dismissed is that the impresario as a private individual cannot count on state subsidies of the kind you provide through Goskontsert. Therefore we simply have no commercial possibility at home of putting on performances of special artistic value without private subsidy. At home even the opera has to be privately financed. Box-office income would not begin to cover the cost. As for tours, they are conducted wholly at the expense of the impresario.

Of course we have a noble goal—bringing the cultures of different peoples together—but when we select artists, we sometimes make expensive mistakes. Then again, we have the responsibility of bringing new talent out of obscurity.
Correspondent. Which American musicians will be coming to the Soviet Union?
Zarovich. In the first place the young pianist Andre Watts, whom we regard as phenomenal. His mother is a Hungarian and his father a Negro. He is due to arrive in January or February of 1971.

I have signed a contract for the tour in May 1971 of Byron Janis, the pianist. This will be his second visit to the USSR. Grant Johannessen will make a Soviet tour in 1970, and conductor Hans Schwieger in 1972.
Correspondent. What do you think of Soviet musicians?
Zarovich. In your country musical education begins with the very young, a significant fact. You look for talent early in order to develop it. You have music schools for children and music colleges for teenagers. In short, people put in seven or eight years before they even get to the conservatory. That is remarkable! And it brings results! It should surprise no one that you have so many superb musicians. Soviet violinists are in the lead today, of course. And you have splendid pianists—a whole galaxy of masters. Richter, Gilels, and so many young people! Yeresko, Slobodyannik, Bashkirov. . . . And those masters of the old school—Flier, Oborin. Soviet musicians are unquestionably the best in the world! But the same cannot be said about your singers.
Correspondent. That is true, unfortunately. But I believe our ballet makes up for that.
Zarovich. In the United States ballet is also very popular. But we can't expect to do much there unless the theaters get government subsidies.

In any case, we have a great many genuine music lovers. I believe that our American public deserves the finest musicians in the world. That is why I take so much pleasure in introducing Soviet musicians to them.

Russian Folk Instruments

By Irina Makarevich

Photographs by Nikolai Maximov



The folk orchestra's soloists and the varied instruments they play.



Left to right: Chris Schang of Columbia Artists Management; Victor Dubrovsky; Sheldon Gold of Columbia; singer Ludmila Zykina; Joseph Zarovich; orchestra director Victor Vekshin.

RECALL such Russian melodies as "Nochenka" and "Dubinushka" ("Song of the Volga Boatmen") filled with yearning or with the loneliness of vast spaces, and you immediately conjure up the instruments they are played on. The balalaika comes to mind first. But there are others, widely differing in tone and form.

The folk instruments of Russia have a long history. The craftsmen who devised them were the common people, and they worked with materials which were close at hand. The plaintive *zhaleika*, a horn with a wide mouth, was made of birch bark. Shepherds fashioned the *svirel*, a pipe with a warm and tender sound, from a length of reed. From wood, folk musicians made the *brelki*, resembling the modern oboe, and the *kuvichki*, wooden pipes each with a characteristic whistle. They covered earthen bowls with hide to produce the *nakri*, which boomed when struck. Ordinary wooden soup spoons, they found, clattered like castanets. Pieces of wood threaded on a string rattled.

Of all these instruments the balalaika is best known. But its origin is a mystery. The bow of the hunter, that twanged when the arrow was released, was, historians believe, the forerunner of all plucked string instruments. And the direct ancestor of the balalaika, they theorize, was the Asian *domra* brought to Russia by the Tatars.

Balalaika

The early balalaika had only one string, then two, three and even four. The most common today is the three-stringed variety. The bodies were round, oval or triangular. Some had a tiny body and a long, narrow neck, others were bigger, flat, with a short neck. All kinds of wood served for a balalaika—birch, spruce, pine, beech; in the Ukraine even gourds and pumpkins were used. The strings were made of gut. Vyatka balalaikas, which produced a resounding and protracted sound, were especially fine.

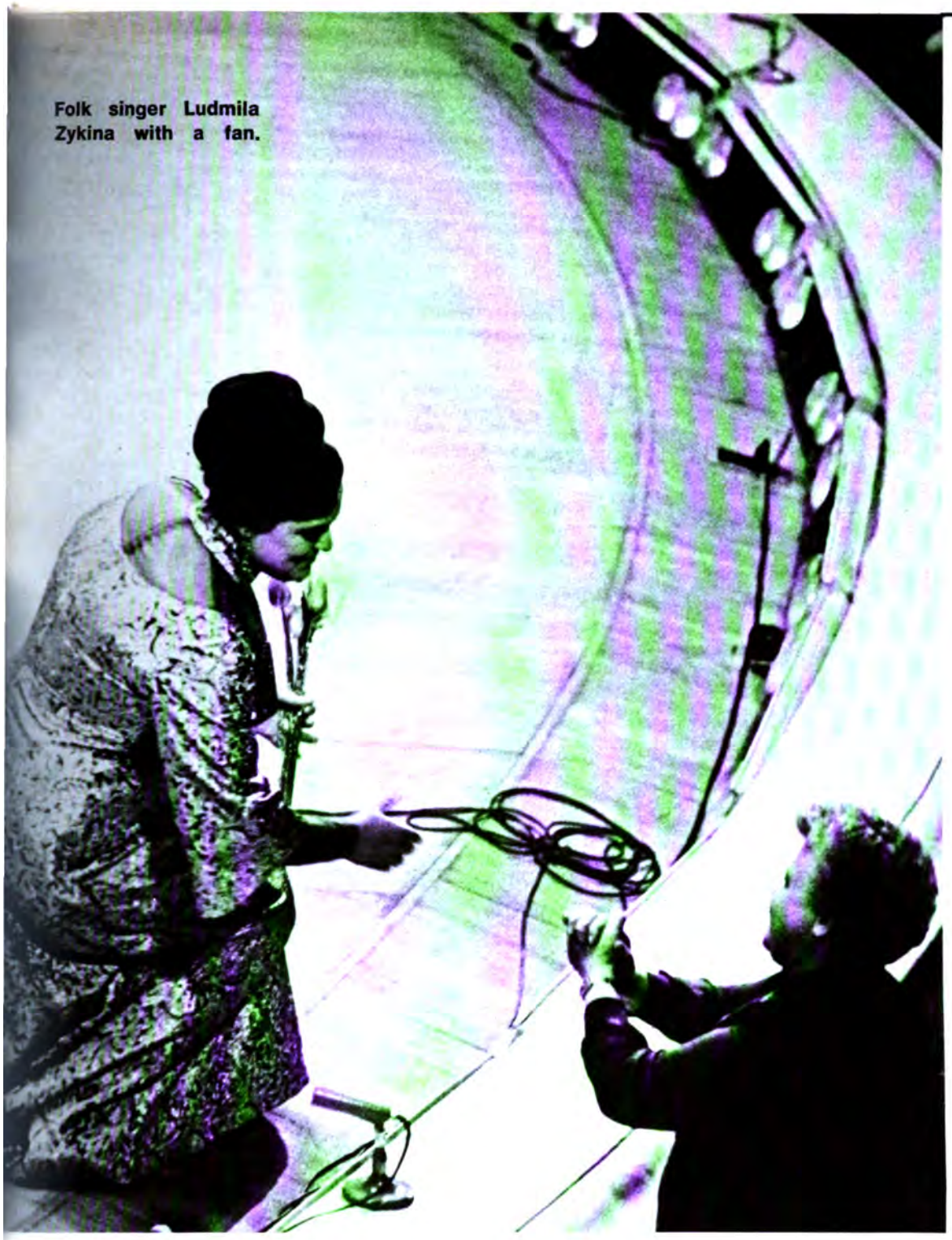
But a pleasant sound was not evolved at once. This is why the instrument was called by a variety of names like balalaika, all of which denoted "jabbering." In the hands of a natural-born virtuoso, however, the balalaika could elicit laughter and tears.

The earliest mention of the instrument, in a recently found 1688 document, told of the arrest of townsman Savka Fyodorov and peasant Ivashka Dmitriyev for "playing the balalaika and singing in the street." Chronicles of the time of Peter the Great describe the wedding of privy councilor Nikita Zotov in 1715: Balalaika entertainment was provided by musicians Ivan Stroyev, Ivan Streshnev, Mikhailo Golenishchev and Prince Obolensky.

In the eighteenth century merrymakers at festivals, who came disguised, were frequently entertained by balalaika players. The instrument had numerous votaries among the gentry, but the first real maestro was the eminent violinist, pianist and composer Ivan Khandoshkin. His balalaika, made of a gourd lined with ground crystal, gave a clear silvery sound. Another famous virtuoso was Mikhail Khrunov. "At first his playing and singing were fairly soft," a contemporary recalls, "but as he got into the spirit, they grew louder and louder, until he would jump up from his seat and do something like a tap dance to the music. After a while he would be so carried away that he would burst into a wild dance."

In the fifties of the last century, what amounted to a legend was spread about a magical balalaika player, cavalry captain Radivilov. He gave solo concerts in Moscow and also played with other leading musicians. Radivilov used a four-stringed balalaika, often playing on a single string. His instrument, they say, was made from a coffin.

Many Russian writers showed an interest in and fondness for the balalaika. The instrument was written about by Pushkin, Lermontov, Gogol and Dostoyevsky. Leo Tolstoy was so charmed by a balalaika orchestra that, a contemporary report has it, he clapped very loudly and asked for the number to be repeated.



Folk singer Ludmila Zykina with a fan.

Antip's Teaching

The balalaika can be meditative, fanciful, sad, joyful, wildly abandoned. Nevertheless, for a long time it had only a few devotees. Its very name was thought to be a synonym for nonmusic. "Coachman's music!" said the snobs of St. Petersburg.

The first to grant the balalaika full citizenship rights was a young Russian landowner from an ancient noble family, Vasili Andreyev. He recalls: "It was a June evening. I was sitting on the porch of my country home. Suddenly I heard unfamiliar sounds. Clearly someone was playing on some kind of string instrument. The sounds were impassioned and rhythmical, inviting one to dance. I ran to the wing of the house where the sounds came from. There on the porch steps sat a worker of mine playing on a balalaika! I was amazed by his original and rhythmic way of playing. I could not understand how so homely-looking an instrument, with only three strings, could produce such sounds.

"I remember I was pierced by a thought: I must learn to play myself and bring balalaika playing to perfection."

This meeting had a decisive influence on Andreyev's life. For days on end he sat by the hut of Uncle Antip and listened to the balalaika. Soon he mastered Antip's teaching.

The Balalaika Acquires a Voice

Andreyev tried out all variants of the balalaika and finally decided to have his own, a concert balalaika, specially made. But no one wanted to make this "muzhik's instrument." It was fashioned in complete secrecy by noted St. Petersburg violin maker Vladimir Ivanov, who used as model a cheap village balalaika of plain spruce.

The "city" version, made of resonant mountain maple, did not jabber but sang under the fingers, and its body gave a range of tones from the finest pianissimo to the most sonorous forte. Later Andreyev with his friend, the remarkable master Semyon Nalimov, improved the pitch, tone and appearance of the balalaika. Nalimov's workshop in the village of Maryino became a veritable balalaika Cremona. In Andreyev's time 200,000 folk instruments were made in Russia. They were fashioned by masters, and the most eminent painters adorned them with ornamental filigrees and with paintings on themes from stories and fables. Especially famous were those decorated by the painters Vrubel and Golovin.

Vasili Andreyev's first public performance in St. Petersburg, on December 23, 1866, was a great success. His talents were recognized by the public and the critics.

But Andreyev continued searching. In village attics he found long-forgotten birch shepherd's horns, *svireli,* dulcimers, *zhaleiki, nakri* and tooters, rattles and tambours. He got together an ensemble of seven balalaika players and in the late nineties organized a Great-Russian orchestra of folk instruments.

The "father of the balalaika" toured with his offspring all over Russia. Andreyev's concerts met a "hail of enthusiastic applause," "shouts of admiration from the public," demands for "endless encores." On hearing Andreyev's orchestra, Tchaikovsky wrote: "How charming, those balalaikas! What an astonishing effect they can produce in an orchestra."

In 1889 Andreyev's balalaika players appeared at the Exhibition Universelle in Paris. The French noted the originality of the instruments and their rare tonal qualities and awarded Andreyev and Nalimov gold medals. Composer Massenet wrote: "I listened with great interest to a band of Russian balalaika players. I was delighted by their talent and the sounds they extract from their picturesque instruments."

In the first decades of the twentieth century, both in Russia and abroad, Chaliapin sang Russian songs to the accompaniment of the Andreyev balalaika orchestra. "You have sheltered in your kind, warm heart a poor orphan, the balalaika," he wrote to Andreyev. "And through your love and care it has grown into a wonderful Russian beauty who has conquered the world."

The Osipov Orchestra

One of those who continued where Vasili Andreyev left off was the noted balalaika player and soloist of the Andreyev orchestra, Boris Troyanovsky. His virtuosity proved that the possibilities of the balalaika were practically unlimited. He played everything from folk melodies to Paganini cappricci, and even the most exacting of music lovers listened with bated breath.

In 1919, with *domra* player Pyotr Alexeyev, he organized Moscow's first professional folk orchestra. Its present name is the Nikolai Osipov State Orchestra of Folk Instruments.

Osipov was a balalaika player who became a soloist in Andreyev's orchestra when he was 10 years old and subsequently developed into a virtuoso. In 1940 he became conductor of a folk instrument orchestra. He contributed much that was new, augmenting the balalaikas, *domras* and dulcimers with shepherd's horns, *brelki, zhaleiki* and numerous percussion instruments.

He introduced groups of solo instruments —dulcimer duets, balalaikas playing in unison, horn quartettes. New virtuoso soloists came to the orchestra—Anatoli Tikhonov, balalaika; Victor Dyachkov, *domra*; Boris Kolevatov and Nikolai Kotov, balalaika duet, and Vera Gorodovskaya and Olympiada Nikitina, dulcimer duet.

After Osipov's death (1945) the orchestra was named for him, and his brother Dmitri took over.

Since 1962 the permanent conductor has been Victor Dubrovsky. He uses the expressive capacities of the instruments with great skill and daring. There are now 80 musicians in the orchestra. The repertory is large: It comprises more than 5,000 major and minor pieces, including folk songs, dances and literary-musical compositions, and ranges from "A Song About Czar Ivan Vasilyevich, the Young Guardsman and the Daring Merchant Kalashnikov" (by the nineteenth century Russian poet Mikhail Lermontov to music by Alexander Kholminov) to *The Snow Maiden* (a joyous fairy tale by Alexander Ostrovsky with music by Tchaikovsky).

By reviving folk music, the orchestra enriches all of Russian music with the melodies and performing techniques created by gifted musicians throughout the ages. Where formerly only a few folk musicians were able to win an audience, now there are hundreds of ensembles. For all of them the standard of perfection is the Nikolai Osipov orchestra.

AROUND the COUNTRY



LASER SURGERY

For some years now researchers have been looking for applications of the laser beam in complicated surgery. In some cases this device can replace the lancet. The advantage of the beam is that it immediately "welds" the ends of blood vessels that it cuts through. In addition, the laser is completely sterile. The beam will not only cut tissue and drill through bone but burn out alien bodies. Laser instruments are already in use at the clinic headed by the eminent Soviet surgeon Alexander Vishnevsky.

MODEL SHIP LABORATORY

For many years now the Navy Club in Moscow has been maintaining a model-shipbuilding laboratory. The laboratory trains instructors of ship modeling and prepares drawings and building instructions which are sent to Pioneer Houses and Young Technician Stations all over the country.

MINICAR

Displayed at the USSR Exhibition of Economic Achievements in Moscow is a minicar, Zaichik. The baby car was built by schoolboys from the city of Novosibirsk, in the southern part of Siberia. Zaichik can do 40 miles an hour. It has a motorcycle engine and a metal body and can carry four passengers or a weight of 440 pounds.

FASHION ATELIER AT SCHOOL

At the fashion atelier affiliated with Moscow School No. 873 the entire staff—designers, cutters and tailors—consists of schoolchildren. The atelier specializes in the national costumes of the various republics. Before starting worl on an order the young designers under the supervision of an instructor, study the historical development of the national dress and its particulars.



SUBMARINE RESEARCH STATION

A new submarine laboratory has been built by a group of Leningrad and Moscow specialists. Called Sadko-2, it is shaped like two joined steel spheres.

The top sphere holds the living quarters and control room; the bottom one is an antechamber where the researchers leave their aqualungs and change clothes. The laboratory is serviced by a surface ship and a coastal station. The air supply is fed under pressure through a flexible hose. Communication with surface observers is by telephone.

The Sadko has considerable buoyancy; ballast must be suspended underneath to keep it at a preset depth.

The new underwater house was tested at the bottom of Sukhumi Bay on the Caucasian coast of the Black Sea, at an 80-foot depth. It could have been sent even deeper, but the researchers were not out for a record submersion. The Sadko's occupants had other tasks, such as testing special breathing mixtures and decompression charts.

They also recorded underwater current velocities and the temperature at various depths and studied the submarine flora and fauna.

Periodically two researchers in aqualungs left their shelter and descended to 130-165 feet.

The oceanauts spent 10 days in the submarine house, including three days of decompression.



CZAR'S RESIDENCE A TOURIST CENTER

Among the most beautiful architectural monuments of old Russia are the Chambers of the Rostov Kremlin, which served many Russian czars as residence. The last of the reigning sovereigns to visit there is thought to be Catherine II. Time took its toll of this citadel and it was only very recently that architects and artists restored its Red Chamber. It will house the international tourist center Rostov Veliky.

Tourists feel the breath of antiquity as soon as they enter the Rostov Kremlin: They are welcomed by staff members of the tourist center costumed like our forefathers and offered a ride in a Russian troika or a trip on the lake in an ancient *ladya*.



SEMICONDUCTORS COOL THE BRAIN

A device developed at the Leningrad Institute of Semiconductors aids in operations that require switching off the heart. A thermoelectric helmet placed on the patient's head cools the brain's inner tissue down to 71 degrees Fahrenheit in 40 minutes, thereby reducing the brain's consumption of oxygen by 75 per cent. Cooling the brain lowers the over-all body temperature. Hypothermia of the organism is achieved without immersing the patient in an ice bath.

FOR THE SHIFTING DESERT SANDS

The only reliable barrier against shifting desert sands is *saksaul*. But it is not easy to grow the plant. The sand is held back by the adult plants but kills the young ones.

Researchers in Tashkent, the capital of Uzbekistan, suggest that when *saksaul* is planted the sand should be covered with bituminous emulsion a fraction of an inch thick. A film of this kind serves as a cover and reduces evaporation.

Protected by the bituminous film, *saksaul* seeds have six times the germinating power. In one season the bushes grow three feet high.

HEALTH-GIVING DRUG

Soviet livestock breeders think highly of a new fodder preparation — calcium pantothenate (vitamin B_3)—made by the Krasnodar Combine in the southern part of Russia.

Added to fodder, it increases weight dramatically, cuts the time needed for fattening and develops the animal's resistance to a number of diseases.

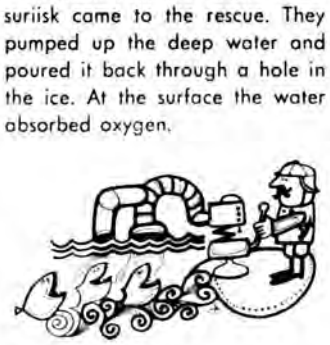
Calcium pantothenate has also been used with good effects on humans in cases of polyneuritis, eczema, allergic dermatitis, stomatitis, colitis, radiation exposure and roentgen dermatitis, inflammations of the respiratory tract, asthma, and side effects of antibiotics.

In 1969 some 1,100 pounds of this health-giving preparation will be manufactured for medicinal use.

FIREMEN HELP FISH

Unusually hard frosts and no snow at all last year accounted for the fact that the Suifun River in the Far East froze almost down to the bottom in many places. There was only a fifth as much oxygen in the water as the fish required.

Firemen from the town of Ussuriisk came to the rescue. They pumped up the deep water and poured it back through a hole in the ice. At the surface the water absorbed oxygen.



MAGAZINE FOR PRESCHOOLERS

A new audiovisual magazine *Kolobok*, is out for preschoolers and schoolchildren. Magazine supplements are flexible records with music, songs and stories. *Kolobok* is well illustrated and carries games and make-it-yourself materials. In the first number the patriarch of Soviet children's literature, Kornei Chukovsky, addressed the young readers. The quarterly has a circulation of 300,000.



MAN IN ELECTRIC FIELD

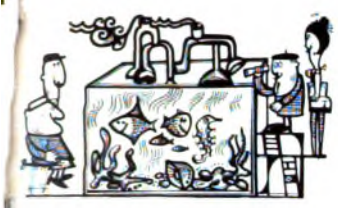
Electricians working at high capacity substations are exposed to voltages as high as 20,000. Such powerful electric fields have an adverse effect on the nervous system. Also, an awkward movement may set off a spark between the workman's hand and grounded metallic structures.

Greater safety is furnished by a new screening suit designed jointly by Moscow and Leningrad scientists. The material is made of thread and insulated wire 80 microns thick. The voltage registered on the body of a man dressed in the safety suit is practically zero.

PROBING THE EARTH'S CRUST

Byelorussia's scientists have done an electromagnetic probe of the republic's territory, on which the thickness of the Earth's crust ranges from 21 to 26 miles. The study of thermal conditions revealed a number of highly mineralized hot water sources with temperatures of 140 to 194 degrees Fahrenheit.

Information on the structure of the surface and lower layers suggests new finds of nonferrous metals and rare and scattered elements.



ARCTIC AQUARIUM

A biological station of Moscow University is located near the Arctic Circle, on the White Sea coast. Built there recently was a new three-story laboratory with immense aquariums whose bottoms simulate the sea and ocean beds. Water is pumped into the aquariums directly from the sea. Thermoregulators adjust the temperature.

Ichthyologists, biochemists, microbiologists and hydrologists are doing a detailed study of submarine life in the area. One of the laboratories was turned over to university students for practice work during the summer.



ARCTIC DEICER

Ice in Arctic waters is a perennial problem and hazard for shipping. Scientists at the Institute of the Arctic and Antarctic in Leningrad have devised a setup for icebreakers which not only break up ice but clear away the fragments from the passage made.

SECOND BIRTH OF A RIVER

An ancient river, which before our era brought water to many oases in the northern part of the Kyzyl-Kum Desert, has been "restored" by Kazakhstan's irrigators. The Zhana Darya, an old bed of the Syr Darya, dried up centuries ago. In its valley there are still traces of ancient irrigation systems and settlements.

The bed of the Zhana Darya is now being cleared of sand drifts, and a hydroengineering structure has been built which channels the waters of the Syr Darya back into the dried river bed. Following the course of the ancient river, the water is already flowing across 185 miles of the desert.



MEDICINAL MUD

The Northern Caucasus is the site of an unusual lake, Tambukan. No fish live in its waters, nor do birds ever descend on its surface. The waters of the saline lake kill all life. But the black, sticky mud at the bottom has rare medicinal properties.

This mud has healed hundreds of thousands of sufferers from such serious ailments as rheumatism and various forms of neuralgia. It is not only used at mud treatment clinics in the Northern Caucasus' health resorts—Nalchik, Pyatigorsk, Yessentuki—but is shipped thousands of miles to Moscow, Murmansk and Taganrog.

The lake was formed from thawing glaciers in the mountains of the Caucasus. Accumulation of medicinal mud started only recently, geologically speaking, as mud-forming microbes worked on the organic and mineral sedimentations at the bottom of the lake.

One of the peculiarities of Tambukan is that its water comes exclusively from atmospheric precipitation. Therefore in arid periods, not infrequent in that zone, the lake declines in size and the mineralization of the water increases sharply. Mud sedimentations come to the surface and the microbes die. Scientists therefore keep a vigilant eye on the water level and fill the lake artificially in periods of low rainfall.

Estimates indicate that there are now about 2.3 million cubic yards of medicinal mud at the lake bottom, enough to last about 150 years. But since the process of mud formation continues, the lake's medicinal resources will last a longer time.



ROCKETS VERSUS HAIL

The country's antihail service protects five million acres of farmland. The zone of hail formation is spotted by radio locators and an antiaircraft projectile or rocket sent up to scatter the hail preventive. A single antiaircraft gun or rocket setup will take care of 2,000 acres.

The antihail service plans eventually to cover 12 to 15 million acres.



ONE-MAN SHOW

A one-man show, the work of Pyotr Leonov, was held recently in the Exhibition Hall of the Artists' Union. For over 30 years Leonov has headed the studio at the porcelain factory in Dulev, near Moscow.

His work has won gold medals at international exhibitions in Paris and Brussels.

RUSSIA'S FIRST SUBMARINE

On display in the Byelorussian State Museum is a model of the first (projected) Russian submarine. The submarine itself was never built. The design was drafted 137 years ago by Kazimir Charnovsky, while he was in prison, first in the Petropavlovsk Fortress and then in the Schlüsselburg Fortress. An active opponent of czarist autocracy, he was convicted for his revolutionary activities.

His underwater ship, a metal cigar-shaped cylinder, was designed for a 65-foot depth. In the front part was the control room with a porthole. The inventor had a device worked out for air revitalization.

The model of the underwater ship, following the inventor's drawings and calculations, was made in the model ship laboratory at the Young Technician Station in Minsk, capital of Byelorussia.



ROOT SCULPTURES

Leningrad excavator operator Albert Yegorov is an amateur sculptor. From his father in his native Vologda Region, in the northern part of European Russia, he often receives parcels with fancifully bent branches and roots of trees. In the hands of the amateur artist these gifts of the forest come to life, transformed into the heroes of Russian folk tales and into animals and birds.

Yegorov's collection includes 400 of these sculptures done jointly with nature. Some of them were displayed recently at the Nature and Fantasy exhibition.

POWER STATION IN THE CLOUDS

A group of Moscow engineers has proposed that air currents in the tropopause (the atmosphere-stratosphere boundary) be used to generate cheap electric power. Their idea is to raise wind-driven electric power stations to heights of six or seven miles, where the velocity of air currents is 80 to 100 feet a second. The carrier of the power station is to be a rigid airship about 325 feet in length; the estimated weight of the airship and equipment would be about 33 tons. To keep such a colossus at a six-mile height would require a synthetic rope—a metallic one would break under its own weight.

Many of the problems involved have not yet been solved: deicing, and protection of cable and rope from lightning discharges, among others. A one-tenth scale model of the airship with a wind-driven power station, soon to go up, will supply some of the answers.

The designers also have a project for an airship-borne television relay station. A soaring relay setup would be much cheaper than a tower. The great height would extend the relay radius to 400-450 miles.

SUBMARINE GEOLOGIST

Students of the ocean bottom use dredges which collect mineral specimens blindly. A new device, designed at the Institute of Oceanology in Moscow, is equipped with remote control and a television setup, so that rocks can be taken from the ocean bed by choice. The device has been named "submarine geologist."

Mounted in the spherical container are a television camera and a movie camera. The container has a range of 30 degrees from the vertical to provide a larger field of survey for the cameras. With the container go two manipulators that simulate human hands.

The "submarine geologist" is connected by cable with the research vessel, the cable serving to transmit the TV signal and to control the manipulator.



SUPERCOPIER

The Era-2 electrographic duplicator, developed in Kaunas, Lithuania, does the work of 36 design copyists. In four minutes it turns out three facsimiles of a blueprint, manuscript or printed page in the same or different scale. Unlike most other duplicating devices the Era-2 is completely mechanized. It is in wide use by design groups, research institutes and industrial plants. The Federal Republic of Germany, Sweden, France, Norway, Denmark and Holland have bought licenses to manufacture it.

The duplicator is on display at the Kaunas experimental plant for automation devices, together with earlier models, the Era-11, Era-12 and Era-M, all developed by Lithuanian designers. With adapters it can copy microfilm, as well as offset forms for small-format Rotaprint-type printing machines.

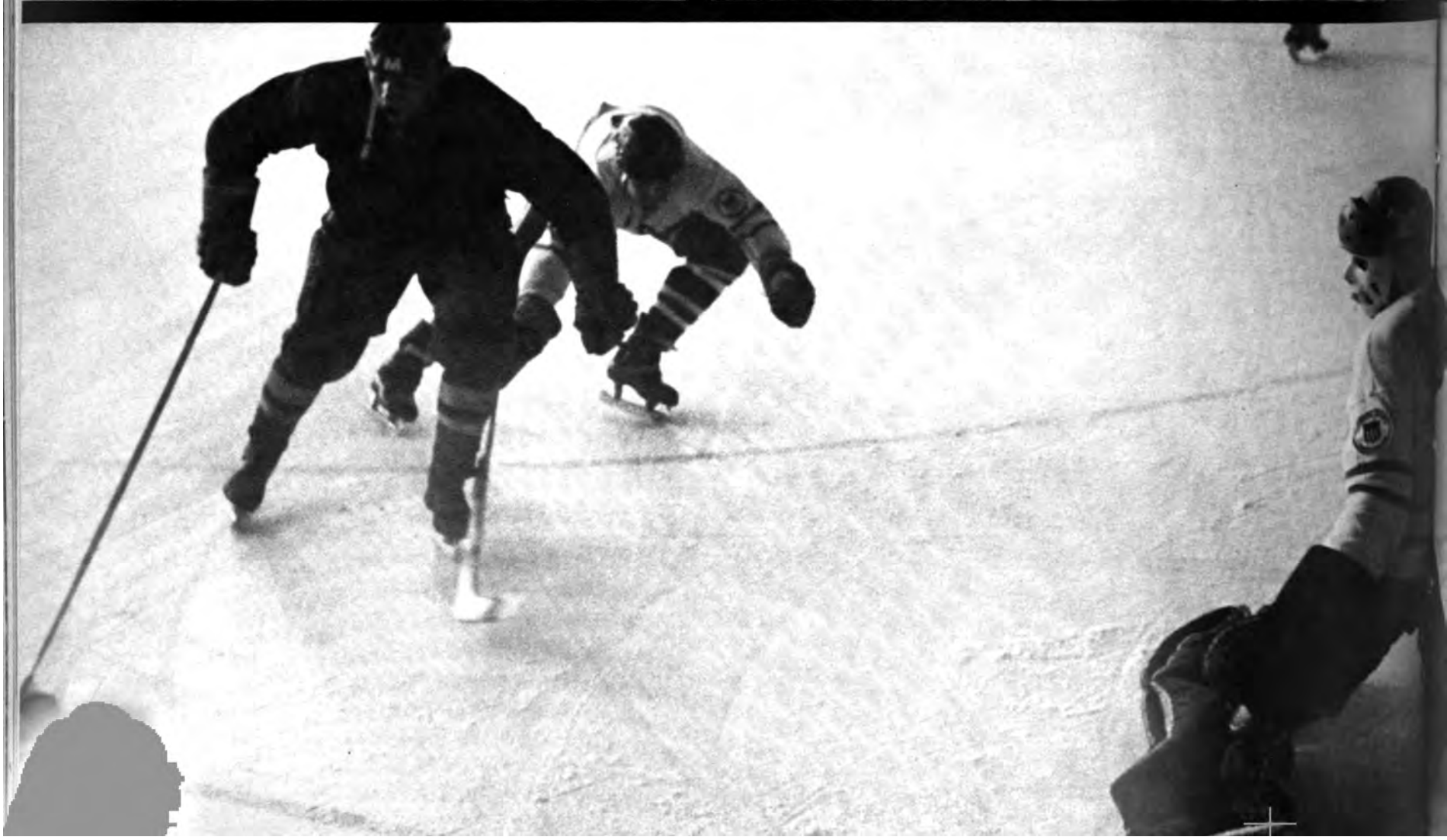
AROUND the COUNTRY

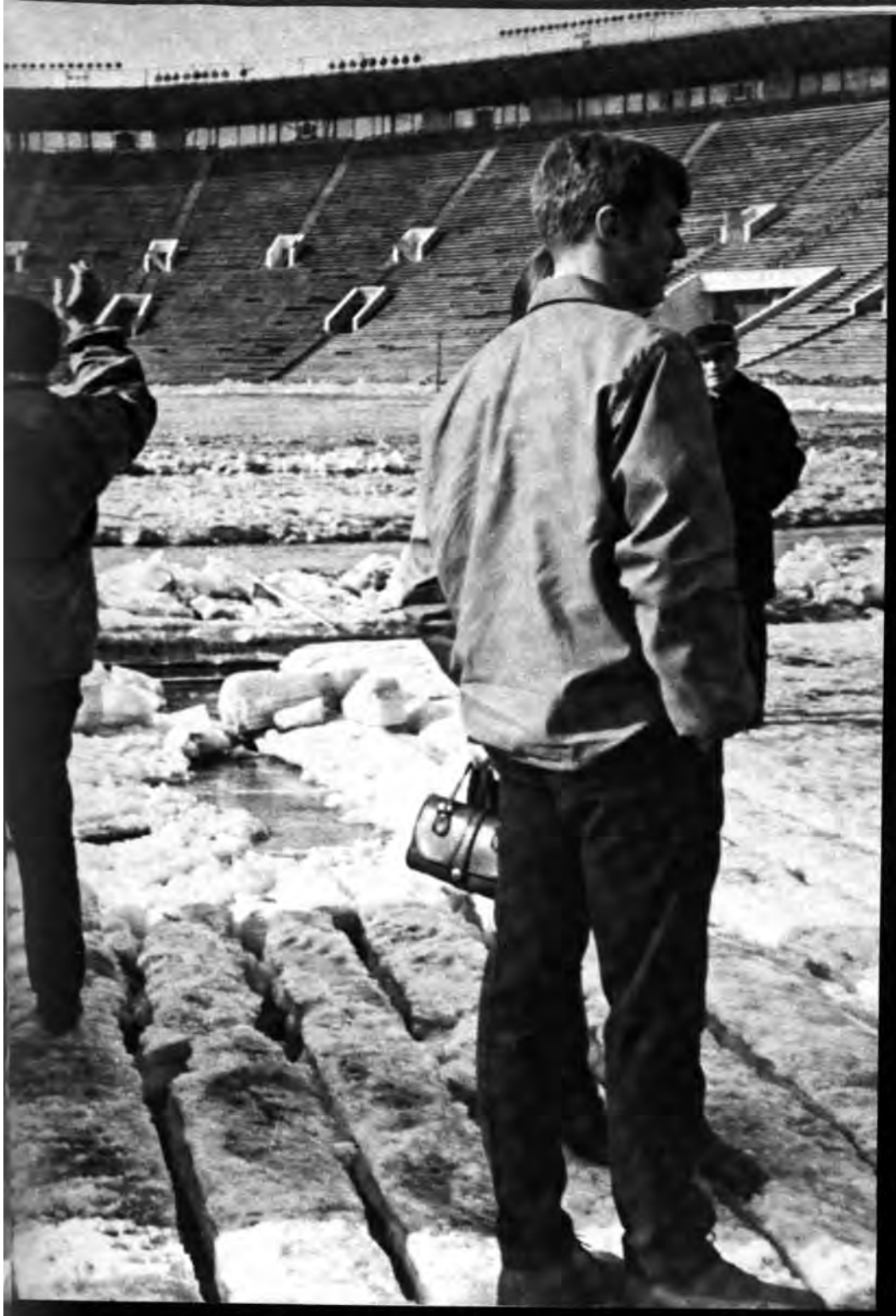
American Sports Ambassadors

at Soviet Stadiums

By Vladimir Brodetsky
SOVIET LIFE Correspondent
Photographs by Yuri Dalyagin and Nikolai Sharando







There wasn't much doing at the big Lenin Central Stadium in Moscow when this young hockey contingent from the U.S. visited. But the cries of joy and sighs of disappointment can be heard for miles around this giant sports center when soccer games are played here in the summer. The 18 Americans—the Sports Ambassadors, as they called themselves—were picked from more than 100 teenagers who wanted to make the trip. They visited Leningrad and Moscow, winning two games and losing the last one. Right top: Jake Haertl was the head coach and contingent leader. Chuck Ritchie was there as interpreter.











The American goalie couldn't stop this goal from being scored, but the visitors won the game with Brigantina by a score of 14-3.

The visitors held a comfortable lead in their game with a Moscow junior team. Notice the "Hey, Hey, USA" next to the scoreboard.

Top right: When the Americans visited the open-air pool at Lenin Central Stadium, they were accompanied by boys and girls from Moscow School 34, where the teaching is done in English.

Right: John Ligums chats with Andrei Bochkaryov (left) of Moscow School 34 during a match at the Kristall Rink. John did not play in this game but helped out by answering questions from fans.

AT THE END OF MARCH of this year, when coach John Mayasich and his boys were competing in Stockholm, another U.S. junior hockey team set off on an overseas trip—to the Soviet Union.

More than 100 youngsters wanted to go, but only 18 lucky Boston teenagers were selected by coach Jake Haertl and his assistant, Jim Logue.

The American Sports Ambassadors, as the players dubbed their team, launched their Soviet tour in Leningrad. With hundreds of fans looking on at the recently opened Yubileiny (Jubilee) Sports Palace, the visitors chalked up their first, convincing win over a group of local teenagers, 8-4.

The stay in Leningrad was, of course, not limited to hockey: Intourist guides offered a full program of museum and theater visits and sightseeing excursions.

After a trip to the Hermitage Museum Eugene Kinasewich, a Harvard University dean who accompanied the team, made this comment: "When you admire the treasures collected here and in other museums of yours, treasures which once belonged to a handful of people, you understand why the people could not reconcile themselves to such a difference in the standards of life. What is amazing is not only the wealth of these collections but the careful



At the Sports Museum of the Lenin Stadium, the Americans inspected the USSR senior national team's trophies.

Far right: In front of the Rossiya Hotel a SOVIET LIFE photographer took a last photo of the U.S. team.

Dave Hynes, a forward on the Sports Ambassadors' side, is in a festive mood after netting several goals in the game with the Brigantina team.



Mike Sico of the U.S. team enjoys a glass of tea during the first interval with a Soviet senior player.

Right: Among the Ambassadors' untiring boosters were these American youngsters who were touring Moscow.

His knowledge of English earned student Alexander Kalugin (center) this autographed hockey stick.







way they are preserved. Although there were trying moments in the history of your country, these treasures remained intact."

"We watched famous figure skaters Ludmila Belousova and Oleg Protopopov practicing in Leningrad," Jake Haertl said. "We followed their difficult program as closely as the Leningrad experts who came over



to look at their idols. It was a splendid show."

From Leningrad the U.S. players traveled to Moscow to face Brigantina, a junior district team, on the Kristall Rink at the Central Stadium. The overseas challengers romped to a 14-3 victory.

Later Haertl, in the lounge of the Bucharest Hotel in Moscow, shared his impressions of the first tour by U.S. junior stickmen in the Soviet Union.

"What do you think about the way the games were organized?" I asked.

"Before we set out on our trip, we knew that your country was efficient at promoting sports competitions on any level, but our reception and the arrangements for our tour exceeded all our expectations. To begin with, we were able to practice and play on the best rinks."

"How good would you say your team was, and do you think the games you played here were worthwhile?"

"We have some very promising players. In my opinion, one of them, Dave Hynes, will soon make the U.S. national amateur team. As for the games between junior teams of our two countries, I think they were important. Such contacts are very welcome. We'd like to see your boys playing in our country.

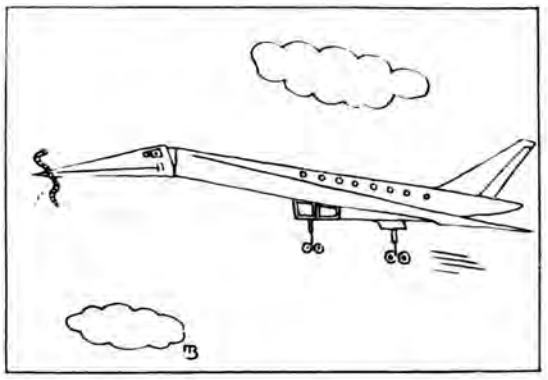
"My boys were much impressed. The tour will also give a better knowledge of Russia to those who hear the story from our players and see the pictures they took in Moscow and Leningrad."

"What impressed you most about the tour?"

"As a sportsman, I was impressed by the sports centers and facilities I saw in your cities—the ice stadiums, swimming pools and gyms. And, of course, by our meetings with the people of your country. Most characteristic of the Russians, I think, are their serious attitude toward work and their pride in their country, which won a difficult victory in the Second World War. I was touched by their sincerity and warmth."

Before the Sports Ambassadors left for home, they played their last game, this time against a USSR first league senior team. Although the guests lost, Jake Haertl's high opinion of Dave Hynes was confirmed: He netted a goal in this tough contest.

HUMOR



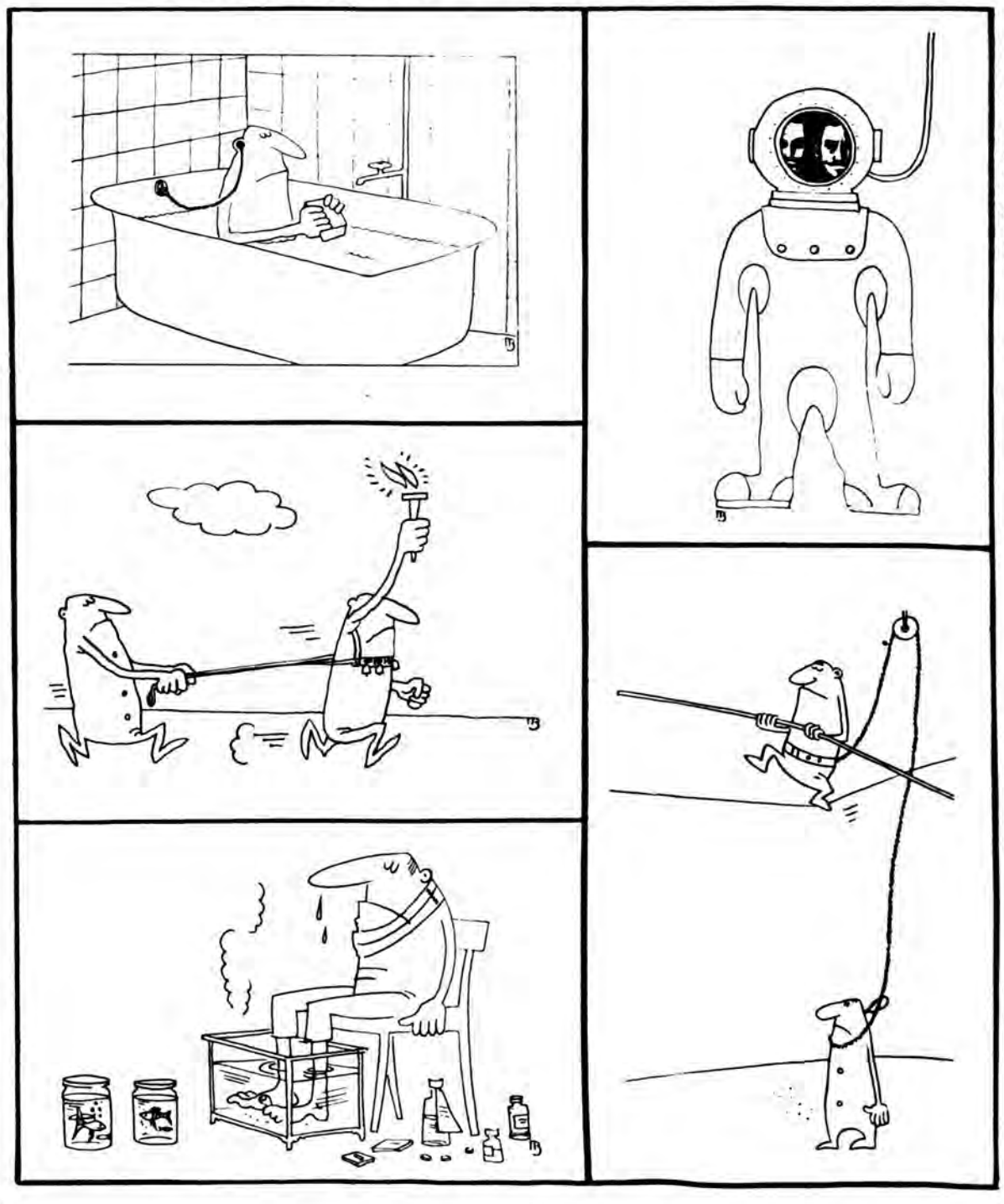


Vitali Peskov's Silent Laughter

By Mikhail Andrasha

VITALI PESKOV'S lucky star rose in 1967, when he was 23 and still doing army service. In his spare time he drew cartoons and sent them off to Moscow newspapers and magazines, with little hope of seeing them in print. Like many other young servicemen, he also took correspondence courses. Then a group of his cartoons was accepted by the popular youth monthly Smena *and appeared as a series in the magazine. His humor, now mild, now melancholy, now sarcastic, won him an immediate audience. His cartoons are laconic. "I prefer silent laughter and uncaptioned drawings," Peskov says.*

Now back in civilian life, he is majoring in applied art at the Textile Institute in Moscow.



HUMOR



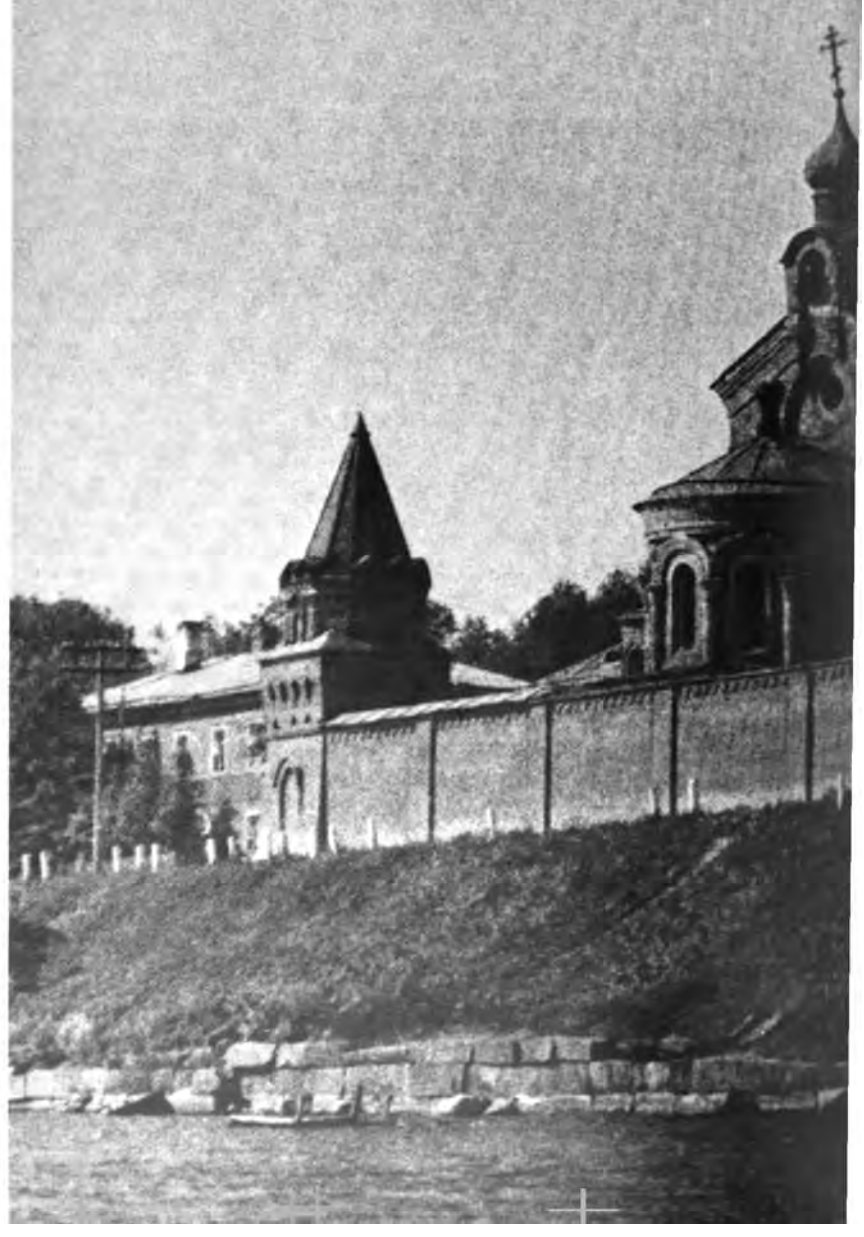
NIKOLAI NAUMOV AND YEVGENI MARETSKY OF THE NOVOSTI PRESS AGENCY, MOSCOW, ACCOMPANIED BY MECHANIC YURI KONSTANTINOV, SAILED A SMALL BOAT ACROSS THE ENTIRE EUROPEAN PART OF THE SOVIET UNION. THE JOURNEY ALONG RIVERS AND ACROSS LAKES, NATURAL AND MAN-MADE, STARTED AT LENINGRAD, ON THE GULF OF FINLAND, AND ENDED A MONTH LATER FAR SOUTH, IN THE UKRAINIAN CITY OF KHERSON ON THE BLACK SEA.

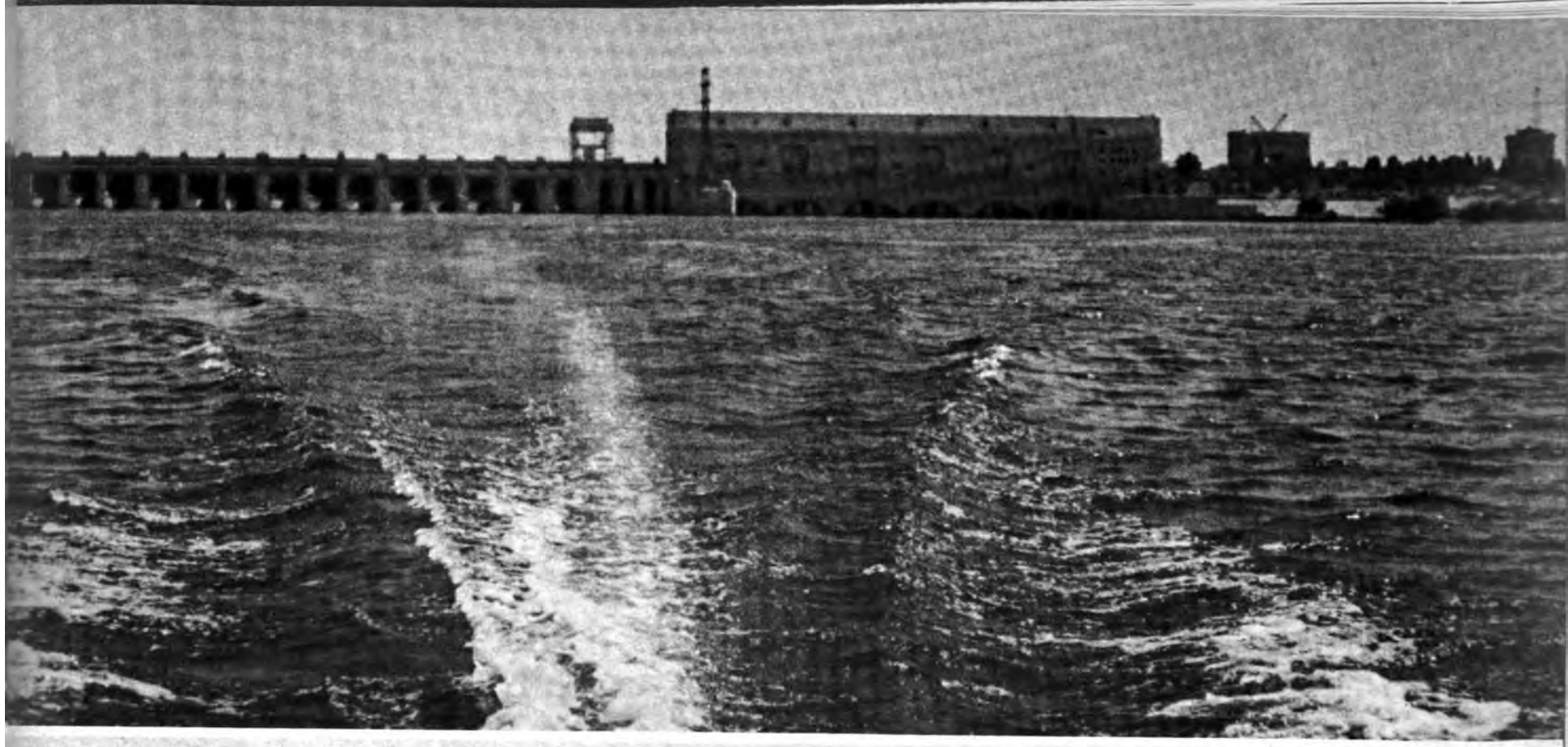
THIS IS NIKOLAI NAUMOV'S ACCOUNT OF THEIR TRIP.



The dam of the Kakhovka hydropower station turns the Dnieper River into a real sea.

Ladoga, legendary settlement on the Volkhov, is called Avdeguborg in Norse sagas.





FOLLOWING THE ANCIENT WATERWAY

2,000 Miles Along the Route Followed by Russian Traders and Scandinavian Vikings

PHOTOGRAPHS BY NIKOLAI NAUMOV AND YEVGENI MARETSKY

I COULDN'T SAY what provided the impetus: perhaps Rockwell Kent's book *N by E,* in which the prominent American artist describes his voyage from New York to Greenland in 1929, or perhaps it was our childhood fondness for Vikings, who left behind a trail of historical memories in our country. At any rate, we decided to retread, or rather reboat, the ancient water route.

A Bit of History

The Slav farming tribes settled on the territory of what is now the European part of the Soviet Union at the very beginning of our era. About the sixth century they began to group into communities that were small and transient at first but then grew and became permanent. Between the sixth and the ninth centuries they developed into a strong early feudal Slav state, Kiev Rus, which spread over a vast area from Lake Ladoga in the north to the Black Sea in the south, and from the Carpathians in the west to the Middle Volga in the east.

It was called Kiev Rus because Prince Kiy had long before founded a city (today Kiev, the capital of the Ukraine) on the Dnieper River. The word Rus, Russia, came from the name of the Slav tribe of Ruses, or Rosses, living on the shores of the Ros River, which flows into the Dnieper not far from Kiev. The Slav tribes began to rally around the Rus tribe, and its name became theirs for many centuries afterward.

The Ruses, or Rosses, had blazed the trail which we chose for our trip. Historians know the route as the "Great Waterway from the Varangians to the Greeks and from the Greeks," (the "Varangians" meaning the northern Scandinavian nations, and the "Greeks" the southern Middle-Eastern nations, including Byzantine). Nature must have wanted to provide this route for ancient travelers. The map of the European part of Russia is criss-crossed with rivers, large and small, flowing off the Central Russian Upland. Some run south, others north, and the sources are so close that a traveler can cross the country from north to south and back without leaving his boat, especially in spring flood. Only in two or three spots does he have to drag it over dry land.

That is what the ancients did. Under sail or by oar, they traveled down the Dnieper and across the Black Sea, which was then called the Russian Sea, to Byzantium. The way to the Greeks was not always safe. Nomads often lay in ambush at the Dnieper rapids and in the steppes nearby. When they traveled "from the Greeks," they sailed up the Dnieper, then along its small tributaries and, after dragging their boats over dry land, finally got into the Western Dvina. Again after some portage, they reached the Lovat River and then, via Lake Ilmen, the Volkhov River and Lake Ladoga. From there the Slavs worked their way up the Neva and into the Gulf of Finland and the Baltic (or "Varangian") Sea. Some adventurers would continue on around Europe.

The Scandinavian Vikings, or Varangians, used this Slav route later, in the ninth and tenth centuries. Following their resounding victories in Europe, they invaded the territory of the ancient Rus state, though some of them, having been rebuffed, came to terms with the Slavs, entered their service or turned to trade.

Having decided to follow the Vikings, we chose the same route. Though our boat was not a replica of an ancient *ladya* with stalwart oarsmen but a small motorboat with a 25-horsepower outboard engine, and though no nomads menaced us en route, we learned the difficulties of the passage the hard way and took our hats off to the ancient travelers.

Why by Boat?

Nowadays a trip across old Rus from end to end, that is, from the Gulf of Finland to the Black Sea, is a trifle—just under 2,000 miles. The vacationing Leningrader can be splashing about in the warm surf of the Black Sea after a two-day trip by train. By air the journey takes two or three hours for roughly the same fare. Some drive to the southern beaches; others prefer to travel by comfortable passenger ship. The system of canals and navigable rivers of the European part of the Soviet Union now links five seas: two in the north (the White and the Baltic) and three in the south (the Black, Azov and Caspian).

In summer hundreds of thousands of vacationers take this route, as do thousands of tons of cargo (oil, coal, machinery, grain and building materials). At least three-quarters of the once famous "Great Waterway from the Varangians to the Greeks" is still heavily traveled. However, in those places which were especially difficult, that is, in the watershed of the rivers of Central Russia, the present route is a long way from its ancient predecessor. The only reminders of the former importance of these areas are the ancient cathedrals, the watchtowers, the grave mounds in which archeologists are digging busily, and the names of villages like Volkovaya, Volok, Privolochye (from the word *volok*, which means portage).

It was the ancient route we were interested in. We wanted to see what was doing along it today. Altogether we had to cross several regions of the Russian Federation and then eastern Byelorussia and the heart of the Ukraine.

From Leningrad Along the Neva

Our starting point is Leningrad. Though this second largest Soviet city has a population of close to four million people, none of them realize the significance of the occasion. Our boat leaves the quayside of the Neva quite unobtrusively and starts on its journey, bound eastward. There are all kinds of ships here, and more distinguished travelers than we could have been lost among them. True, we are noticed by a local newspaperman, and his readers perhaps will learn of our effort to discover what had been discovered a thousand years before.

So we say good-by to Leningrad, especially to its endless strings of palaces and parks facing the Neva. Our ancestors made this "window on Europe" (to which SOVIET LIFE once devoted a whole issue, October 1967) with breadth and imagination.

As we boat up the river, later pages of history unfold. There, half a century ago, in the summer of 1918, foreign merchant ships cast off from the granite waterfront for the first time after the October Revolution and thus initiated economic contact between the outside world and the young Soviet Republic. Incidentally, these ships belonged to Swedes, descendants of the Vikings.

And there Colonel Raymond Robbins admired the Neva. Colonel Robbins came to Petrograd (as Leningrad was called between 1914 to 1924) in June 1917 with an American Red Cross mission. But perhaps Colonel Robbins was not in the mood for idyllic promenades. He came in hard and troubled times, and the situation he found himself in was very confusing, especially for a foreigner. However, he was a farseeing and sober-minded person, and shortly after the October Revolution he came to the conclusion that Bolshevik power was real and lasting. Later this dynamic American conducted important (though semiofficial) negotiations with Lenin.

Leningrad is behind us now, and ahead is the mouth of the



Nikolai Naumov, author of this narrative, doubles as cameraman.

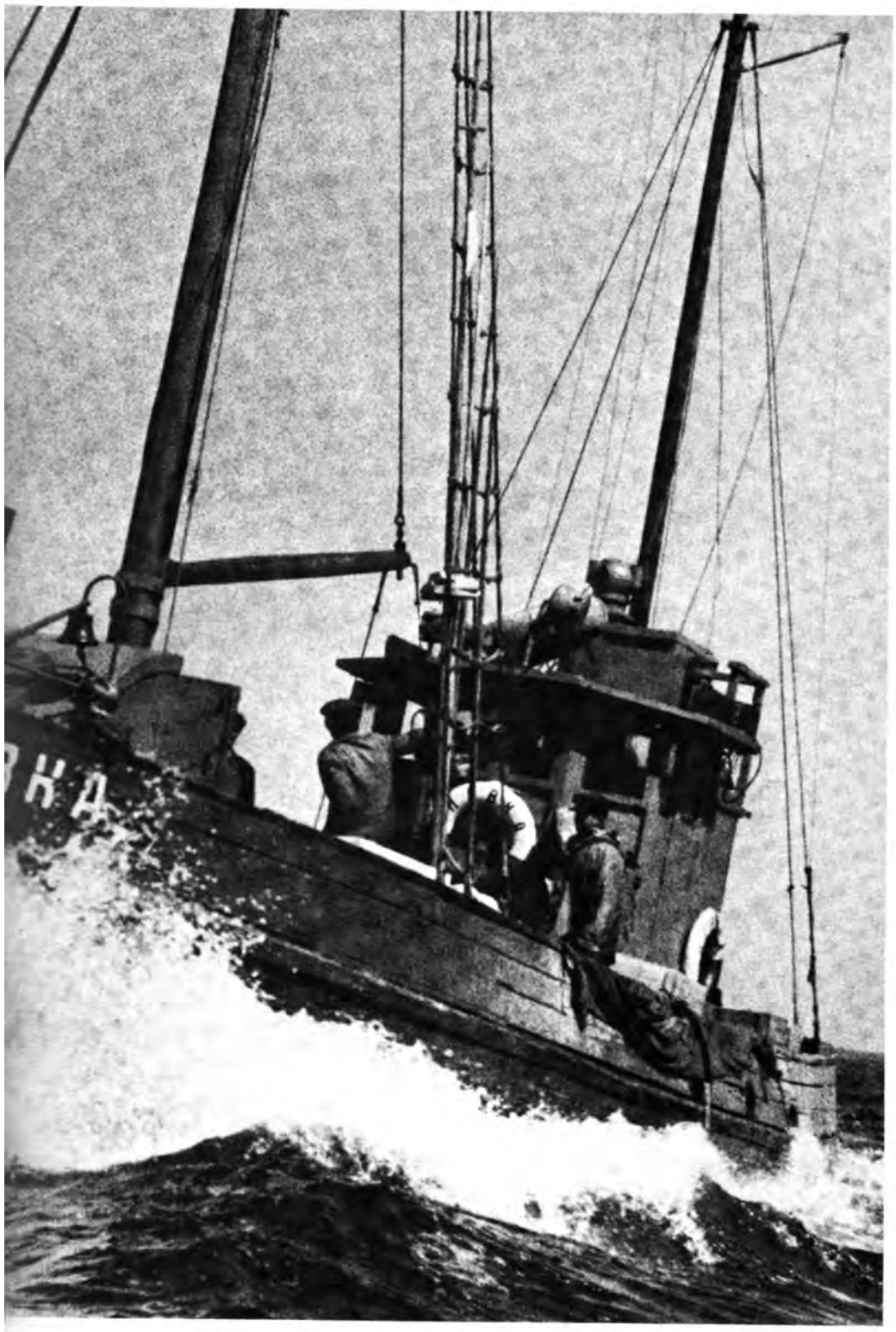
Izhora, which flows into the Neva, and the city of Ust-Izhora (*ust* or *ustye* means mouth). We can see the chimneys of a machine-building plant rising above newly built houses. The products of this plant, trademarked "IZ," are known in many countries. Seven hundred years ago there was a bitter fight here between Russian warriors and a Swedish flotilla which had entered the Neva (at the time the descendants of the Vikings were still marauding).

Another tributary of the Neva is the Tosna, with the village of Ivanovskoye perched on its higher bank. When the Second World War was at its height, in August 1942, the nazi drive on Leningrad was stopped here. Not far away, at a little village called Maryino, our troops began to break through the Leningrad blockade in January 1943.











Our boat locks through the Volkhov hydropower station.

This Volkhov blonde has typical Northern Slav features.



Anatoli Moskalenko of the steamer Maxim Gorky.



What the old Slav voyagers had to do in these waters.



A leisurely Dnieper cruise from Kiev to the Black Sea.



These Ladoga fishermen are speeding to port with their catch before the weather really turns bad.



riding their timber
cow and other cities.

white churches and
of riverside forts.

Waterside view of the Novgorod Kremlin, with its St. Sophia Cathedral, center, and belfry, on left.





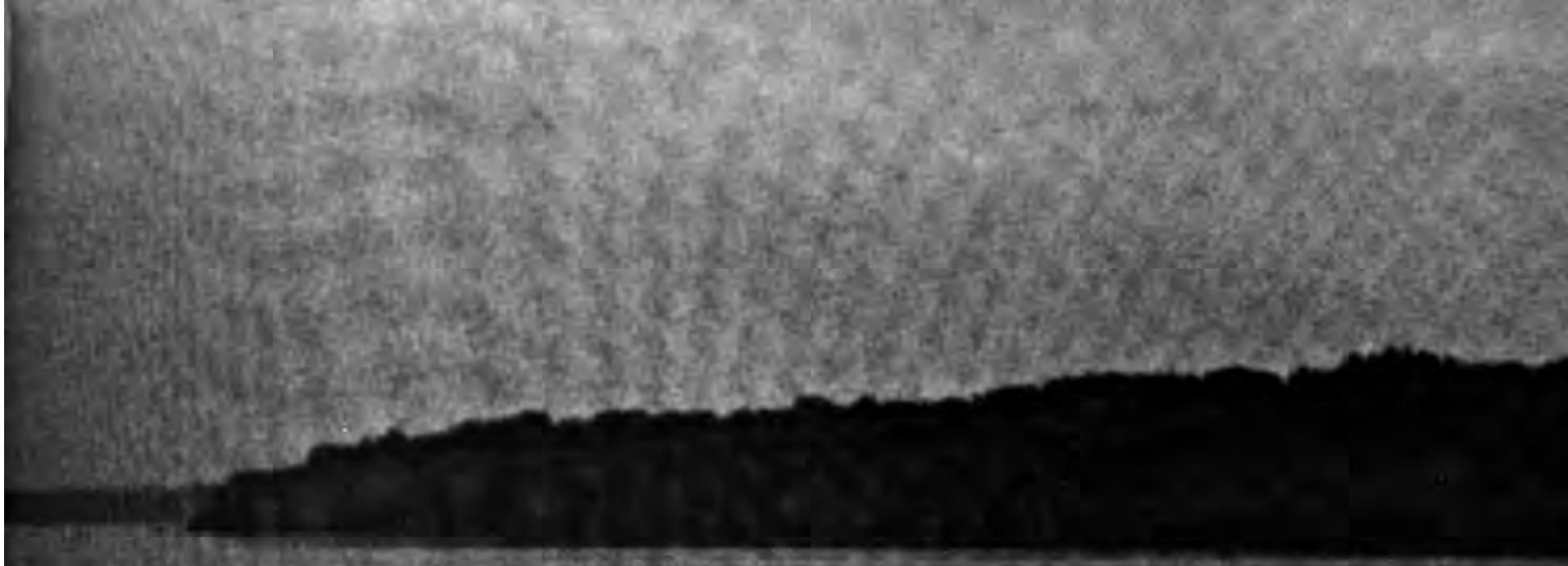


Lake Ilmen, near Novgorod, abounds with fish. Folklore and the old manuscripts say so and so do anglers today.

Faina Durova, a molder at the Volkhov ceramics factory, says its porcelain is the world's best.



Russian novelist Nikolai Gogol noted that birds rarely reached the middle of the Dnieper River.



Along Lake Ladoga

We have left the Neva and are near Lake Ladoga, which contributes its waters to the 48-mile-long but wide and deep Neva, navigable for seagoing ships as well.

A storm is coming up. We put on life jackets and try to cross the lake. But a dark, seething wave strikes us from the left; another tops the windshield and splashes us from head to foot. Obviously we won't be able to cross. The lake has an area of 7,000 square miles and is up to 1,200 feet deep in spots. In a storm this is dangerous water even for big ships.

The solution was found 250 years ago. A bypass canal was dug along the very edge of the southern shore on the order of Peter the Great, the founder of the city from which we started our journey. The czar had no mercy on the people, who were driven here from the depths of Russia. In December 1720, some 18,000 soldiers and Cossacks were brought to the lake, and six months later only 2,000 able-bodied men were left. The rest died or were crippled for life by the unbearable conditions and hard labor.

To escape the storm, we turn into the canal, where the water is perfectly calm. The banks are neatly dressed in stone. Thick bushes and a resinous colonnade of pines stretch overhead. The silence is unbroken except for the whistling of birds. It is hard to believe that the big lake close by is in turmoil. It is also hard to believe that this many-mile-long waterway was made by pick and shovel. Later a new and wider canal was dug next to Peter's. It was subsequently modernized and is now part of the Volga-Baltic shipping system.

A village rises to the starboard, Kobona. During the war Kobona played a special role in the destiny of nazi-encircled Leningrad. When the city was out of food and fuel, the besieged people made a desperate attempt to reach the southern shore of Ladoga, which was not held by the enemy, across its treacherous ice. This road was a true lifeline. In spite of bombing and shelling, trucks carried medicines, fuel and food for the besieged, cold and hungry city. Kobona took the wounded and sick out of the hell of the many-month-long blockade.

We walk across the village. Its typical northern log cabins have windows that are cut high above the ground to keep out the cold and snow. Orchards run riot with gooseberries and currants. Rich water meadows all around are dotted with grazing cattle.

Fishing is the main occupation here, and all life in the village is centered on the water. People visit each other and often go shopping by boat, since the village lies on two canals and there is a river not far from the lake.

The lake abounds in fish, and farther south stretch endless forests full of wildlife. Not far from a forester's cottage on the bank we see what looked like toy wigwams in the rushes. We are told that ondatra, or muskrat, settled here in large numbers.

At Home with Fishermen

Once upon a time (historians say from the fifteenth century) a monastery surrounded by walls and ditches stood where the Volkhov discharges into Lake Ladoga. Whenever it was necessary, the humble monks transformed their monastery into a fortress. In 1703 Peter the Great came to the monastery. Recognizing its strategic position, he ordered a city built on the site. Thus New Ladoga. Today it is a large port. Not far from here is the central section of a large fishing cooperative whose members come from 14 villages scattered along the shore of Lake Ladoga.

Alexei Sukhanov, chairman of the cooperative, is a typical Northerner: tall, broad-shouldered, bright-eyed, with a sailor's weatherbeaten face. But for talkativeness he is more like a Southerner. He guides us to the cooperative port. The harbor is crammed with fishing and auxiliary ships of all sizes and classes. When we tell him we have to go on that same day, he is shocked.

"You just can't go; you must see our fishing and taste our fish soup."

In the morning we accompany the fishermen to Lake Ladoga. Now we realize what would have happened if we had tried to cross in our boat. Even the powerful fishing vessel has difficulty with the ferocious waves.

It takes some doing to keep our balance on deck, but we manage somehow and talk to captain Vladimir Makarov, motorman Pyotr Tikhonov and seaman Alyosha Yakovlev, a huge 24-year-old fellow. Alyosha is studying by correspondence at a Leningrad specialized secondary school for the fishing industry and will soon be captain of a ship like this one.

Now the shore is out of sight. The waves become smoother and calmer. But the wind is still high, and the fishermen want to finish the job as soon as they can and get back to shore. The metal cases for catch are filled with bulky zanders, lake whitefish, pike and perch.

In the messroom we are treated to the traditional fish soup, which really lives up to its reputation.

Up the Volkhov

Leaving New Ladoga we head down the Volkhov, due south. About seven miles upstream is a small but unusual settlement —Old Ladoga.

Perched on the high bank of the river, it looks like an ancient city pictured in a fairy tale. The sun is already behind its dark blue, jagged silhouette, and the background of a golden sky imparts an especially solemn look to the walls and towers of the fortress, the domes of 800-year-old churches, the lookout mounds and ramparts. At the dawn of Rus these ramparts were the stronghold of the Slavs on their route to the Baltic.

There are many artists here, apparently attracted by the beauty of the ancient buildings and the scenery.

As we stroll around the town, we see an interesting botanical garden grown by children. During the Civil War 50 years ago, an orphanage was founded here for youngsters whose parents died fighting for the Revolution. The first generation of these children laid out the garden. Their successors raise new kinds of apples and wheat. Though the winter here is hard, they grow even grapes and watermelons.

The next morning finds us at the dam of the Volkhov power station. When Robert Konchikov, the engineer on duty, learns the purpose of our trip, he kindly sluices our boat through without waiting for other ships. We were helped this way more than once; people were interested in our venture.

We inspect the power plant, the forefather of today's hydropower projects on the Dnieper, Volga and the rivers of Siberia. The Volkhov plant was built between 1921 and 1927, when the economic aftermath of the war was at its worst and when there was no adequate building equipment. It was the first power plant built after the Revolution. The town of Volkhov later sprang up around it.

"Our Master, Great Novgorod"

The farther south we go, the more quickly we want to get to the Russian tourist Mecca: Novgorod. Forests, fields and villages float by on both banks of the Volkhov. All this is the land of the ancient Novgorod state.

After the disintegration of Kiev Rus (early twelfth century), Novgorod became a sovereign feudal republic, where the *veche*, a general assembly of all citizens, acted as parliament. Its contemporaries called the republic "Lord Novgorod the Great," a tribute to the power and influence of this administrative, industrial and commercial center of northwestern Rus. It was only in the fifth century that Novgorod became part of the Russian state founded under the aegis of Moscow.

The ancient kremlin of Novgorod rises almost from the water, with whitestone cathedrals on the opposite bank. This museum of antiquities nestled in greenery coexists in harmony with newly built houses, whose strict utilitarian lines underscore the fanciful imagination of the ancient builders (the June 1968 issue of SOVIET LIFE showed Novgorod in pictures).

Many cathedrals of Novgorod were either razed or damaged beyond recognition by the Nazis. The restorers had as big a job as their ancestors who did the original building. They had to reconstruct the city practically from scratch, architectural monuments as well as industrial plants, schools, theaters, hospitals, all the municipal facilities and all the houses. It took eight years.

A 15-year plan for the development of Novgorod has been approved. The area of the city is to double. The historical monuments will be located in a restricted zone near which no construction will be allowed.

We forget about our strict schedule and for two days stroll

around the city taking pictures.

We are roused from this hypnotic state by a weather forecast on the radio. Windy weather is expected, and we still have another lake ahead—Ilmen.

In old legends and chronicles the lake is called "Lake Ilmen the Great." Trader Sadko of Novgorod, the hero of folk sagas and Rimsky-Korsakov's opera *Sadko,* went to the underwater kingdom at the bottom of this very lake. As soon as we reach the spot where the Volkhov flows into the lake, a small but fierce swell pushes our boat around, and since no underwater kingdom attracts us, we quickly moor.

Land of Partisans, Lumbermen And Old Songs

We decide to make use of the morning quiet to cross the lake and get to the mouth of the Lovat, which stretches almost to the Western Dvina. At its lower reaches the Lovat forms a delta, with the banks overgrown by dense mixed woods, a paradise for wildlife. Also, a paradise for sportsmen. Wild ducks fly up with a splash right from under the bow.

We are running to the accompaniment of buzzing mechanical saws and axes. Lumbering has long been the major industry of this area. The lumber goes to the cities of Novgorod Region as well as to Leningrad and Moscow. Some 25 miles from the mouth of the Lovat, in the ancient village of Parfino mentioned as early as the fifteenth century, there is a big rafting center. We have to stop here because the river is choked for a couple of miles with logs.

With great difficulty the rafters negotiate our boat through to open water.

Our engine on again, once more the wooded banks rush past us. During the war these forests sheltered the partisans. The resistance to the Nazis was so strong here that a partisan area of more than 400 villages sprang up in the autumn of 1941, a great Soviet island in the middle of occupied territory which the Germans were afraid even to come near.

In some places the earth is still marred by the ugly traces of war: trenches, rusty helmets, barbed wire. On the bank of the Lovat we come on a group of youngsters touring the wartime battlefields. These tours are popular. The children study the history of their area, look for the graves of unknown heroes, keep them in order and sometimes do intensive research to find their names.

In the middle Lovat we really learn what it is to travel in a thousand-year-old way. More than once we have to lift the engine, jump into the water and drag the boat over shallows. When even this doesn't work, we have to tow. Fortunately for us, we are nearly always helped by local people, including collective farm drivers, who offer their trucks to carry our boat over especially rough spots.

So we are moving across mid-Russia, populated in times of old by the Krivichi, one of the 15 principal tribes constituting the union of Eastern Slavs. We see landscapes untouched by man's hand: wooded hills, silvery streams and blue lakes.

In particular, we see the Kunya River—both where it falls into the Lovat and where it begins from a tiny spring—and we are told the origin of its name: *kunitsa* (marten) had once been rife here. From the upper reaches of the Serezha, the Kunya's tributary, we start, following the ancient pattern, the portage down, toward the river Toropa, which flows into the Western Dvina.

On our map we note hundreds of villages and quiet towns with names carrying the old Slav lilt: Ploskosh, Rechyane, Rusanovo, Velizh, Surazh, Zarech. We pass Toropets, an ancient town surrounded by three lakes. It is through this town that the Toropa we mentioned flows. Near the river (its name is from the word *toropitsya*, to hurry) is a huge mound that was once a lookout post: the Great Waterway of the Rus was well protected. It was a town not only of traders, but of warriors. One of the streets is still called Streletskaya Street (from the word *Streltsy,* as army irregulars were called before Peter the Great). Another street is called Berdyshy (the *berdysh* is a medieval halberd-type weapon).

The Toropets land gave Russia the great composer Modest Moussorgsky (1839 to 1881), who was born and spent his childhood here. When we heard Toropets songs, transmitted orally since pagan times, we realized the source of the power and originality of the music of the composer of *Boris Godunov* and *Pictures at an Exhibition.* In Toropets itself, as well as in neighboring villages, there are any number of custodians of the old melodies, and as we listen to them, we feel those dizzy depths of history from which they sprang.

An Electric River

We leave the basin of the Western Dvina and approach the Dnieper, one of the country's largest waterways, linking three republics: The Russian Federation, Byelorussia and the Ukraine. The Dnieper is Europe's third longest river (about 1,400 miles), shorter only than the Volga and the Danube, with a 193,000-square-mile basin. This is a region with hundreds of cities and townships, thousands of villages, factories and mines, heavy river traffic and a population of many millions.

The Dnieper is extraordinary. Two-thirds of it is not a river, but a wide expanse of water, looking like a long sea bay stretching to the Black Sea. The middle and lower Dnieper has indeed been converted into an artificial water reservoir 600 miles long, broken only by the dams of hydroelectric power plants.

Imperceptibly but powerfully, as the Dnieper rolls south it does



Zaporozhye is now a major steel center.



Volkhov was the first Soviet-built station.



North Russian sailors inherit their trades.



Saxophonist on a beach.



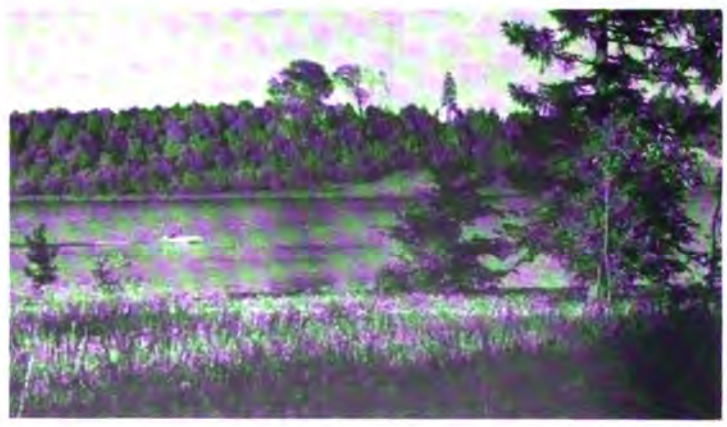
Mogilev, Byelorussia, on the shores of the Dnieper River.

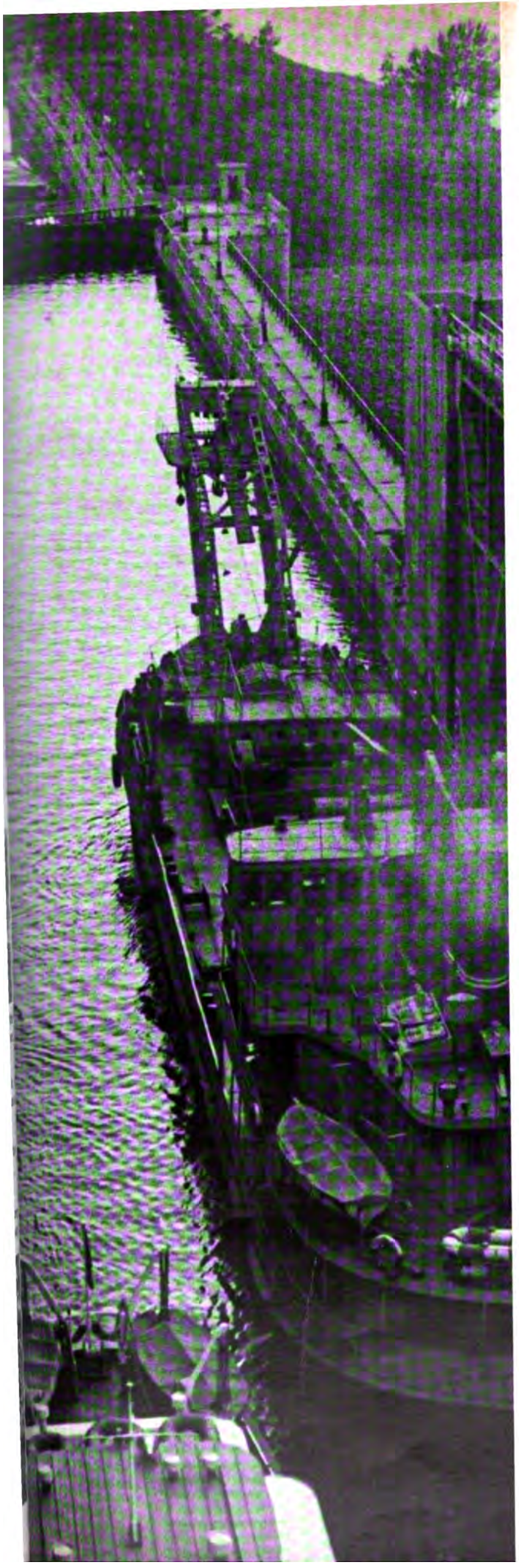


Next to our last lock, at the Dnieprovskaya station.

En route we see any number or artists painting the . . .

. . . lovely countryside along the ancient Slav waterway.





its tireless work, turning the turbines of a cascade of hydroelectric power stations: the Dorogobuzh, the Smolensk and others, down to the Dnieper and Kakhovka, 14 in all.

They generate a sea of energy flowing into the area and changing its life. This is especially graphic in Byelorussia, once a poor and backward land.

The Dnieper divides the Russian Federation and Byelorussia. The inscriptions on landing stages and the Byelorussian speech on the right bank testify to that. There are no special contrasts though. On both banks the same shadowy oak groves, coppices, orchards, and spring water meadows with rich green grass, the same fields and villages.

Byelorussia was always peasant land. Farming is still important. The staple items are rye, sugar beet, flax and potatoes, called *bulba* here. Great stretches are under potatoes, which are shipped to many parts of the country. There is not much arable land though; about a third of the republic's area is woodland. The banks of the rivers are lined with ship pines and stalwart oaks, and farther on is dense forest, splashed with sunlit meadows. The Belovezhskaya Pushcha National Park in the southwestern part of Byelorussia is a rare forest museum of 185,000 acres. A very scarce and old animal, the aurochs, a relative of the American buffalo, ranges these forests.

Byelorussia is also a country of marshes that have long plagued the farmer, cutting down the acreage of arable land. Reclamation is well under way; more than two million acres of fertile land have already been drained.

Now Byelorussia also has a diversified industry. It makes trucks, tractors, metal-cutting machine tools, TV sets and radios. Building materials and chemicals have been expanding in recent years. And the Dnieper with its big hydroelectric power stations plays a large part in all this.

The Byelorussian village of Loyev flashes by, and Ukrainian territory is now on the left bank. Radul, our first stop in the Ukraine, is the birthplace of the captains, pilots and sailors of nearly all the local ships.

A quarter of a century ago I passed this way, during the terrible war years, when cities were devastated and villages in flames. When our soldiers stopped the enemy at the Volga and then returned to the Dnieper as they liberated the Ukraine, they saw the whole horrible picture of nazi vandalism. The war took me across this land from east to west, and I did not see a single city, village or farmstead that was not devastated or gutted by the Nazis. The damage done in the Ukraine was estimated at 300 billion rubles. Hundreds of thousands of women, children and old people perished.

I stare at the banks. Will I recognize these places? Indeed, only the names and general contours of the terrain are the same. The rest is all different: new houses, new landing stages, new orchards and groves.

Villages on the Dnieper were always picturesque: the deep green of thick orchards, the sugar white of the cottages lurking in them, and the gold of wheat fields all around.

Large cities are also picturesque in the Ukraine. They have an air of vitality combined with the tranquility that greenery gives. They are not simply picturesque but large industrial centers. Their enterprises are even more productive now. Devastated by the Nazis, Kiev was practically rebuilt and spread to the left bank of the Dnieper. The neighboring cities Dnepropetrovsk and Dneprodzerzhinsk constitute one big industrial area; settlements of multistory houses and industrial buildings run for mile on mile along the river. The pattern is the same in Zaporozhye, Kremenchug and Kakhovka. There seems to be no end to this huge construction site roaring and breathing heavily into the blue southern skies.

However, in our age of explosive industrial growth, we must not forget about preserving nature, or else we will leave our children and grandchildren only descriptions of the beauty of these Dnieper expanses, steppes and forests. That is why purifying and absorbing equipment is being installed at all enterprises. No plant will start rolling unless such devices are adequate. Residential areas are protected by green belts. Especially picturesque areas are left intact for recreation only. That is what has been done, for example, to the famous wooded island of Khortitsa, an old Cossack area. The island has been converted into a recreation spot.

There are a great many beaches on the Dnieper, not far from cities. When the vacationers, river ship passengers, sailors from barges, and anglers tossing out their lines see the inscription on our boat: "From the Varangians to the Greeks," they wave us a happy journey. In fact, our voyage is drawing to a close.

We are sluiced through the dam of the Kakhovka Hydroelectric Power Station, the last of the Dnieper cascade. Several dozen miles on our trip will end; the markers will be the hoisting cranes and sea buoys at Kherson, Black Sea port and city of seamen and shipbuilders.

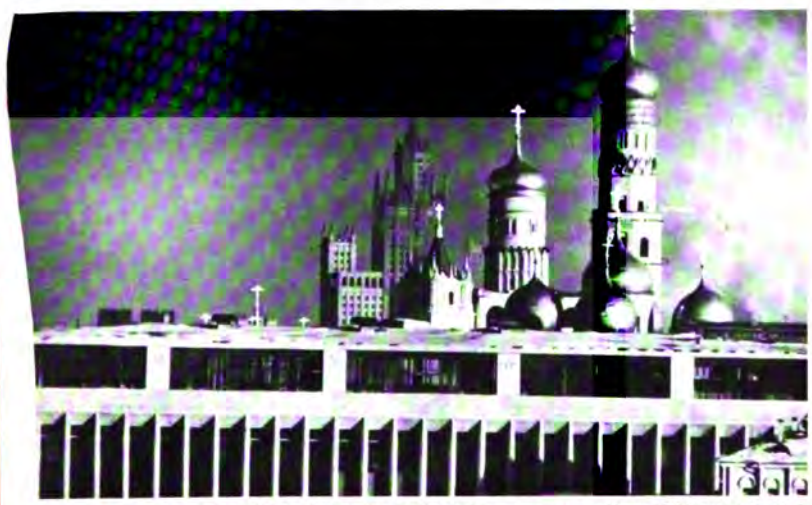
We run onto the stone embankment and walk down tree-shaded streets. Outside the seamen's club we hear Ukrainian, Arabic and English. Ships of many countries touch at Kherson.

We see big broad-shouldered fellows in sea tunics pouring out of the local navigation school. They are going down to the port, and in half an hour their training bark the *Tovarish* will set its white sails and put out to sea. Perhaps it is bound for the Bosporus, to continue along the Great Waterway from where we stopped.

NEXT ISSUE



War veteran Grigori Sklyarov is the chairman of a collective farm in the Central Black-Earth Area of Russia. He manages the daily affairs of the Semiluki farm, trying to expand production and raise the living standards of the farmers at the same time. He knows that he must spend funds on machinery to accomplish both tasks, but he also knows that unless the farmers are happy at their work, no machinery in the world is going to boost yields. Since the farm clears a quarter of a million rubles a year, there's money enough to carry out the building program—a sports center including a 700-seat stadium and swimming pool, a children's compound with nursery, kindergarten and summer camp, and various service facilities. But there are times when the chairman has to choose between building a clubhouse and raising wages. Although it's hard to satisfy everyone, Sklyarov seems to be doing it. He has been re-elected chairman for several years running.



Moscow, capital of the Soviet Union, is more than 800 years old. The city thus bears the traces of many historical epochs. Side by side with modern buildings of glass and concrete are ancient structures that go back to the times of Ivan the Terrible. The contrast has even penetrated the Kremlin walls. The all-glass Palace of Congresses has a place there along with the golden onion domes of the old cathedrals. The differences in the architecture may often conflict, but they help to present a visual history tourists find fascinating. A picture story tells about the daily life of this great centuries-old city.

History is also reflected in the decorations of a country. The first Soviet medal, the Order of the Red Banner, was bestowed on Civil War heroes for conspicuous gallantry in the struggle against the interventionists and internal enemies of the young Soviet Republic. The Order of the Red Banner of Labor was instituted for outstanding work in the five-year plans. Each new chapter of history brought new decorations.

Continuing the year-long commemoration of the centennial of Lenin's birth, there are excerpts from two books by Americans Albert Rhys Williams and John Reed telling of their first meeting with Lenin, and an article about today's Soviet power industry, the realization of Lenin's dream.

With an eye to the fifty-second anniversary of Soviet power on November 7, many theaters are re-creating on their stages the atmosphere of the early days of the Revolution by reviving popular old plays as well as showing new plays by young dramatists on this still exciting theme.

An article on soccer, starting with training children's teams and ending with the big-time competition of picked teams for the Leather Ball Cup.

COMING SOON

The Metro—subways in the Soviet Union.

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How I Built a House

By Yuri Kazakov

Drawing by Leonid Sergeyev



WHEN I WAS a little boy, I loved most of all to draw houses. I drew hundreds of them. I drew them in copybooks, albums, on the backs of photographs and on our wallpaper,

on the walls of houses and on fences,
on the paving in the yard,
and on the tiled wall of the kitchen.
I drew a house on every tile.

Other children also drew. But they drew different things, like little men and dogs, cows and cats, the woods, grass and the sun. I alone drew nothing but houses. I drew them one-storied, two-storied, with steep roofs and low roofs. Some houses had five windows, others eight, or 10, or only one window. Every house had a chimney, and every chimney puffed smoke. The smoke came out best of all.

The smoke came out so well that everybody would stop, overwhelmed, and say different things:

Some said:
"Oh-h-h!"
Others said:
"Did you ever!"
Still others said:
"I'll be darned!"
And some said:
"Well, I never!"

Everybody thought I would be a great artist. But I never became a great artist. Quite the opposite.

When I grew up, I turned out to have an awful lot of relatives. At first, I only had a father, a mother, a brother and an older sister. Then I began to have nephews,

then a wife,
then children,
then aunts, grannies, mothers-in-law, sisters-in-law, daughters-in-law, brothers-in-law, and cousins and second cousins,
and they in turn had
nephews, children, brothers-in-law, fathers-in-law, sisters-in-law and daughters-in-law.

It came to such a pass that I could no longer tell who was whose mother-in-law, and who was whose son.

During the day I worked, so that life was still bearable. The evenings were not so bad either. Everybody was up and running about, fussing, playing, crying, shouting, talking, frying, cooking and washing clothes. All of which made a festive impression. Like the streets on a big holiday.

But at night, when everybody went to bed, and I had to go to the kitchen for something or other, I felt very uncomfortable indeed. My relatives were sleeping everywhere—in the rooms, the hall and the kitchen. Some snored. Others breathed quietly. Still others did not breathe at all. I would light a match, step this way and that, tread on somebody's foot or hand, and conjure up the picture called

"The Night of a General After the Battle."

Everybody envied me so remarkable a family. But I felt something was missing. All day long at work I wondered what it was that was missing. On the way home I still kept wondering. At home I no longer wondered. I knew something was missing.

Suddenly, one night, I jumped up and yelled. All my relatives woke up but were unable to jump to their feet, because they were packed so tightly that they got in one another's way. But they were all able to think at the same time. So they all thought I was being murdered.

After yelling for about five minutes, I calmed down and said:

"Hurrah! I have it! I know what's missing! I've been missing a house! I'm going to build a house! It will be the finest house ever built! A house the likes of which none of you have ever seen!"

At this point all my relatives came to their senses. Switching on the light, they lined up to hug me and pump my hand. They all burst into tears and said all kinds of things about my being a genius, a fellow with brains, and that they had always believed in me.

"That's what I call brains!" they said.
"That's the stuff!"
"Hah!"
"Ho!"

Since everybody wanted to hug me, the last one's turn came in the morning. After which, tired but pleased, I went to work.

Then I got down to the job of building my house.

First, I carted up white stone and broken brick for the foundation,

bringing red tiles for the roof,

round yellow logs with drops of resin for the walls.

Then I brought:

planes, saws, chisels, drills, screwdrivers, hammers and braces.

I also brought:

chalk, lime, sand and brick,

thick nails for the floors and thin nails for the shingles,

a hundred cans of paint, in all kinds of colors—green, white, red, blue, orange, black and yellow,

glue, drying oil and lacquers,

window bolts, doorknobs, locks, hooks, cramp irons, screws, boards, racks, shingles, fence posts, roofing, pitch, oakum and putty, and out of all of this I began building my fine house.

I decided to begin with the smoke. I put the best materials into it. I glued and hammered it, smeared it with putty, screwed it together and whipped it up, corrected it with an ax and a chisel, and painted it all colors. Then the lime, plaster, logs, bricks, roofing, boards, sand and tiles came in. I drew designs and curlicues in the sky. The smoke now bent to one side, now stood straight up. In some places I shaved it with a plane and polished it. In others I left it shaggy. My smoke was many-colored—in one place it looked as though night or clouds had descended upon the yard. At another my smoke was the bluest of blues, with pink shadings, as though tinted by the sun.

In a month I finished with the smoke. It was so beautiful that you could not tear your eyes away from it. It was so tall that you could see it for a hundred miles around. Sometimes I bought a ticket for the electric train and rode 50 miles out to admire my smoke from the distance. From afar it was even more beautiful.

In all the villages and towns, people dropped their work to admire the smoke. And they said all kinds of things.

Some said:
"Oh-h-h!"
Others said:
"Did you ever?"
Still others said:
"I'll be darned!"
And some said:
"Well, I never!"

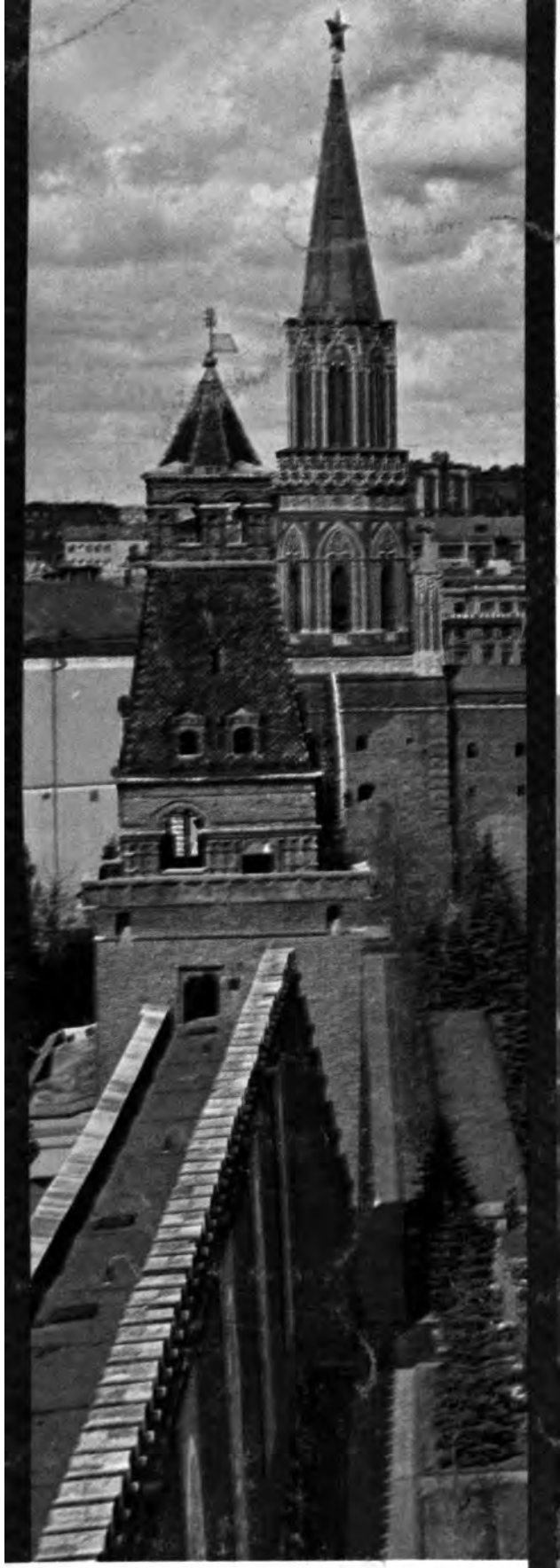
I was bursting with pride and happiness. Unable to contain myself, I said:

"I built that! That's my smoke!"

In reply, everybody looked at me, shook his head and said:

"Ah!"

But that was not the main thing. The main thing was that when I finished building my fine smoke, I had no material left for the house. Nothing, not a single nail! So I had nothing to build the house out of.



VLADIMIR LENIN

1870
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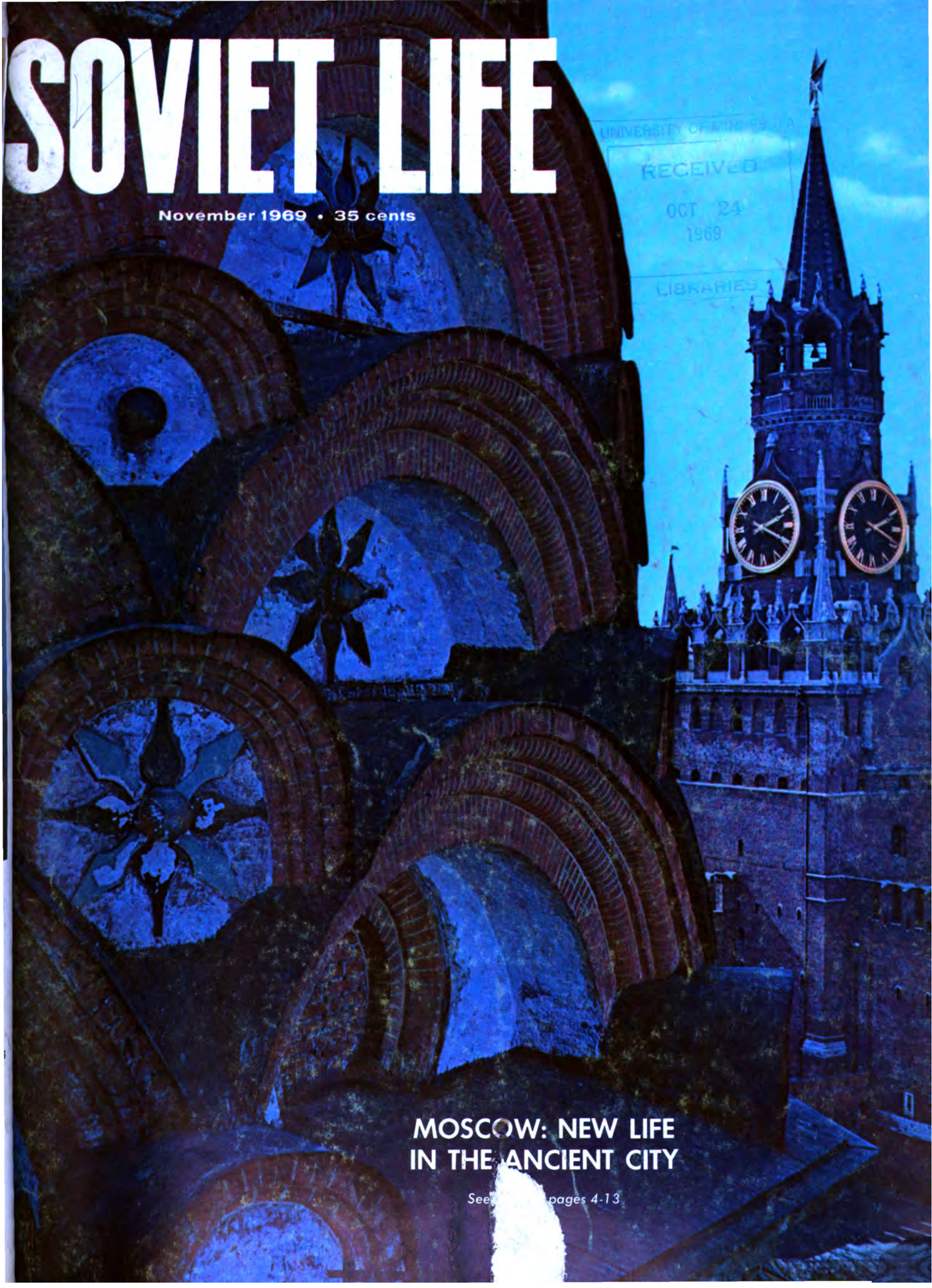
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SOVIET LIFE invites its subscribers to enter the Quiz Contest in the November issue.

SOVIET LIFE

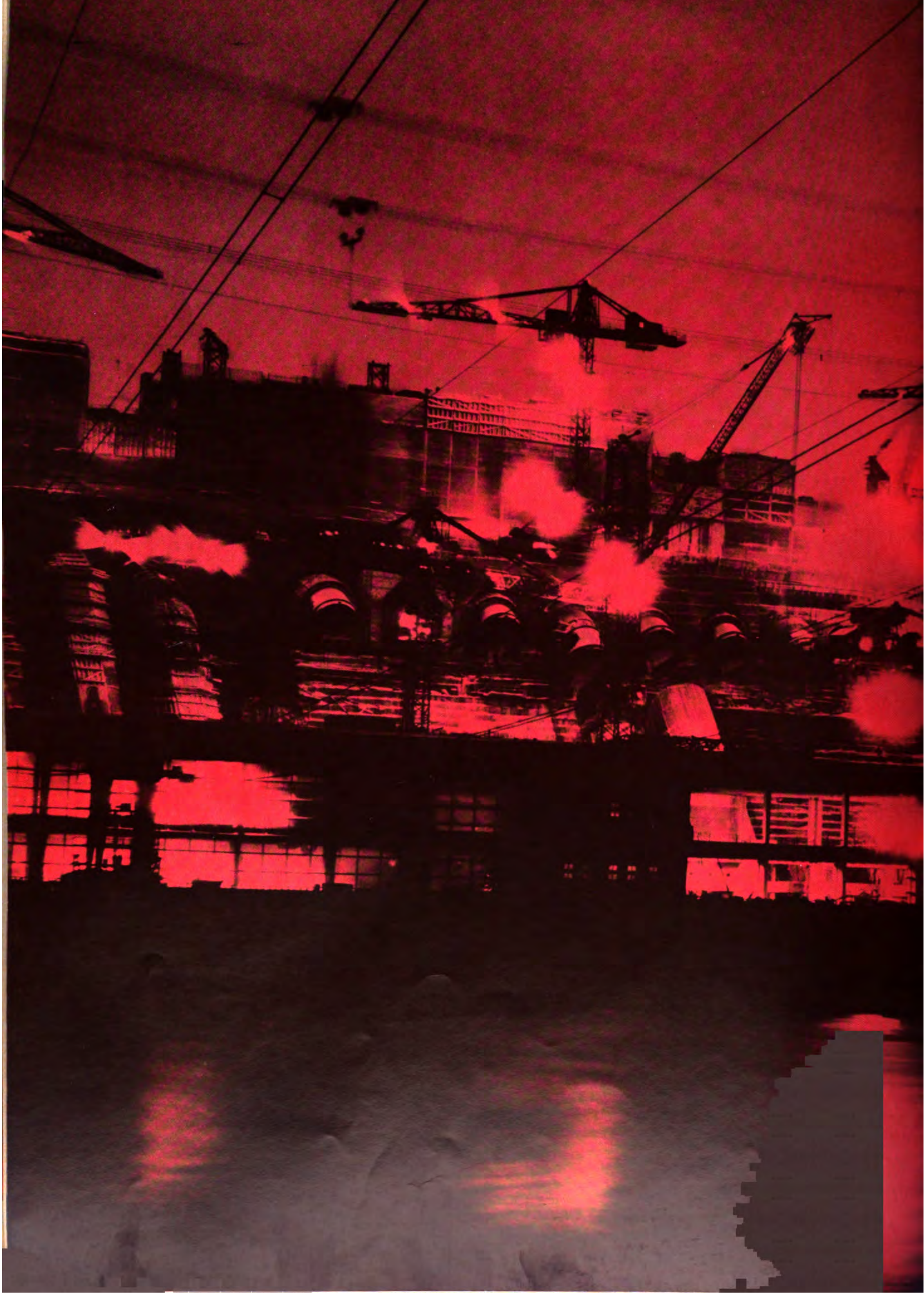
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THE COUNTRY'S FUTURE



AS LENIN SAW IT

See story on page 22

The Krasnoyarsk Hydroelectric Power Station on the Yenisei River, Siberia, has a capacity of six million kilowatts.

Photographs by Max Alpert and Novosti Press Agency

ELECTRIC POWER FEEDS THE COUNTRY

BY PROFESSOR PYOTR NEPOROZHNY
USSR Minister of Power and Electrification

Himself a participant in the campaign to electrify the country in the thirties, Minister of Power Pyotr Neporozhny describes the creation and growth of the Soviet power industry.



The Soviet Union today has powerful energy systems. The world's largest hydro and thermal power stations are in the USSR, and we are building high-capacity nuclear generating plants. In generated electricity, our country leads Europe and is second in the world after the United States.

Due in large measure to electrification, we are now the world's second industrial power; our oil extraction in the Soviet period has multiplied 28 times and our coal output 19 times, and we smelt over 100 million tons of steel and manufacture about eight million different items annually. Electric power has transformed the lives of our people, done away with heavy physical labor and brought culture within the reach of millions.

This year the total capacity of our electric plants will reach 160 million kilowatts, and our generated electricity, 700 billion kilowatt-hours.

To appreciate these figures, one has to remember that in 1920 the country's electricity output was only 500 million kilowatt-hours. Power engineering in Soviet Russia was just starting then. Nearly all the facilities available to old Russia had been put out of commission by war and foreign intervention.

Today we install 800,000-kilowatt-capacity power units. In recent years, 10 to 11 million kilowatts of new capacity have been put into service annually. The planned yearly increase for coming years is 14 million kilowatts. We have designed a 1.2-million-kilowatt-capacity turbine generator that can light a city of two million people. All this is well within the capability of our industry. Soviet power project and power machinery builders, with years of intensive schooling behind them, are now working on such enormous projects as a single power grid for the whole country, based on superhigh-voltage equipment and superdistance transmission.

I am always moved by the memories of the First Five-Year Plan. A driller then, I worked at Dneproges, the hydroelectric station on the Dnieper. The project was the pride of the Soviet people, a symbol of socialist industrialization. Its capacity—560,000 kilowatts—seemed colossal to us. Indeed, Dneproges at the time was the largest-capacity hydropower station in Europe. It was a new landmark in Soviet power engineering, a big step toward realizing Lenin's plan for the electrification of the country.

We had no experience and started from scratch. Nearly all our machines and equipment were imported. Materials were in short supply and we lacked machine tools—our industry was just getting ready to produce them. So there was special reason to be gratified by our first success.

Dneproges was not only a test of our ability to solve the complex problems of electrification, but a school for our future work force. Tens of thousands of those who worked at the project went to school simultaneously or took correspondence courses. Many a talented leader, engineer and innovator got his training there.

I witnessed the creation and growth of power engineering in this country. You might say that I grew up with it. In the thirties, after graduating from the institute, I worked as engineer in charge, chief engineer and head of large power projects and did design and research. Thus, I was lucky enough to go through every stage in our power development. Now we have matured so much that we tackle problems which 10 years back we would have thought pure fantasy.

The photographs by Max Alpert, a leading Soviet press photographer, give an idea of the birth of our power engineering and the way it developed. But these are only static records. Behind them are the dramatic, selfless

work of Soviet people, the enormous organizing activity of our party that created machine-building and large design research and construction organizations and trained the skilled labor to man them. Many foreign engineers, including Americans, helped us at Dneproges. But then we proceeded on our own, developed high-performance turbines and brought to the world our own ideas of electrification. Today we give technical and scientific assistance to others; nearly 30 countries use the services of our power research institute graduates.

I visited many of the countries we are assisting with electrification. We have done a great deal of work in Africa. First, of course, is Egypt's 2.1-million-kilowatt-capacity Aswan Hydropower Station, which will generate twice as much power as the whole country now produces. In Syria we are helping to build a large station—the Second Aswan they call it—on the Euphrates River. Many developing countries—including Algeria, Afghanistan, India, Tunisia, Iraq and Morocco—are our partners in power engineering and irrigation projects.

We work closely with our colleagues in other socialist countries. Members of the Council for Mutual Economic Assistance now have an integrated power system, Mir. Its high-voltage lines connect the systems of Bulgaria, Hungary, the German Democratic Republic, Poland, Rumania, Czechoslovakia and the Soviet Union. Energy is controlled and exchanged almost instantaneously through the Central Dispatcher's Office in Prague. Of course, Mir has great economic value for each of the countries participating.

Soviet power engineers' plans for the future are broad. In the coming years we will be doubling our annual increase in capacity, raising it to 20 million kilowatts. To achieve this, we shall have to build large electric stations made up of sets of 300,000-, 500,000- and 800,000-kilowatt capacity, and large nuclear electricity-generating plants equipped with sets of at least one million kilowatts each. We must tie the large electric stations into a single power grid and lay long-distance high-voltage a.c. lines (up to one million volts) and d.c. lines (up to two million volts). All this implements the decision of the Twenty-third Congress of the Communist Party of the Soviet Union on constructing a single power grid for the USSR and giving priority to electric power production.

The world now sees in fact the feasibility of Lenin's scheme for economic development. Soviet plans for the future are just as ambitious. And as it did half a century ago in Lenin's scheme, electrification today plays a leading role in the construction of a new society and in all technical progress.

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Front Cover: The Spasskaya Tower in the Kremlin, from St. Basil's Cathedral. Photo by Nikolai Rakhmanov.

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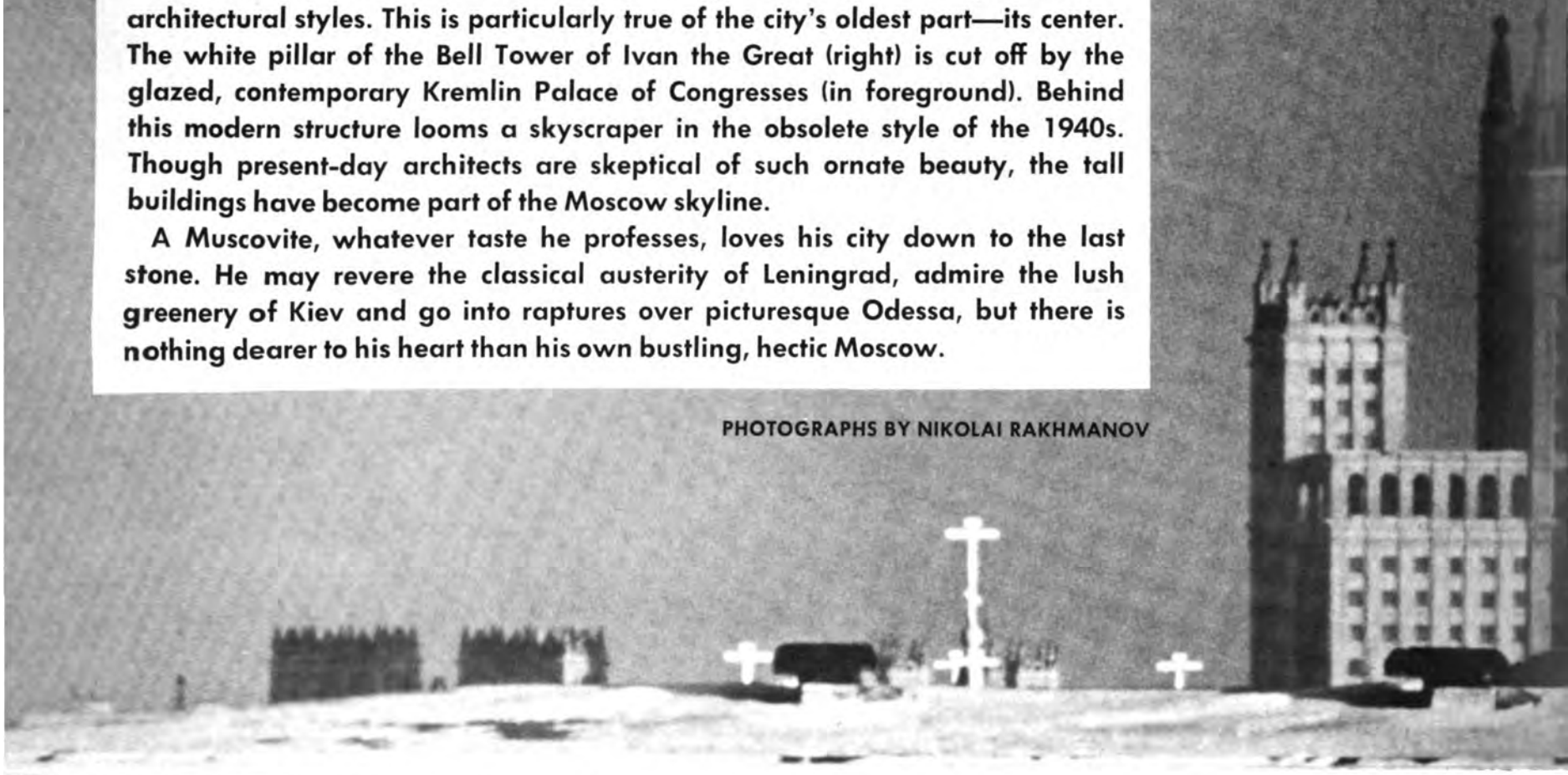
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MOSCOW: NEW LIFE IN THE ANCIENT CITY

The silhouettes of Moscow weave fanciful patterns of different periods and architectural styles. This is particularly true of the city's oldest part—its center. The white pillar of the Bell Tower of Ivan the Great (right) is cut off by the glazed, contemporary Kremlin Palace of Congresses (in foreground). Behind this modern structure looms a skyscraper in the obsolete style of the 1940s. Though present-day architects are skeptical of such ornate beauty, the tall buildings have become part of the Moscow skyline.

A Muscovite, whatever taste he professes, loves his city down to the last stone. He may revere the classical austerity of Leningrad, admire the lush greenery of Kiev and go into raptures over picturesque Odessa, but there is nothing dearer to his heart than his own bustling, hectic Moscow.

PHOTOGRAPHS BY NIKOLAI RAKHMANOV

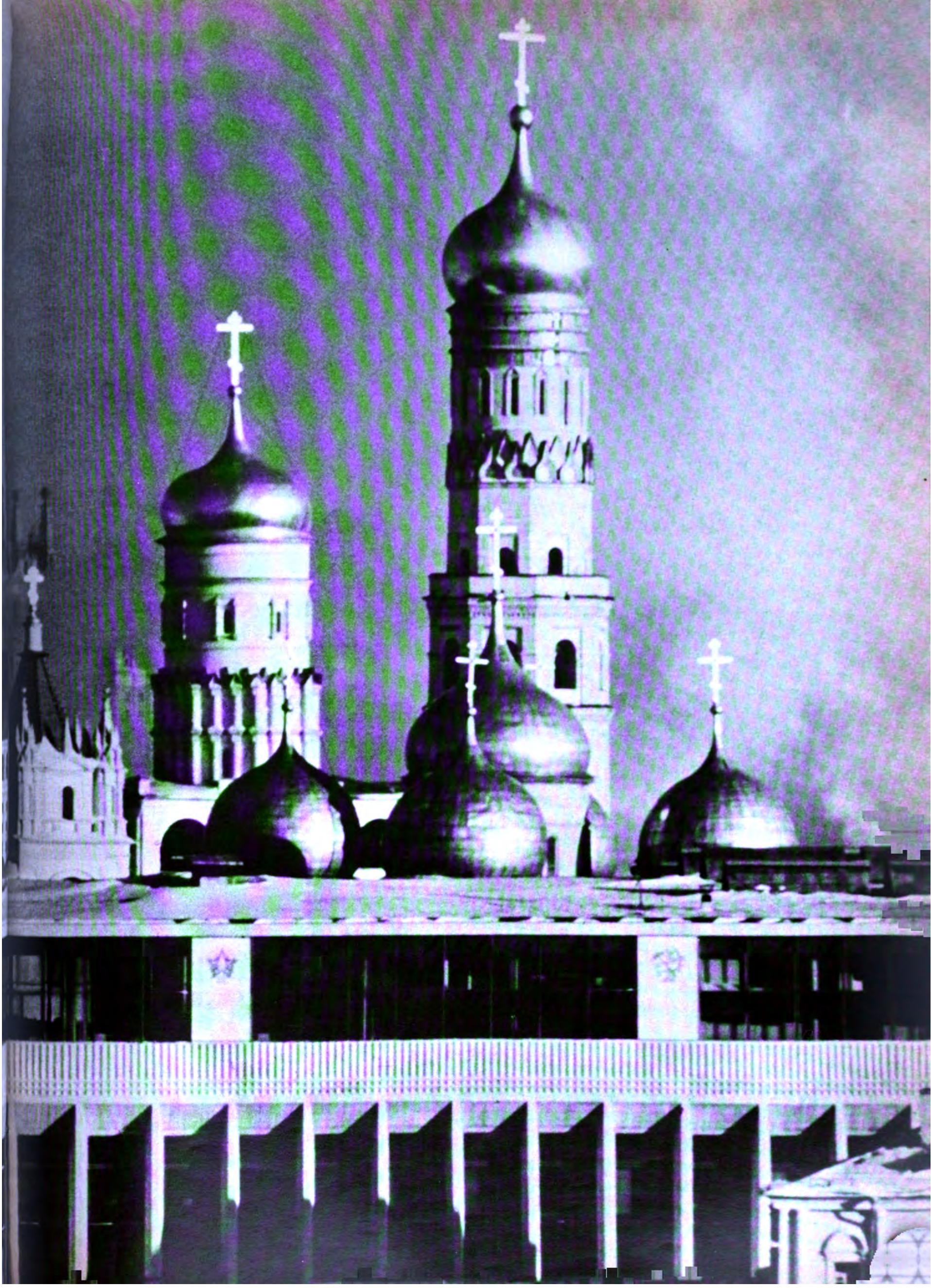












A bridge across the Moscow River at Lenin Hills. This district affords a panoramic view of the city.

The "river streetcar," Moscow's sightseeing boat. Below: At a bend on the right, the Ukraina Hotel.



















Fast pace beside a quiet river

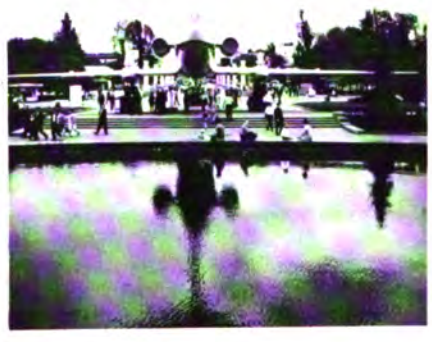
In contrast with the sluggish waters of the Moscow River, most Muscovites seem veritable dynamos. From early morning they can be seen plunging down packed subway escalators, or maneuvering their cars through congested traffic, or scooting on their motorcycles from under truck radiators. In summer, sunset comes long after the workday has ended, and till the small hours the streets are filled with people loth to tear themselves away from the after-dark attractions. Unlike many urban centers, Moscow has no loud display of electrical signs — an omission that many foreign tourists approve.

Tourists share the city for a while

Moscow is a city for artists as well as for sightseers. The tourist usually visits the Kremlin first, to see the Czar Bell, the Czar Cannon and other historical relics. Unfortunately, he seldom has the time to roam along quiet lanes past the restored old houses and churches. Those whose interests are in the present choose the USSR Exhibition of Economic Achievements, to view the progress of science and engineering. The Lenin Library, largest in the world, draws many visitors, too. It contains more than 25 million books in 173 different languages. Theater and concert fans have a wide choice of entertainment—ballet or opera at the Bolshoi Theater; the recitals of Svyatoslav Richter, David Oistrakh and Mstislav Rostropovich at the Moscow Conservatory and classical or modern drama at the many playhouses. But at times the ticket selection is limited by the Muscovites' own love of shows.



















A new building of the Lenin Library. Left: The lamps of the Moscow Art Theater.



The city's largest bookstore, on Kalinin Prospect. Below: The subway, Lenin Hills.



Tributes and celebrations

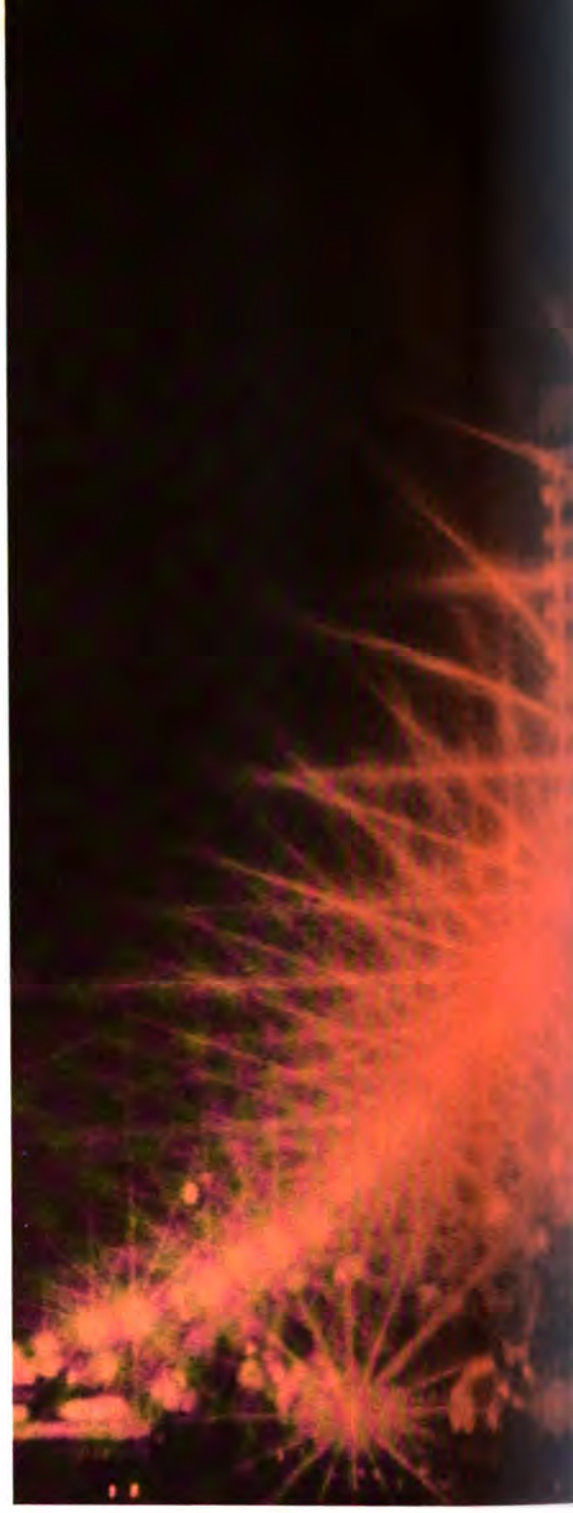
Like most cities, Moscow has its traditions, old and new. One of these is for new arrivals to stop at the Lenin Mausoleum. In all kinds of weather, visitors file across Red Square to pay tribute to the first head of the Soviet state. On May Day and on November 7, the biggest national holidays, the mausoleum becomes a reviewing stand for colorful parades. Not far from this monument is the Tomb of the Unknown Soldier. An eternal flame burns there in memory of the soldiers who fell on the approaches to Moscow and Leningrad, Berlin and Warsaw—the fronts of World War II. There is another tradition connected with the Kremlin. Each year, after their high school graduation ceremonies, groups of youngsters gather at the Kremlin wall to spend a June night together for the last time. On such nights city dwellers get very little sleep—the graduates celebrate till the small hours. But according to the same tradition, the older generation casts an indulgent eye on these festivities.



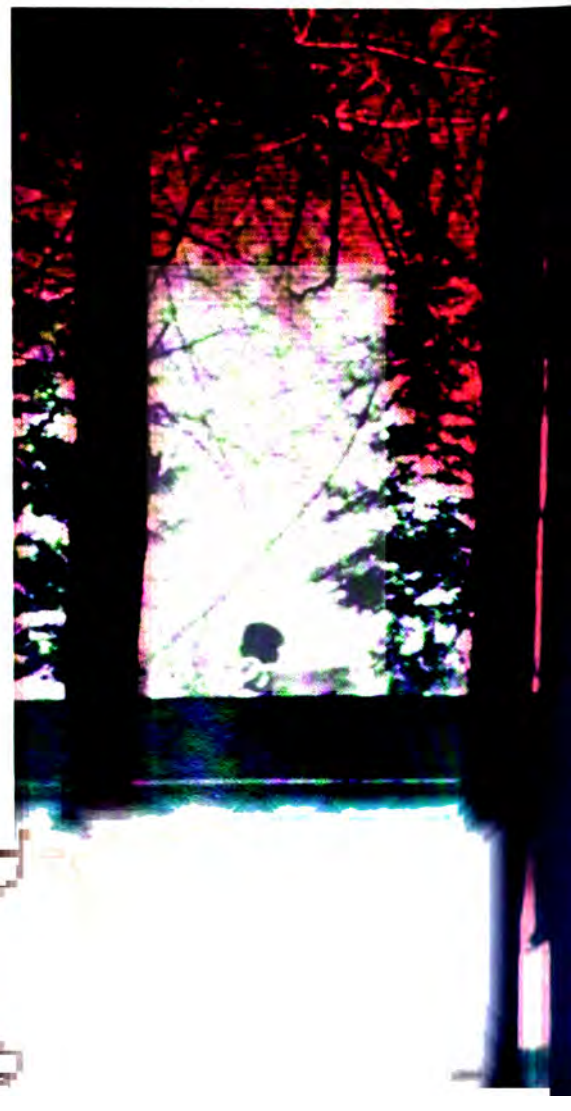










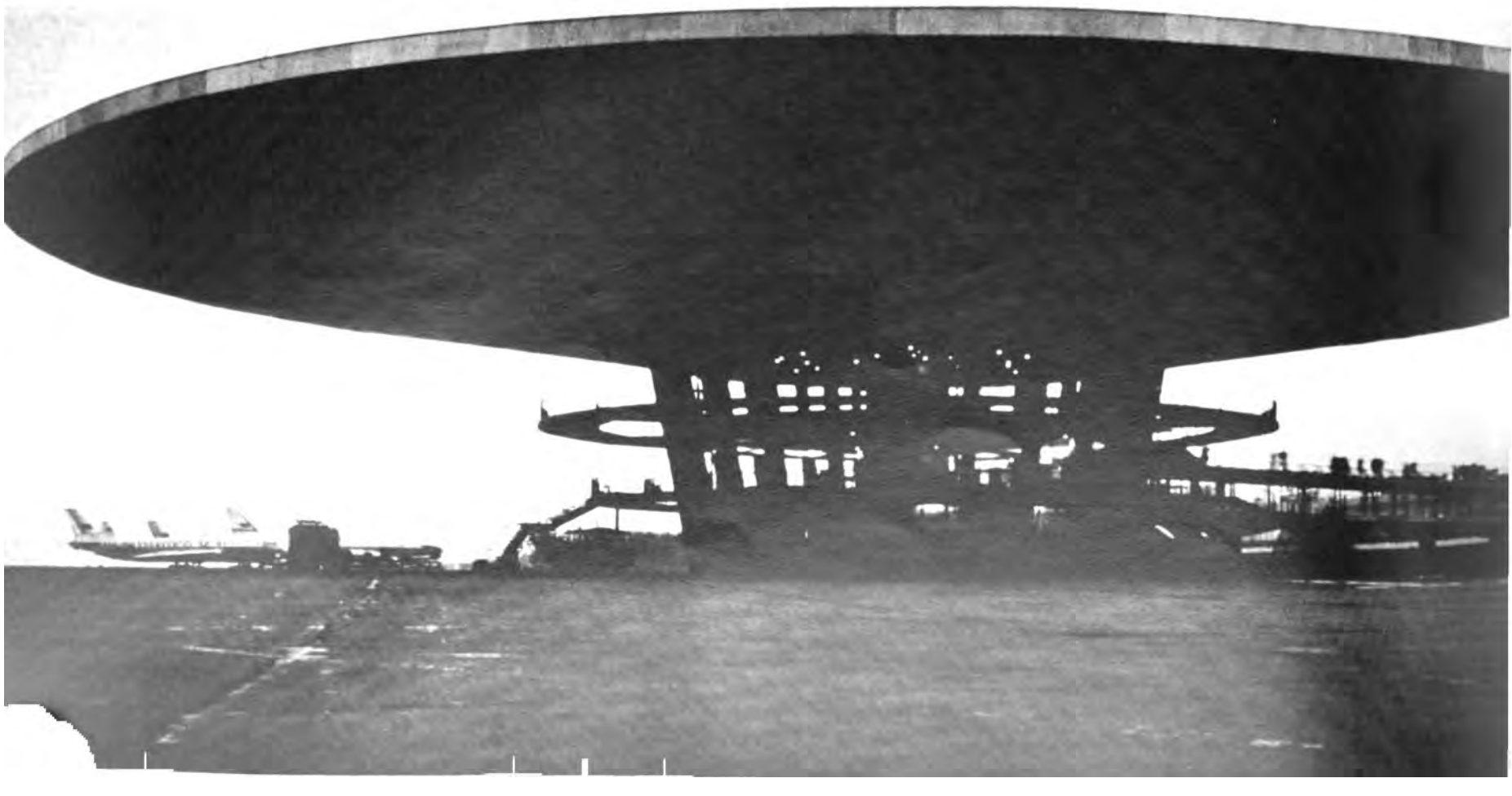




Moscow's main street, Kalinin Prospect. Below: The Tomb of the Unknown Soldier.



Muscovites have become used to the new look of tall, ultramodern buildings. In the southwest section, glass and concrete are backdrops for centuries-old towers. In the suburbs the new lines conflict with no existing architectural patterns. Surrounded by fields and woods, the wide ellipse of Sheremetyevo Airport's terminal or the 1,750-foot tower of the Ostankino television center brings to mind a still from a science fiction film. The plan of the city changes day by day. But as they employ contemporary forms, designers also take care to preserve Moscow's architectural past—its living history.





FOR VALOR, HEROISM, FORTITUDE

BY VLADIMIR CHIZHOV
HISTORIAN

An order or medal primarily combin pictures or images that symbolize specific spiritual values (the cross old Russian orders was a symbol of thi kind, and in Soviet orders there are the five-pointed star and the red banner). Since these values are rooted in history, an order reflects a milestone of one kind or another in the life of the particular country and its peopl



The Order of the October Revolution was instituted in honor of the fiftieth anniversary of Soviet power.

1. Medal "For Liberation of Belgrade" (instituted in 1945)

2. Order of Kutuzov, Third Class (1942)

3. Medal "For the Defense of Moscow" (1944)

4. Order of Glory, First Class (the highest enlisted man's award, 1943)

5. Bogdan Khmelnitsky Order, First Class (1943)

6. Order of Victory (the highest military award, 1944)

7. Order of Lenin (the highest government award, 1930)

8. Medal "For the Capture of Berlin" (1945)

9. Medal "For the Victory Over Germany" (1945)

10. Order of Suvorov, First Class (1942)

11. Medal "For Labor Merit" (1938)

12. Medal "For Valor" (1938)

13. Order of the Red Star (1930)

14. Order of Alexander Nevsky (1942)

15. Gold Star of the Hero of the Soviet Union

16. Order of the Patriotic War, First Class (1942)

17. Order of the Red Banner of Labor (republican, 1920; national, 1928)

18. Order of the Red Banner (military award, the first Soviet decoration; republican, 1918; national, 1924)

19. Order of Ushakov, First Class (naval award, 1944)

20. Medal "Hammer and Sickle" (1938)

21. Badge of Honor (civilian award for outstanding achievement in such fields as production and art, 1935)

22. Order of Kutuzov, Second Class (1942)

23. Medal "For the Defense of Stalingrad" (1942)

24. Order of Motherhood Glory, First Class (award to mothers who raised nine children, 1944)

25. Medal "For the Defense of Odessa" (1942)

26. Medal "For the Capture of Budapest" (1945)

27. Medal "For the Liberation of Warsaw" (1945)

28. Order of the Mother Heroine (award to mothers who raised 10 children, 1944)

29. Order of Nakhimov, Second Class (naval award, 1944)

30. Medal "For the Defense of Leningrad" (1942)

31. Medal "For the Defense of Sevastopol" (1942)

32. Medal "For the Liberation of Prague" (1945)

33. Medal "For the Defense of Kiev"

34. Medal "For Bravery" (1938)



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ONE of the points discussed by the members of the All-Russia Central Executive Committee at its September 30, 1918, session was whom to make the first recipient of the newly instituted Order of the Red Banner, the republic's highest military award.

They listened attentively to a detailed report of how hungry, ill-clad and poorly armed detachments of Red partisans had made a heroic 39-day sally behind the lines of the White Guard forces.

"We feel," the report said, "that the Russian Revolution should express its gratitude and admiration to the leader of this handful of heroes." The commander of this small force of partisans in the Southern Urals was the gifted 28-year-old army leader Vasili Blucher, a peasant's son who had worked as a fitter in the small town of Mytishchi, near Moscow. The All-Russia Central Executive Committee unanimously voted to decorate him with the Military Order of the Red Banner No. 1.

Many other decorations and honors were later conferred on Vasili Blucher, who rose from the ranks in the czarist army to become a Marshal of the Soviet Union. The history of another Soviet military decoration, the Order of the Red Star, is associated with his name. In 1930, as commander of the Special Red Banner Far Eastern Army, he was the first to be decorated with the Order of the Red Star, in recognition of his success in defending the Soviet borders against provocative attacks by White Guard Chinese. By then he was the first man in the country to have been decorated with the Order of the Red Banner five times.

The statute instituting this order was adopted on September 16, 1918. The decree declared that this mark of merit was to be awarded to all citizens of the Russian Federation who had displayed outstanding bravery and courage in military operations. Note the word *all,* which reflected the fundamentally new nature of the Soviet Republic's legislation on decorations.

By contrast, the statute on orders in old Russia had been based on a strict caste system. As a rule, only members of the aristocracy were decorated with the highest orders. The law on the institution of marks of distinction stated that "members of the lower middle classes and of the rural estate are not eligible for orders." All that the overwhelming majority of the Russian people could hope for, as the satirist Mikhail Saltykov-Shchedrin put it, was "a glass of vodka and a piece of silver."

The award of the highest honors depended, the law said, on the "grace, judgment and will of the autocratic sovereign, the supreme chief of Russian orders."

The first Russian order was the Order of St. Andrew. In a ceremony on March 20, 1699, the day it was instituted, Peter the Great conferred this decoration on its first recipient, Field Marshal Fyodor Golovin, who had captured several Swedish vessels in the estuary of the Neva. Peter the Great appreciated valor, and it was his intention that the Order of St. Andrew should be presented only for conspicuous military service (incidentally, he awarded the order to himself as the captain of a company of bombardiers for successful action against the Swedish Navy). At the end of the eighteenth century, however, the custom of conferring this order on every child born into the emperor's family was made a law.

Down through the decades the Order of St. Andrew, with its gold and its sparkling diamonds, its sky-blue satin ribbon and massive chain, was the most coveted of regalia; its possession automatically entitled one to all the other Russian orders and, besides, to the rank of Privy Councilor, equivalent to the military rank of Lieutenant General. In the 200-odd years of its existence this order was conferred on about 2,000 people.

The Order of St. George, founded in 1769, was probably the most "democratic" of the decorations in czarist Russia. Its statute declared that a person was entitled to it not by virtue of "high birth" but for outstanding courage or "advice useful to the military service." Unlike the recipients of other orders, holders of the St. George were exempted from contributions to the treasury. They did not necessarily have to be aristocrats (they were elevated to the ranks of the hereditary nobility on receiving the order). The decoration had four classes. All told, there were only 24 recipients of the Order of St. George, First Class, among them the famous Russian army leaders Alexander Suvorov and Mikhail Kutuzov.

Later the St. George Cross, also with four classes, was instituted for noncommissioned officers and men. This turned out to be the most long-lived of the czarist decorations. When, a few days after the October Revolution, the Soviet Government issued a decree abolishing civil ranks and the division of society into estates, all czarist orders and medals were abolished at the same time. However, the tradition of respect for holders of the St. George Cross lived on among the people. Even nowadays, on a big public holiday, you will sometimes see a white-haired old man proudly wearing the orange and black ribbon of the St. George Cross.

The Soviet Government now had the problem of devising a system of conferring honorary awards in keeping with the basic tenet of the new society—the equality of all citizens—as well as of having decorations designed that would reflect the new ideals. The decree instituting the first Soviet order merely stipulated that a red banner, symbol of the Revolution, should be depicted on it. The rest was left to the artist Vladimir Denisov. He submitted six designs to the commission set up to draft the statute.

The commission chose the following design: A red banner with the slogan "Workers of All Countries, Unite!" against a white background and bordered by wreaths of oak leaves. Beneath the banner there was a five-pointed star (emblem of the Red Army) on top of which the artist had drawn a bayonet, a hammer and a plowshare, symbolizing the links between the army and the people. A ribbon of red enamel underneath the star bore the inscription "R.S.F.S.R.," the initials of the Russian Soviet Federative Socialist Republic.

The other Soviet republics also instituted an Order of the Red Banner. The Union of Soviet Socialist Republics was formed in 1922, and on August 1, 1924, this order was proclaimed an all-USSR decoration.

In December 1920 the Eighth All-Russia Congress of Soviets instituted the Order of the Red Banner of Labor as a civilian decoration. In the autumn of 1928 this order, also, was made an all-USSR award. Its first recipient was Semyon Golovanov, a well-known financial expert. The son of an illiterate peasant, Golovanov managed to obtain a higher education and won recognition as a budget expert. After the Revolution he worked for the People's Commissariat of Finance of the Russian Federation and later drafted the first six-month budget of the Soviet Union.

The Order of Lenin, instituted on April 6, 1930, is the country's highest decoration. The statute declares that it is "conferred on citizens, groups, institutions, enterprises and public organizations . . . for special services in building socalism." The first recipient was the youth newspaper *Komsomolskaya Pravda,* decorated on May 23, 1930, its fifth anniversary.

On Februrary 13, 1934, the icebreaker *Chelyuskin* was crushed by Arctic ice and went to the bottom 150 miles off the coast of the Chukchi Peninsula, the northeastern extremity of Asia. The crew and the members of the scientific expedition landed on an ice floe, where they waited for help from the mainland. Stranded amidst the Arctic ice in temperatures 40 degrees below zero and with provisions low, they were in a catastrophic position. On March 5 a black dot appeared in the sky and steadily grew larger. The plane circled above the camp twice and then made a successful landing on an improvised strip. The pilot was Anatoli Lyapidevsky. On the first return flight he ferried the 10 women and two children who had been on board the ship back to the mainland.

The chief of the expedition, the ship's captain and the radio operator were the last to leave the camp, on April 13. The seven airmen who had rescued the *Chelyuskin* party were honored with the highest mark of distinction, the newly instituted title Hero of the Soviet Union, conferred for "personal or group service to the state connected with an act of heroism." Its recipient gets the Gold Star Medal and the Order of Lenin.

As the pilot who found the *Chelyuskin* party, Anatoli Lyapidevsky headed the list of the first seven men to be made a Hero of the Soviet Union. Since then the list has grown to 12,000, of whom 110 persons have received the title twice. In recognition of this dual honor, incidentally, a bronze bust of the hero is displayed during his lifetime. The famous World War II aces Alexander Pokryshkin and Ivan Kozhedub were awarded the title of Hero of the Soviet Union three times, and Marshal of the Soviet Union Georgi Zhukov was thus honored four times.

At the end of 1938 the title of Hero of Socialist Labor was instituted to reward persons whose innovations in industry, science, agriculture and other spheres of building the new society won general recognition. To date more than 13,000 industrial workers, scientists, collective farmers, writers and others have been honored with this title. It was conferred three times on the late Academician Igor Kurchatov. Together with the title go the Hammer and Sickle Gold Star Medal—slightly different in shape from the Gold Star Medal of the Hero of the Soviet Union—and the Order of Lenin.

Many new orders were instituted during the Second World War, when each day brought reports of feats of valor by servicemen and officers and news of successful operations on scales ranging from a company to a front.

The Order of Glory, with three classes, was instituted in November 1943 for men and noncommissioned officers, and also for junior lieutenants in the air force. About 2,000 Soviet citizens have been awarded all three classes of this order. The first was Senior Sergeant (later Lieutenant) Nikola

Continued on page 3

QUERIES FROM READERS

QUESTION: We wonder if your country has trouble with riots and strikes as we do. If you do, how do you handle it? (Peter Cook and Paula Manner, East Boothbay, Maine)

ANSWER: We have no such problems. Take race riots, for instance. We do not have them because we have no problem of racism. No people of any race or nationality feel themselves discriminated against in any way: Government policy in every sphere is based on the principle of equality of nations. As for insults to the citizens' national pride, they are punishable by law.

As for student disturbances, which many countries are now experiencing—we have none. But that doesn't mean our students are a faceless, passive mass always satisfied with things as they are. After all, open conflict with a college administration is an extreme step, taken when all other means have failed. We resolve contradictions peacefully, by the direct participation of students in the management of our higher educational institutions. If the problem that bothers them, however, is not within the province of an individual college (a change in curriculum, for instance), it is brought to the Ministry of Higher and Specialized Secondary Education.

Now about strikes. Though they aren't prohibited by law, we don't have them. Differences between management and the workers are handled by the factory trade union committee, which sees to the strict observance of laws that protect labor. Management bears full responsibility for unfair decisions, up to and including dismissals. That is why workers do not have to resort to strikes; they act through their trade unions.

QUESTION: I should like some information on Komsomol, the Young Communist League. Are there any other youth leagues similar to it in the USSR? (Mike Diederich, Silvis, Illinois)

ANSWER: The Komsomol was officially organized in October 1918 with a membership of 22,100; it now has 23 million.

The organization was founded by young men and women who wanted to work actively to build a society of universal equality and prosperity, the society for which the October Socialist Revolution in Russia was fought.

All young people between the ages of 14 and 28 are eligible to join. The Komsomol has a pyramidal structure: At the top is the Central Committee, then come the republic, regional, district and city YCL organizations. The primary units operate in factories, educational institutions and offices, on construction sites and collective farms. The Komsomol is a democratic organization with final power vested in the general membership. There are regular conferences at the middle levels and congresses on the republican and country-wide levels.

The Young Communist League enjoys a great many rights. It may even introduce bills for consideration by the country's highest legislative body, the USSR Supreme Soviet. No legislation that affects the youth, whether on a national, republic, city, factory or office scale, can be adopted without the participation of YCL representatives. There are 182 youth representatives among the deputies to the USSR Supreme Soviet and a total of about 400,000 young people in the Supreme Soviets of the union and autonomous republics and in the local Soviets. Obviously many of them are YCLers.

The Young Communist Leaguers are the best of the country's young generation. They are expected to set an example—on the job, in the schools and in the service of their country. The Soviet Government has awarded the Komsomol six decorations, including the highest honors—three Orders of Lenin—for the selfless labor and heroism of its members in the defense of the country.

The title Hero of the Soviet Union was conferred on 11,525 people during the war against the fascist invaders (1941-45). Of the total, 7,000 were members or former members of the Komsomol. Today YCLers are making their contributions to construction projects, factories and collective farms. Forty-eight of the 100 most important industrial and transport construction projects have been named Komsomol Projects in recognition of the work done by the YCLers.

There are other mass youth organizations in the Soviet Union, in the sports, the trades and professions, but there is no other mass organization like the Komsomol.

QUESTION: What is the definition of the words "socialism" and "communism"? (Gerald F. Michael, Peoria, Illinois)

ANSWER: The theory of scientific communism, originated by Karl Marx and developed by Vladimir Lenin (the reason it is now called Marxism-Leninism), says that human society inevitably evolves toward communism.

Communism is a society in which all members are equal and all enjoy the society's blessings, both material and cultural. In other words, man, freed from every kind of oppression and from financial insecurity, makes use of the achievements of mankind to develop his potentialities.

Socialism is the first stage of communism, a period in which the foundations for a communist society are being laid and the material prerequisites for the transition to communism are being created. Under socialism, also, man develops a new, communist consciousness.

Fundamental to the whole process is the change in the economic foundation on which the society is built. The productive forces of society develop to the point where they can provide everyone with an abundance of the good things of life. The relations between people change; there are no longer rich and poor. The mutual distrust between nations and nationalities vanishes.

All this raises ethical standards. People learn to think and act as social beings. They become involved in community and national affairs and begin to take over the duties of official agencies. Thus they prepare for communist self-government, when the Soviets, trade unions, cooperatives and other mass organizations of the working people assume all the responsibilities for running the country.

Socialism and communism are two stages of one and the same society of justice that mankind has dreamed of from time immemorial. What they have in common is the social ownership of the means of production. There are no private owners of factories, businesses or banks; there is no one to exploit the people working in these enterprises. Under both socialism and communism political power is in the hands of the working people.

But there are also differences between the two stages, especially in the level of production and the method of distribution of goods and services. Under socialism production is not yet high enough to give goods and services to every member of the society according to his needs. Therefore the operating principle is: From each according to his ability, to each according to his work. Under communism, however, the principle becomes: From each according to his abilities, to each according to his needs.

In addition, as the communist society is built, the state apparatus that was necessary under socialism withers away.

This is only a schematic answer, of course. For a more detailed discussion see the December 1964 issue of SOVIET LIFE.

QUESTION: What is the top speed of passenger trains in the Soviet Union? (W. L. Cravener, Vandergrift, Pennsylvania)

ANSWER: The present average speed of passenger trains is 40 mph.

Efforts to speed up trains are under way in many countries, the Soviet Union included. We have an express train on the Moscow-Leningrad line running at 100 mph. More powerful locomotives are being designed and tested; research is evolving better types of passenger cars; railway tracks are being laid with fewer joints, and the changeover to electric traction is continuing.

QUESTION: Can you tell me how many universities the Soviet Union has? How many does Russia alone have? Also how many technical institutes of higher learning like the Massachusetts Institute of Technology and Cal Tech? (Mrs. S. L. Wolfson; Seal Beach, California)

ANSWER: We have 47 universities—24 are in the Russian Federation, the rest in the other 14 republics. The universities train scientific personnel and teachers for secondary and higher schools. Our 227 technical institutes train engineers. Some of them take jobs in industry, farming and the like, the rest in research and designing institutes and laboratories.

The curriculums and faculties of many of our prestige schools, like the Bauman Higher Technical School in Moscow, the Leningrad Electrotechnical Institute and the Kharkov Polytechnical Institute, are probably comparable to the two American schools mentioned in the question.

MELVILLE IN RUSSIAN

By Boris Gilenson
Master of Science (Philology)

Drawings by Rockwell Kent

HERMAN MELVILLE, born 150 years ago, was discovered by readers in the Soviet Union only recently. Once discovered, however, his popularity took a meteoric rise.

American literature has always been well received here. The characters of James Fenimore Cooper and Jack London are our heroes too. We brought Mark Twain's Tom Sawyer and Huckleberry Finn to school with us; they sat with us at our desks. As we grew older, we entered the worlds of Theodore Dreiser, Sinclair Lewis, Upton Sinclair and, of course, the much idolized Ernest Hemingway. Characteristically, while we had long been familiar with those who wrote in the realistic tradition, it was much later that we got to know the very different symbolist and psychological writers. It is only lately, relatively speaking, that we made the acquaintance of William Faulkner, F. Scott Fitzgerald, Thomas Wolfe, and now Herman Melville. There is, perhaps, a better reason for our coming on Melville so late. The author of *Moby Dick,* unappreciated by his own contemporaries, acquired posthumous fame at home only in the twenties.

Rediscovery

Not that Melville was altogether unknown to us—though in popularity he clearly tailed such other novelists as James Fenimore Cooper, Edgar Allan Poe, Henry Thoreau and Washington Irving. Translations of his first two books, *Typee* and *Omoo,* were published here back in the thirties, also some of his long short stories. Leningrad scholar Tamara Silman contributed an analytic essay on Melville's life and work to the first volume of *A History of American Literature,* which was published by the USSR Academy of Sciences in 1947. Still, what we missed was Melville's central piece, the core of his writing—something like knowing Tolstoy without *War and Peace,* Dostoyevsky without *The Brothers Karamazov* or Mark Twain without his autobiographical trilogy. Consequently the first Russian translation of *Moby Dick,* published in 1961, was a literary event. The edition sold out overnight. A reprint appeared a year later. Our prominent prose writer and essayist Kirill Andreyev reviewed the book in *Literaturnaya Gazeta.* He titled his review "The Cutting Steel of Herman Melville." "Even today," he wrote, "this book is unlike any other. The criteria, the proportions are totally different." He compared it to Hemingway's *The Old Man and the Sea,* asserting that both writers disclose a common humanitarian faith in man, his battle with nature and himself.

The appearance of Melville's central novel stimulated the interest of both readers and critics in his writing. *Typee* was reissued with an introduction by critic Vladimir Bakhta that ranked its author with those "incorrigible romance seekers and flaming exposers," in whom was alive the need "for truth for everyone in the world." In 1966 the Khudozhestvennaya Literatura (Fiction) Publishers put out *Israel Potter,* which introduced us to a new facet of Melville, as a master of the historical novel and withal a pungent commentator on his contemporary scene. Somewhat earlier there was a reprint of *Omoo,* and quite recently a specially abridged version of *Moby Dick* for children. It is likely that Captain Ahab, the schooner *Pequod* and the White Whale will soon be as beloved by our children as the characters in American literature they already know.

World Literature Library Series

For us *Moby Dick* is a classic of world importance, as is evidenced by its publication in the *World Literature Library* series, a 200-volume set open only to subscribers. To be issued over a 10-year period at the rate of 20 volumes annually, it will include such American writers as James Fenimore Cooper, Jack London, Walt Whitman, Henry Wadsworth Longfellow, Mark Twain, Theodore Dreiser, William Faulkner, Ernest Hemingway, Sinclair Lewis and John Steinbeck.

This printing of 300,000 copies will be the third edition we have published of *Moby Dick.* The total of earlier printings came to 100,000 copies. That talented translator of English and American authors, Inna Bernstein, a Moscow University graduate, has done what her more experienced colleagues did not dare to tackle; she has given us a Russian Melville. The novel with its many levels of meaning and its sonorous prose, which rises and falls like the waves of the sea to which it is a paean, has been given an inspired translation. In the foreword Yuri Kovalyov, a scholar of American literature, demonstrates a subtle understanding of the style and spirit of the book. Last but not least, the illustrations of Rockwell Kent, with their striking contrasts in black and white, capture all of the Melville flavor. Said one reviewer, "While Rockwell Kent has given us a better understanding of Herman Melville, Melville, in turn, has given us a new slant on Kent."

Moby Dick Controversy

Reviewer interest in *Moby Dick* in both the West and here is, of course, not fortuitous. The complex and fanciful symbolism of this "nineteenth century *Ulysses,*" as one critic called it, its bold associations and excursions into biblical history, its interplay of the realistic and the fantastic, the genre detail and the mythological, all provide rich food for interpretation and hypothesis. In the West Melville is usually seen as a profoundly pessimistic mystic, a father of contemporary modernism, the forerunner of such writers as Kafka, Joyce and Faulkner, a man who made a philosophical abstraction of the conflict between good and evil. Soviet students of American literature, as a rule, place the accent elsewhere. While by no means simplifying Melville's complexity, they try to assess the humanitarian and social meaning of his novels and discern in the symbols and allegories the factual historical problems of his time.

The social motivations are stressed in the introduction to the book by Abel Startsev, Doctor of Philology, one of our authorities on American literature. Yuri Kovalyov, unquestionably our leading expert on Melville, thinks that the mysteriously menacing conflicts of *Moby Dick* reflect not only the struggle of human passions but also, in a complicated and indirect way, the relentless political struggle that rent America asunder before the Civil War.

Analogous conclusions are drawn by Alexander Nikolyukin, author of *American Romanticism and Today* (1968). In the chapter "Man vs. the White Whale" he takes issue with some American students of literature who regard *Moby Dick* as peculiarly philosophical and allegorical. If we look for its sociophilosophical, historical and social meaning, he be-



lieves, we will find in it veiled critical reflections of mid-nineteenth-century American life.

The *Moby Dick* controversy is, of course, far from resolved. We in the Soviet Union look forward to new translations and studies of Herman Melville.





Mr. Hugh A. Groves (second from the left) in Moscow Fire Protection Museum



D.C. FIRE CHIEF IN THE USSR

By Angelina Gorelova

SETTING OUT for a tour of the USSR, Hugh A. Groves, Fire Chief of Washington, D.C., decided to stretch his program beyond the traditional sightseeing. He requested, and was given, an itinerary that included meetings with his Russian colleagues, with whom he shared information on firefighting techniques.

This was Groves' and his wife Frances' first visit to the Soviet Union, and they started in Leningrad. The northern city is famous for its historical monuments reflecting the development of the revolutionary movement in Russia. Like most newcomers, the guests were moved by the beauty of the Hermitage Museum with its collection of world art treasures. And like most, they complained they were pressed for time. But Groves fitted in a visit to Boris Komchayev, chief of the city fire department, and to the Leningrad School of Fire Engineers.

At their next stop, in Kiev, the capital of the Ukraine, the Washingtonians went to a silk-weaving mill to inspect the fire squad. Groves' comments on Soviet firefighting were highly practical. He found some of the rules overly strict. But one can't be too careful, he conceded.

The chief's Kiev program was not confined entirely to fire problems. The city was the center of Russian Orthodoxy in the middle ages, and its ancient architecture is memorably beautiful. Groves and his wife visited the famous St. Sophia Cathedral, the Pecherskaya Monastery and the church of St. Andrew.

A three-day rest in Sochi, on the Black Sea shore, was next. Charmed by the resort city, the guests joked that now they can fully understand those Soviet citizens who converge on Sochi sanatoriums and holiday homes from all over the country.

The Groves' visit concluded in Moscow. After a brief sightseeing tour of the Tretyakov Art Gallery, they went to see Moscow Mayor Vladimir Promyslov. The conversation was a busman's holiday: the urban problems of Washington and Moscow. Mayor Promyslov autographed and presented to Groves three albums describing the Russian capital. The chief will keep one copy for himself and give the other two to the Washington Public Library. In return, he gave Promyslov a copy of an address by Washington's Mayor Walter Washington.

One day was devoted entirely to professional interests. Mrs. Groves, naturally, chose a leisurely tour through Moscow while her husband visited a college department of fire prevention and fire safety engineering. Here department head Victor Kudalenkin described to him how Soviet firefighting specialists are trained. Next, Groves received a guided tour of the Fire Service Museum, with General Fyodor Obukhov, head of the USSR Central Fire Service, as his host. He found the exhibits here especially interesting and spent a long time photographing them.

Before flying back to the U.S., Groves joked that his research into Moscow's firefighting had been disappointingly heavy on theory. Fortunately, big fires are a rarity in the Soviet capital and there had been no chance to see his Moscow colleagues in action. But the guest's curiosity was satisfied by documentary films.

His favorite among Soviet cities? In each he found a charm of its own. Professionally speaking, perhaps Moscow. It has the biggest fire department museum.

Vladimir Lenin
1870-1970

LENIN AND TH

THE PLAN for building a new, socialist society in Russia stems fundamentally from Vladimir I. Lenin. The profound structural changes that have taken place in the country's economic, political, social and cultural life in the 52 Soviet years are a realization of his ideas and principles.

The Known and the Unknown

The general principles of socialism and communism, including the main features of their economic systems, were laid down before Lenin's day, in the writings of Karl Marx and Friedrich Engels. The communist form of society develops naturally from the whole of mankind's previous history. Its first, lower stage is socialism, whose construction starts immediately after a socialist revolution has taken place.

The substance of a socialist revolution is that political power passes into the hands of the working class, the working people. Real equality for all members of society is established. The chief means of production—land, factories, railways, banks and the like—are nationalized, becoming the property of the whole of society. Work becomes the duty of all. The principle "From each according to his ability, to each according to his work" is put into effect.

Public ownership of the basic means of production makes it possible to run the national economy according to an integrated plan. Industrial and agricultural production expand rapidly. The standard of living and cultural level of the population rise. Production continues to increase, attaining a level of abundance. Simultaneously, the members of society change, developing into citizens with a sense of community responsibility. Finally it becomes possible to start carrying out the principle "From each according to his abilities, to each according to his needs." This is communism proper, the highest stage in the development of the new society. This, said Marx and Engels, would be an association of people in which the free development of each was a condition for the free development of all.

That, in broad outline, was the picture drawn before Lenin's time of the development of society after a socialist revolution. It was of necessity a generalized picture.

Lenin notes this. In May 1918, that is, about six months after the Socialist Revolution in Russia, he told a congress of the newly formed Soviet economic administration agencies, the economic councils:

> All that we knew, all that the best experts on capitalist society, the greatest minds who foresaw its development, exactly indicated to us was that transformation was historically inevitable and must proceed along a certain main line, that private ownership of the means of production was doomed by history, that it would burst, that the exploiters would inevitably be expropriated. This was established with scientific precision. . . . We knew this when we took power for the purpose of proceeding with socialist reorganization; but we could not know the forms of transformation, or the rate of development of the concrete reorganization. Collective experience, the experience of millions can alone give us decisive guidance in this respect. . . .[1]

For the First Time in History

The Socialist Revolution took place in Russia in October (November, New Style) 1917. It was the first victorious revolution of its kind in history, and hence the first time the Marxists had an opportunity to put their theory of building socialism into practice.

There were quite a few occasions, long before the October Revolution, when Lenin turned his attention to problems connected with future economic changes. After the Soviet system was set up, he worked on these problems constantly. He drafted the main Soviet economic decrees, worked out the principles of socialist economic management, and delivered reports and speeches substantiating and explaining the economic policy of the government he headed. This period also saw the publication of a series of programmatic writings on problems of the economy, among them "The Impending Catastrophe and How to Combat It" (September 1917, on the need for Russia to go over to socialism); "How to Organize Competition" (December 1917, on the new socialist attitude toward work); "The Immediate Tasks of the Soviet Government" (April 1918, on practical steps in the building of a new life); "A Great Beginning" (July 1919, on the first communist *subbotniks*, communist Saturdays, periods of extra work volunteered by the people); "An Integrated Economic Plan" (February 1921, on principles of economic planning under socialism), and "On Cooperation" (January 1923, on peasant cooperative societies). [The first part of the latter article is published on page 35.]

These writings covered a broad range of theoretical ideas and practical recommendations. In effect, they opened up a new department of Marxist science, the political economy of socialism. Here we shall examine the main aspects of Lenin's plan for building a socialist economy in Soviet Russia.

[1] Vladimir I. Lenin, *Selected Works* (Moscow: Foreign Languages Publishing House, 1960), Vol. II, p. 781.

The People Are the Masters

Along with other fundamental ideas about the new society, the principle of nationalization of the chief means of production was set forth by Marx and Engels in *The Manifesto of the Communist Party* (1848). The Russian Communist Party included nationalization as an ultimate goal in its first program, adopted in 1903. Socialist nationalization of the chief means of production means that they are turned into the property of all the people. This is the decisive step. Under socialism, public ownership is the foundation of the life of society, the basis for building new, socialist social relations—genuine democracy, friendly cooperation between people in the common effort, the elimination of class antagonisms. Only public ownership leads to communism.

Lenin consistently advocated socialist nationalization in the new Russia, and the days and months following the victory of the Socialist Revolution saw nationalization of the land. This policy did not encroach on the interests of the peasants in any way. On the contrary, after nationalization the Soviet Government gave the peasants, for their use free of charge and for an unlimited time, another 370.6 million acres of land from the former big landed estates.

For some time the socialist sector of the economy existed side by side with private capitalist and small commodity production. In 1921 the New Economic Policy (NEP) was introduced, permitting private enterprise in manufacturing and trade within definite limits. Subsequently the Soviet Government gave priority to developing the socialist sector, and by 1937 this sector held the dominant position in the economy.

Marx and Engels had noted that socialist economic reorganization, including nationalization, would differ in different countries. The history of nationalization in Russia had a good many specific features. But, on the whole, it corresponded to the principles elaborated earlier and fully justified the hopes placed in it. Within a few years, by relying on public ownership of the chief means of production, the Soviet Union built up a well-developed, dynamic economy, the material and technical basis of socialism.

Industrialization

At the time the Soviet system was established Russia was extremely backward in general economic development and, especially, in the development of industry. In 1913, the peak prerevolutionary year, Russia's industrial output was only about 13 per cent of the U.S. figure. In 1920, when the Soviets were finally able—after the First World War, two revolutions, a civil war and armed intervention by other countries—to start on the work of peaceful construction, industry was practically nonexistent. The country was agrarian, but its agriculture, also, was extremely backward and unproductive.

Lenin advanced and substantiated the idea of industrializing Soviet Russia. "Large-scale machine industry," he said, "that will also be capable of reorganizing farming can be the only material foundation of socialism." He demonstrated that the surest road to socialism in Russia was through swift eradication of the country's technological and economic backwardness. Priority had to be given to the production of metals, machinery, electrical energy, fuel and chemicals.

The idea of socialist industrialization—a cardinal point in Lenin's plan for the building of socialism—was soon translated into reality by the people of the Soviet Union.

Electrification

It was Lenin who said: "Communism is Soviet power plus the electrification of the whole country." It would be hard to exaggerate the importance of electric power. Without it the modern scientific and technological revolution, with its mechanization and automation of production and its dramatic rise in labor productivity, would not have been possible.

At Lenin's initiative and under his direct guidance, GOELRO, the State Plan for the Electrification of Russia, was drawn up. The first long-range economic program for building the new Russia, it was endorsed by the Congress of Soviets, the country's highest governing body, in 1920. Under the plan, the 1913 level of electric power output was to be regained and in 10 to 15 years, 30 new power stations, with a total capacity of 1,750,000 kilowatts, were to be built in economically important areas. The stations would be fueled by local coal, shale and peat. The plan also provided for the construction of Russia's first big hydroelectric stations. Power production was to increase to four times the 1913 level (the 1920 output was only 25 per cent of the 1913 figure).

Besides electrification, the GOELRO plan covered other industries as well as the transport services. It stipulated an increase of nearly 100 per cent in industrial output, with a 20 per cent increase in the number of workers. The growth in labor productivity was to be achieved through the introduction of new machinery and new techniques.

Lenin's assessment of the importance of electrification reflected

SOCIALIST ECONOMY

By LEV BOIKO
Master of Science (Economics)

his attitude toward technological progress generally. He energetically advocated industrial application of the latest achievements of science and technology, and also introduction of the most rational ways of organizing work. It is to him that we owe the idea of a strictly scientific approach in determining the country's natural resources and distributing its productive forces. The old specialists who had come over to the side of the Soviet system should be appreciated and respected, he said, and inventors encouraged. Lenin took a direct part in laying the foundations of the widened system of scientific research centers, which later brought the Soviet Union into the forefront in basic and applied research.

Planning

The principles of socialist economic planning elaborated by Lenin were of great significance. "As distinct from the previous stages," he wrote at the end of the last century, "large-scale machine industry urgently requires the planned regulation of production and public control over it." Later, in Soviet times, he emphasized that it was a cardinal organizational task of the Soviet system to turn the entire state economic mechanism into a unified machine, functioning in such a way that millions of people were guided by a single plan.

The GOELRO program was an example of this kind of approach. The first attempt at an integrated and long-term economic development plan, it was drafted, as Lenin noted, "with regard to the entire republic, from the point of view of the planned development of all sectors of industry," and contained both "a material and financial (in gold rubles) balance sheet of electrification" and therefore was "a scientifically drafted, integrated economic plan."

Planning social production on a countrywide scale is a fundamentally new way of organizing society's economic life, made possible by the socialization of the means of production. Socialism, as Lenin defined it, is a system in which the production of goods is carried out in an organized manner "by the whole of society" to assure the complete well-being and free development of all its members. This definition, he pointed out, "also includes the principle of planning and indicates who guides it."

In working out the principles of socialist planning, Lenin indicated time and again the necessity for centralized direction of the socialist economy. But while implementing an over-all economic policy and unified economic plans for the country, he explained, it was essential to allow for the specific features of the economic development of different regions and, also, for the initiative of the masses. The present Soviet economic reform signifies further development of this important principle.

The scientific approach holds a special place in Lenin's theory of socialist planning. His writings and the decisions of the Communist Party of the Soviet Union have repeatedly stressed that planning can be scientific only if it correctly utilizes the economic laws of socialism, takes into account the domestic and external factors of the country's development, and is based on a comprehensive knowledge of the economic and technological situation. Lenin pointed out that development programs for the socialist economy are "broad plans that are not a figment of the imagination but are backed by machinery and prepared by science. . . ."

It was important, in Lenin's view, to combine current and long-range planning. Coordination of the two makes for continuity. Enterprises are able to operate on the basis of a long-term program, lay the groundwork for changes, and establish and consolidate ties with their suppliers and consumers.

The current economic reform has meant another step forward in putting these instructions of Lenin's into practice. It establishes, as the main form of state economic planning, a five-year plan with key targets for each enterprise set up year by year. The reform emphasizes the significance of the individual sectors of industrial production. It correctly combines planning according to sectors with planning according to republics and economic regions, and aims at a more rational social division of labor in the country.

Peasant Cooperatives

Peasants comprised 75 per cent of the population of prerevolutionary Russia. There were more than 20 million peasant households, half of which were poor, that is, they had no draft animals or implements for cultivating their tiny plots. Instead of trying to raise crops on their lands, poor peasants very often leased them to well-to-do neighbors for an insignificant sum and earned a livelihood in some other way. Another big stratum were the so-called middle peasants, who had a minimum of draft animals and implements and worked their plots themselves, without any hired labor. Finally, there were two million prosperous peasants, called kulaks, who had plenty of livestock and implements, leased additional land, and hired farm workers.

With primitive farming methods, low crop yields and the semi-starvation existence of tens of millions of people, the rural picture was a bleak one. The poverty-stricken bulk of the peasantry was brutally exploited by the big landowners and kulaks.

Lenin regarded the poor and middle peasants as faithful allies of the working class in the socialist reorganization of society because, like the workers, these peasants were oppressed and disinherited in old Russia. The broadest masses of the peasantry took part in the October Revolution and in defending the Soviet system during the Civil War.

With the advent of Soviet rule the situation in Russia's rural areas improved visibly. The peasants were given free use of the land that had been confiscated from the big landowners. Many poor peasants became middle peasants; many who had never had any land at all now started farming on their own. In the autumn of 1919, on the second anniversary of the October Revolution, Lenin noted: "Never, in the long centuries of our history, did the peasant have the opportunity to work for himself; turning over hundreds of millions of poods of grain to the capitalists, to the towns, and for export, he went hungry. Under the dictatorship of the proletariat the peasant, for the first time, has worked for himself and has more to eat than the city dweller. For the first time the peasant has seen real freedom: freedom to eat his bread, freedom from hunger."

With the transition in 1921 to the New Economic Policy, which gave the peasants freedom to sell their surplus produce, farm output—and, along with it, the peasants' incomes—began to grow. It looked as though the main difficulties had been surmounted.

Actually, things were not going too well. With agriculture fragmented into millions of tiny farms, the outlook for development was poor. Under the circumstances it was impossible to attain high productivity and bring about a significant improvement in the people's standard of living. Modern machinery and scientific methods simply could not be used on the small individual farms.

As the experience of other countries showed, bigger farms meant higher productivity. However, the social nature of large agricultural enterprises was not a matter of indifference to the Soviet system. The formation of big farms through the ruin of small producers, which was the course agricultural progress had taken in the capitalist countries, including prerevolutionary Russia, was unacceptable.

Lenin pointed the way: the gradual amalgamation of peasant households into big cooperative farms. Noting that it was impossible to socialize agriculture either at once or in a short time, he recommended a gradual transition through the setting up of various cooperative associations on a voluntary basis. "Only those associations are valuable," he emphasized, "which have been set up by the peasants themselves on their free initiative and whose benefits they have tested in practice."

The substance of Lenin's cooperative plan with regard to the peasantry consisted of beginning with the simplest forms of association—consumer societies, marketing societies, and the like—and then progressing to producer cooperatives, that is, a form of voluntary association under which there is joint farming, and the basic means of production—the land allotments, draft animals, field implements—are socialized. The socialist state gave every encouragement to peasant cooperatives, granting them credits, selling them farm machinery at favorable prices, and facilitating production in other ways.

In the early Soviet period there were three forms of joint agricultural enterprises: communes, associations for the joint cultivation of the land and collective farms. Experience proved the latter to be the most suitable. On a collective farm the work is carried out jointly, and each person gets paid according to the work he has done. The collective farmer has his own house, a plot of land for fruit trees and vegetables, his own cow, pigs and poultry. Correctly combining the peasant's personal interests with the interests of society and the state, the collective farm has become the predominant type of agricultural enterprise in the Soviet Union.

Lenin's cooperative plan became an integral part of the over-all program of building socialism in the Soviet Union. In 1927 the Fifteenth Congress of the Communist Party adopted a program on the collectivization of agriculture. Collectivization was accompanied by difficulties, at times very substantial ones. It was not easy for the peasant, whose private property mentality had been shaped through the centuries, to take up a new way of life founded on collectivist principles. All these difficulties were overcome, however, and by 1937, 10 years later, 93 per cent of the peasant farms had united in collective farms. Socialist relations became firmly entrenched in rural life.

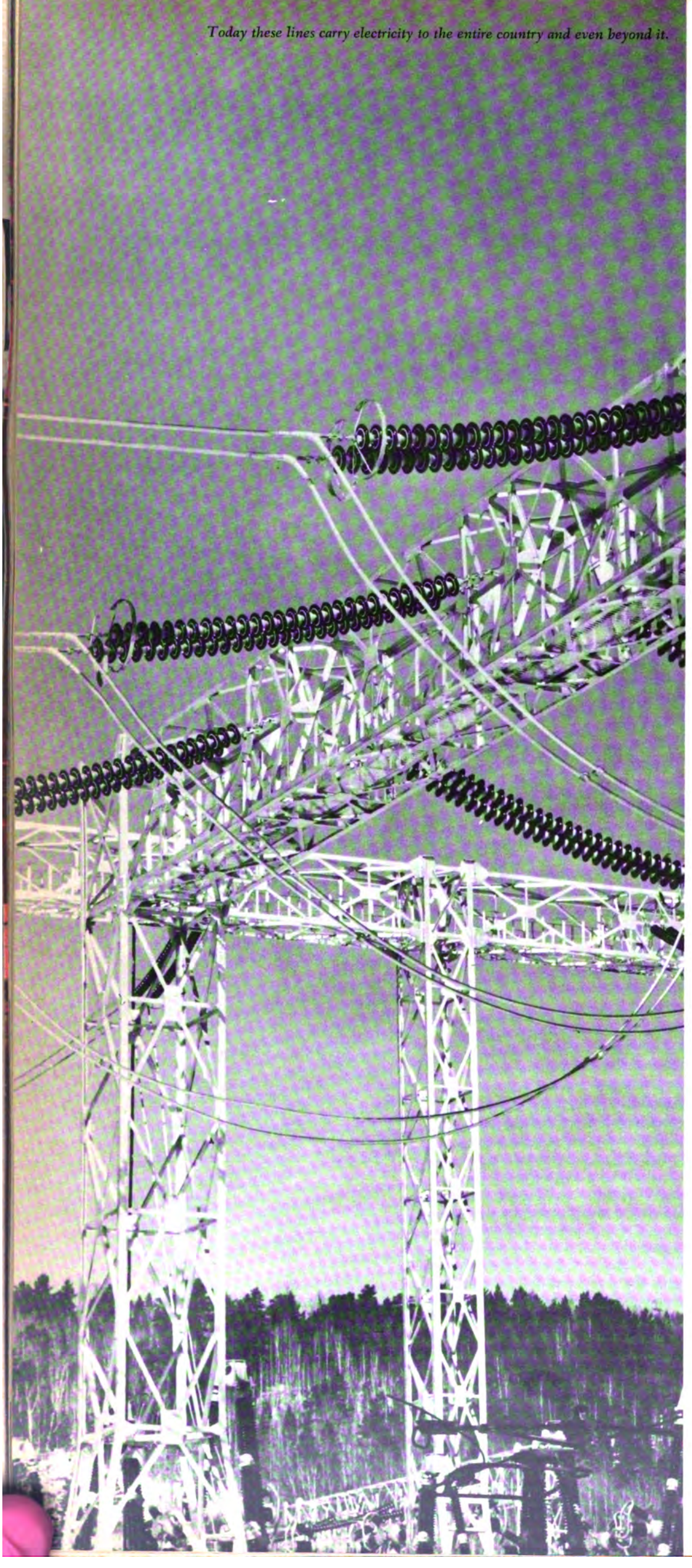
State farms—large state-operated socialist agricultural enterprises—were also set up in the early Soviet period at Lenin's suggestion. Organized on lands left over after all the peasants had received allotments, often on former big estates, they underwent extensive development. Today they cultivate approximately as much land as the collective farms.

Other Problems

The foregoing by no means exhausts the content of Lenin's plan for socialist economic development. His program included quite a few other fundamental ideas. Here are some of them, briefly.

Labor productivity. The purpose of all the steps toward modern-

Continued on page 34



Today these lines carry electricity to the entire country and even beyond it.

"The Kremlin



Proves

LENIN: "Electrification
will revive Russia.
Not only will towns
be rebuilt, even
the countryside will
change beyond recognition."

n Dreamer"



H. G. Wells called Lenin's plan for the electrification of Russia a utopian dream.

Realistic

"For Lenin, who like a good orthodox Marxist denounces all 'Utopians,' has succumbed at last to a Utopia, the Utopia of the electricians. He is throwing all his weight into a scheme for the development of great power stations in Russia to serve whole provinces with light, with

Man was the only source of energy in old Russia.



transport, and industrial power. Two experimental districts he said had already been electrified. Can one imagine a more courageous project in a vast flatland of forests and illiterate peasants, with no water power, with no technical skill available, and with trade and industry at the last gasp? . . . But their application [of such projects] to Russia is an altogether greater strain upon the constructive imagination."

H. G. Wells
Russia in the Shadows



Lenin speaking at the Eighth All-Russia Congress of Soviets in December 1920.



The Kaiser's troops in Kiev, capital of the Ukraine, during the intervention.



The whole country lay in ruins. Industry and transport were at a standstill.



Inspired by Lenin, they could see a bright tomorrow through the darkness.



Disease and famine forced the peasants to leave the land in search of food.



From 2 Billion to 700 Billion Kilowatt-hours

THE COUNTRY was devastated; the Civil War was still raging. There was no relief in sight, only destruction and hunger. The future promised nothing but early doom, a source of satisfaction to enemies both inside and outside the country.



Russia's future looked bleak indeed to H. G. Wells.

In December 1920 the Eighth All-Russia Congress of Soviets was held in Moscow, and Lenin spoke on GOELRO, the State Plan for the Electrification of Russia. He described the fascinating prospects of transforming a backward peasant country into an electrified industrialized state. That was the first time the people heard his famous formula: "Communism is Soviet power plus the electrification of the whole country."

The prospects of this formula, which became a program, were magnificent, but at the time the country lay in ruins. How could a man from another world believe Lenin's description of Russia's future? H. G. Wells, the English science fiction writer, refused to believe. He listened to what Lenin

was telling him, but his rich imagination could not conjure up the picture which Lenin described. Accordingly, in his book *Russia in the Shadows,* he wrote: "I cannot see anything of the sort happening in this dark crystal of Russia . . ."

Yet Lenin saw it all, nor was he the only one who believed in the success of GOELRO. Millions of people shared his faith and helped put his plans into action.

In 1925 the country's first large electric power station, built under the GOELRO plan—the Shaturskaya Thermoelectric Power Station—began operating. By 1931 the GOELRO plan had been fulfilled ahead of schedule.

But this was only the beginning. As the work progressed, it increased in scope. The construction of 12 large electric power stations, including the 560,000-kilowatt Dnieper Hydroelectric Power Station, began in 1928. In 1929 and 1930 the foundations of 10 more power stations were laid, and in 1931 the construction of another 10 began.



Only recently oppressed, illiterate and deprived of human dignity, Russia's workers and peasants came alive. By pointing the way out of their degradation, Lenin helped them see that a different life was possible. The Russian muzhik rolled up his sleeves and tackled the job. Russia "in the shadows" started glowing with electric lights. The whole country became one enormous construction site, with smokestacks of new factories visible everywhere.

Russia's workers and peasants were changing the image of the country, and their own image at the same time. Andrei Bochkin, chief of the Krasnoyarsk electric power station construction project, typifies the transformation.

Andrei Bochkin

Bochkin still remembers how his father and he tilled the earth with a wooden plow and how he did carpentry to earn something for a living. When the Socialist Revolution came, he welcomed it with an open heart and supported it, realizing that this was his own power, the power of the people. He was luckier than many of his contemporaries since he had attended several grades of a village school. When he heard that Lenin had appealed to the YCLers to study, he lost no time complying.

He was already 28 years old when he became a college student. But in those days, when the country desperately needed specialists, this wasn't so unusual. In this, too, he was luckier than his fellow students. As a student of the Moscow Power Engineering Institute, he received his practical training at the Dnieper Hydroelectric Power Station.

Hugh Cooper, the American hydraulic engineer working as consultant at the Dnieper station, certainly could not have noticed any difference between him and the other Soviet workers there. Yet when Bochkin recently went to Canada as a member of a delegation of hydroelectric power station builders, he certainly made news. At one of the local stations he managed to analyze the defect in a turbine simply by listening to it work. The Canadian specialists were amazed.

Bochkin is now head of the construction projects of many mammoth hydraulic engineering units, including such major projects as the Irkutsk Hydroelectric Power Station on the Angara and the Krasnoyarsk on the Yenisei.



Andrei Bochkin, head of construction of the Krasnoyarsk power station.

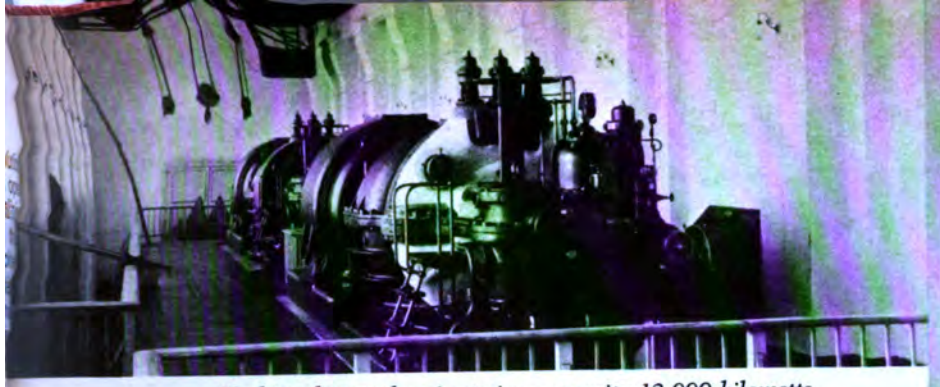
Stepping into the Future

In the GOELRO years Russia was learning to take its first steps. And now there are high-tension lines stretching across the country and carrying electricity to factories and construction projects. This is not surprising to anyone any more—it is a fact of our everyday life.

By now the GOELRO plan has been overfulfilled by 80 times, and yet there are more and more hydroelectric and thermal power stations appearing on the country's map. The power-producing facilities that Lenin said were necessary for radically changing the country's technical basis keep growing.

From two billion kilowatt-hours in 1913 to 700 billion kilowatt-hours in 1969, that is Russia's leap from the past to the present. This tremendous achievement was not easy to accomplish. The work was sometimes almost unbearable. Yet what makes us particularly glad is that its reward has been more than bountiful. At the Eighth Congress of Soviets Lenin said in part: ". . . If Russia is covered with a dense network of electric power stations and powerful technical installations, our communist economic development will become a model for a future socialist Europe and Asia."

Lenin's prophecy is indeed being fulfilled. The high-tension lines united into a grid with the symbolic name Mir (Peace) are already carrying electricity from the Soviet Union to the fraternal socialist countries in Europe.



Kashira thermoelectric station—capacity 12,000 kilowatts.



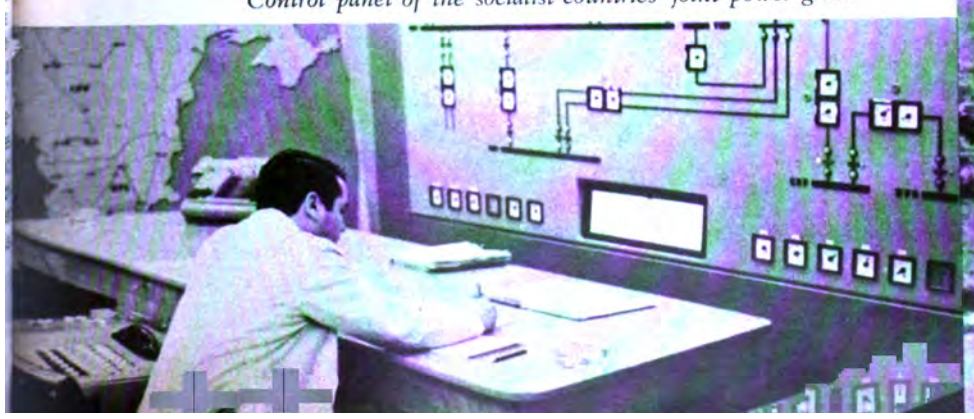
Volkhov hydroelectric station—capacity 56,000 kilowatts.



Nazarovo thermoelectric station—capacity 2 million kilowatts.



Bratsk hydroelectric station—capacity 4.1 million kilowatts.



Control panel of the socialist countries' joint power grid.

Statue of Lenin at the Dnieper Hydroelectric Power Station.



Chairman of the State Planning Commission Academician Gleb Krzhizhanovsky (left) and Academician Alexander Winter, power engineer, helped draft GOELRO.

Mikhail Kalinin at the opening of the Dnieper power station.



Hugh Cooper (left) headed the group of American consultants on the Dnieper project.

The dam (center) of the Dnieper station—capacity 560,000 kilowatts.

Center right: Electrification began with little more than strong backs and enthusiasm.





"Twelve thousand kilowatts [the Kashirskaya Thermoelectric Power Station] is a very modest beginning," said Lenin in 1921. "This may sound funny to the foreigner who is familiar with electrification in America, Germany or Sweden. But he laughs best who laughs last."

From Lenin's speech at the Third Congress of the Communist International



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In 1959, the Soviet Union was visited by a delegation of U.S. Senators who were interested in inspecting the 10 hydroelectric power stations under construction in the USSR. Upon their return, the American press said that the delegation, representing two Senate committees, had recently returned after a month's tour of the Soviet Union with convincing proof that the Soviet Union has overtaken the United States in the construction of hydroelectric power stations.

And here is what a U.S. Senator wrote in the Visitors Book at the Bratsk Hydroelectric Power Station in August 1968: "It is thrilling to return to Bratsk and to see the great dam and power station finished and working, providing electric power to the people of the Soviet Union. Nine years ago it was in the beginning stages. My congratulations to all who planned, built and now operate this great asset of the USSR."

Frank E. Moss
U.S. Senator
Utah

TEN MONTHS WITH LENIN

By Albert Rhys Williams

FIRST IMPRESSION OF LENIN

While a tumultuous, singing throng of peasants and soldiers, flushed with the triumph of their Revolution, jammed the great hall at Smolny, while the guns of the *Aurora* were heralding the death of the old order and the birth of the new, Lenin quietly stepped upon the tribunal and the chairman announced, "Comrade Lenin will now address the Congress."

We strained to see whether he would meet our image of him, but from our seats at the reporters' table he was at first invisible. Amidst loud cries, cheers, whistles and stamping of feet he crossed the platform, the demonstration rising to a climax as he stepped upon the speaker's rostrum, not more than thirty feet away. Now we saw him clearly and our hearts fell.

He was almost the opposite of what we had pictured him. Instead of looming up large and impressive he appeared short and stocky. His beard and hair were rough and unkempt.

After stilling the tornado of applause he said, "Comrades, we shall now take up the formation of the Socialist State." Then he went into an unimpassioned, matter-of-fact discussion. In his voice there was a harsh, dry note rather than eloquence. Thrusting his thumbs in his vest at the armpits, he rocked back and forth on his heels. For an hour we listened, hoping to discern the hidden magnetic qualities which would account for his hold on these free, young, sturdy spirits. But in vain.

We were disappointed. The Bolsheviks by their sweep and daring had captured our imaginations; we expected their leader to do likewise. We wanted the head of this party to come before us, the embodiment of these qualities, an epitome of the whole movement, a sort of super-Bolshevik. Instead of that, there he was, looking like a Menshevik, and a very small one at that.

"If he were spruced up a bit you would take him for a bourgeois mayor or banker of a small French city," whispered Julius West, the English correspondent.

"Yes, a rather little man for a rather big job," drawled his companion.

We knew how heavy was the burden that the Bolsheviks had taken up. Would they be able to carry it? At the outset, their leader did not strike us as a strong man.

So much for a first impression. Yet, starting from that first adverse estimate, I found myself six months later in the camp of Woskov, Niebut, Peters, Volodarsky and Yanishev, to whom the first man and statesman of Europe was Nikolai Lenin.[1]

[1] Nikolai Lenin is the name Vladimir Lenin sometimes used to sign his writing. (Ed.)

LENIN INJECTS IRON DISCIPLINE INTO THE STATE LIFE

On November 9th I desired a pass to accompany the Red Guards then streaming out along all roads to fight the Cossacks and the counterrevolutionists. I presented my credentials bearing the signature of Hillquit[2] and Huysmans.[3] I thought they were a very imposing set of credentials. But Lenin didn't. Quite as if they came from the Union League Club, he handed them back with a laconic, "No."

This was a trivial incident, but indicative of a new, rigorous attitude now appearing in the councils of the proletarians. Hitherto, to their own destruction, the masses had been indulging their excessive amiability and good nature. Lenin set out for discipline. He knew that only strong, stern action could save the Revolution, menaced by hunger, invasion and reaction. So the Bolsheviks drove their measures through without ruth or hesitation, while their enemies ransacked the arsenals of invective for epithets to assail them. To the bourgeoisie Lenin was the high-handed, iron-fisted one. . . .

During these chaotic weeks only iron will and iron nerve would suffice. Rigid order and discipline were evident in all departments. One could note the stiffening of the morale of the workingman, a tightening up of the loose parts in the Soviet machinery. Now when the Soviet moved out into action, as for example in the seizure of the banking system, it struck hard and effectively. Lenin knew where to be precipitate in action, but he knew also where to go slow. A delegation of workingmen came to Lenin asking him if he could decree the nationalization of their factory.

"Yes," said Lenin, picking up a blank form, "it is a very simple thing, my part of it. All I have to do is to take these blanks and fill in the name of your factory in this space here, and then sign my name in this space here, and the name of the commissar here." The workmen were highly gratified and pronounced it "very good."

"But before I sign this blank," resumed Lenin, "I must ask you a few questions. First, do you know where to get the raw materials for your factory?" Reluctantly they admitted they didn't.

"Do you understand the keeping of accounts," resumed Lenin, "and have you worked out a method for keeping up production?" The workmen said they were afraid they did not know very much about these minor matters.

[2] Hillquit was a leader of the Socialist Party of the United States and also an active member of the Second International. (Ed.)

[3] Huysmans was a Belgian right-wing socialist, a member of the Second International. (Ed.)

"And finally, comrades," continued Lenin, "may I ask you whether you have found a market in which to sell your products?"

Again they answered, "No."

"Well, comrades," said the Premier, "don't you think you are not ready to take over your factory now? Go back home and work over these matters. You will find it hard; you will make many blunders, but you will learn. Then come back in a few months and we can take up the nationalizing of your factory."

IRON DISCIPLINE IN LENIN'S PERSONAL LIFE

The same iron that Lenin was injecting into the social life he showed in his individual life. *Shchi* and *borshch,* slabs of black bread, tea and porridge made up the fare of the Smolny crowds. It was likewise the usual fare of Lenin, his wife and sister. For twelve and fifteen hours a day the revolutionists stuck to their posts. Eighteen and twenty hours was the regular stint for Lenin. In his own hand he wrote hundreds of letters. Immersed in his work, he was dead to everything, even his own sustenance. Grasping her opportunity when Lenin was engaged in conversation his wife would appear with a glass of tea, saying, "Here, *tovarishch,* you must not forget to drink this." Often the tea was sugarless, for Lenin went on the same ration as the rest of the population. The soldiers and messengers slept on iron cots in the big, bare, barrack-like rooms. So did Lenin and his wife. Wearied, they flung themselves down on their rough couches, oftentimes without undressing, ready to rise to any emergency. Lenin did not take upon himself these privations out of any ascetic impulses. He was simply putting into practice the first principle of Communism. . . .

I was in the National Hotel when Lenin took a room on the second floor. The first act of the new Soviet regime was the abolition of the elaborate and expensive menus. The many dishes that comprised a meal were cut down to two. One could have soup and meat or soup and *kasha.* And that is all that anyone, whether Chief Commissar or kitchen-boy, could have, for it is written in the creed of the Communists that "No one shall have cake until everybody has bread." On some days there was very little even of bread for the people. Still each person got just as much as Lenin. Occasionally there were days without any bread at all. Those days, too, were breadless days for him.

When Lenin was near death in the days following the attempt upon his life, the physicians prescribed some food not obtainable on the regular food-card and which could be bought only in the market from some speculator. In spite of all the en-

Albert Rhys Williams, American writer and publicist, visited the Soviet Union several times. With John Reed he witnessed the October Revolution. He tried to analyze the Revolution without bias to see the relation of forces and to understand the aims of the Bolshevik movement. Williams met Lenin on several occasions. In 1919 he wrote *Lenin. The Man and His Work* and in 1921 *Through the Russian Revolution*.

These are excerpts from *Lenin. The Man and His Work*.

treaties of his friends, he refused to touch anything which was not part of the legitimate ration.

Later when Lenin was convalescing his wife and sister hit upon a scheme for increasing his nutriment. Finding that he kept his bread in a drawer, in his absence they slipped into his room and now and then added a piece to his store. Absorbed in work, Lenin would reach into the drawer and take a bit, which he ate quite unconscious that it was any addition to the regular ration.

In a letter to the workers of Europe and America, Lenin wrote: "Never have the Russian masses suffered such depths of misery, such pangs of hunger as those to which they are now condemned by the military intervention of the Entente!" But these same sufferings Lenin was enduring along with the masses about whom he writes. . . .

PRACTICE OF COMMUNISM RALLIES THE PEOPLE TO THE SOVIET

Lenin was of course pictured in the bourgeois press as the opposite of this. A fiend incarnate, a selfish, grasping monster. But gradually the real Lenin emerged from this shroud of lies. And as the news spread through Russia that Lenin and his colleagues were taking potluck with the people, the masses rallied around them.

The miner in the Urals, inclined to grumble at his meager ration, remembers that each one draws alike from the common store of food and clothes and shelter. Why, then, should he grumble at his morsel of black bread? At any rate it is as large as Lenin's. The rankling pangs of injustice are not added to the pangs of hunger.

The peasant wife shivering in the icy blasts that sweep off the Volga knows little of the man who has taken the place of the Czar. But she hears that he often has an unheated room. Now though she suffers from the cold she does not suffer from the inequalities of life.

The engineer at Nizhni, finding the six hundred rubles in the pay-envelope woefully inadequate to cover the needs of his family, begins to be bitter. Then he recollects that the man in the Kremlin draws no more. That helps to take the rancor away.

The Soviet soldier facing the drumfire of the Allied guns knows that Lenin is also on the firing line though he is in the rear. For danger, like everything else in Russia, has been socialized. No one is immune from it. The percentage of Soviet leaders killed and wounded at the front. Uritsky, Volodarsky and scores of others have been assassinated while Lenin's body has twice stopped the assassin's bullets. To the Red Soldier Lenin then is not someone aloof from the fray, but a comrade in arms sharing the risks and hardships of the campaign.

The American Mission to Russia report by Bullitt says:

"Lenin today is regarded as almost a prophet. His picture, usually accompanied by Karl Marx's, hangs everywhere. When I called on Lenin at the Kremlin I had to wait a few minutes until a delegation of peasants left his room. They had heard in their village that Comrade Lenin was hungry. And they had come hundreds of miles carrying eight hundred *puds* of bread as the gift of the village to Lenin. Just before them was another delegation of peasants to whom the report had come that Comrade Lenin was working in an unheated room. They came bearing a stove and enough firewood to heat it for three months. Lenin is the only leader who receives such gifts. And he turns them into the common fund."

Sharing alike in the common wealth and the common dearth created a common bond of sympathy running from Premier to poorest peasant, bringing to the Soviet leaders the increasing support of the people.

PRACTICE OF COMMUNISM GIVES LENIN THE PULSE OF THE PEOPLE

Living so close to the people, the Communist leaders knew the ebb and flow of popular feeling.

Lenin did not need to send out a commission to discover the sentiments and psychology of the people. A man going without food doesn't have to speculate upon the mood of a hungry man. He knows. Hungering with the people, freezing with the people, Lenin was feeling their feelings, thinking their thoughts, and voicing their desires.

Now this is precisely the way in which the Communist Party claims to function—as an instrument directly reflecting the thoughts of the masses and as a mouthpiece articulating them.

The Communists say: "We did not create the Soviets. They sprang out of the life of the people. We did not hatch up some program in our brains and then take it out and superimpose it upon the people. Rather we took our program directly from the people themselves. They were demanding 'Land to the Peasants,' 'Factories to the Workers,' and 'Peace to All the World.' We wrote these slogans upon our banners and with them marched into power. Our strength lies in our understanding of the people. In fact, we do not need to understand the people. We are the people." This was certainly true of the rank and file of the leaders, who, like the five young Communists we first met in Petrograd, were flesh and bone of the people.

But intellectuals like Lenin—how can they speak for the people? How can they understand the hearts and minds of the masses? The answer is that they never can. That is certain. But it is equally certain, as Tolstoy showed, that he who lives the life of the people gets closer than he who holds himself aloof from their struggles. So Lenin had one great advantage over his opponents. He did not have to guess about the feelings of the Ural miner, the Volga peasant or the Soviet soldier. He knew them, approximately, at any rate. For their experiences were his experiences. So while his opponents were fumbling in the dark, Lenin drove ahead with the assurance of the man who knows his ground.

This practice of communism by the Soviet leaders is one of the powerful factors in rallying strength to the Soviet government. Outside Russia this fact has been passed over, or it has been minimized. Lenin, however, did not minimize it. He held it to be essential in the Soviet system. In the vortex of events he took time to write, in *The State and Revolution*, an exposition upon the practice of communism as the true road for proletarian statesmen to take. It is a hard road. There are few that follow in it.

LENIN'S MANNER IN PRIVATE ADDRESS

Only once did I see evidence of weariness in him. After a midnight meeting of the Soviet, he stepped into the elevator of the National Hotel with his wife and sister. "Good evening," he said, rather wearily. "No," he added, "it's good morning. I've been talking all day and night, and I'm tired. I'm riding the elevator though it is but one flight up."

Only once did I ever see him hurried or rushed. That was in February, when the Tauride Palace* was again the scene of a fevered conflict—the debate over war or peace with Germany. Suddenly he appeared, and with quick, vigorous stride was fairly hurtling himself down the long hall toward the platform entrance. Professor Charles Kuntz and I were lying in wait for him, and hailed him with, "Just a minute, *Tovarishch* Lenin."

He checked his headlong flight and came to attention in almost military fashion, bowed very gravely, and said, "Will you be so good as to let me go this time, comrades? I haven't even as much as a second. They are awaiting me inside the hall. I beg you to excuse me this time, please." With another bow and a handshake he was off in full stride again.

Wilcox, an anti-Bolshevik, commenting on the amenity of Lenin in intimate relationships, says that an English merchant, in order to rescue his family from a critical sit-

* The Tauride Palace in Leningrad was the setting for many historical events. The State Duma met there. It was where the Petrograd City Soviet of Workers' and Soldiers' Deputies worked during the Revolution of February 1917. The congresses of the Bolsheviks were also held in the palace. (Ed.)

uation, went to seek Lenin's personal aid. He was astonished to find the "bloodthirsty tyrant" a mild-mannered man, courteous and sympathetic in bearing, and almost eager to afford all assistance in his power.

In fact, at times he seemed over-courteous, exaggeratedly so. This may have been due to his use of English, lifting bodily from the books the elaborate forms of polite conversation. More probably, it was part of his technique in social intercourse, for Lenin was highly efficient here as elsewhere. . . .

It was hard to get at Lenin, but once you did you had all there was of him. All his faculties were focused upon you in a manner so acute as to be embarrassing. After a polite, almost an effusive, greeting, he drew up closer until his face would be no more than a foot away. As the conversation went on he often came still closer, gazing into your eyes as if he were searching out the inmost recesses of your brain and peering into your very soul.

We often met a certain Socialist who in 1905 had taken part in the Moscow uprising and had even fought well on the barricades. A career and the comforts of life had weaned him from his first ardent devotion. He wore now an air of prosperity, acting as correspondent for an English newspaper syndicate and Plekhanov's *Yedinstvo*.[5] Bourgeois writers were regarded by Lenin as wasters of time; but by playing up his past revolutionary record this man had managed to secure an appointment with Lenin. He was in high spirits as he went away to meet it. Some hours later I saw him in a state of perturbation. He explained:

"When I walked into the office I referred to my part in the 1905 revolution. Lenin came up to me and said, 'Yes, comrade, but what are you doing for *this* revolution?' His face was not more than six inches away and his eyes were looking straight into mine. I spoke of my old days on the Moscow barricades, and took a step backward. But Lenin took a step forward, not letting go my eyes, and said again, 'Yes, comrade, but what are you doing for *this* revolution?' It was like an X-ray—as if he saw all my deeds of the last ten years. I couldn't stand it. I had to look down like a guilty child. I tried to talk, but it was no use. I had to come away." A few days later this man threw in his lot with *this* revolution and became a worker for the Soviet.

LENIN'S SINCERITY AND HATRED OF UNREALITY

One of the secrets of Lenin's power is his terrible sincerity. He was sincere with his friends. He was gratified, of course, with each accession to the ranks, but he would not enlist a single recruit by painting in roseate hues the conditions of service, or the future prospects. Rather he tended to paint things blacker than they were. The burden of many of Lenin's speeches was: "The goal the Bolsheviks are striving for is far away—further away than most of you dream. We have led Russia along a rough road, but the course we follow will bring us more enemies, more hunger. Difficult as the past has been, the future promises harder things—harder than you imagine." Not an alluring promise. Not the usual call to arms! Yet as the Italians rallied to Garibaldi, who came offering wounds, prison and death, the Russians rallied to Lenin. This was a little discomforting to one expecting the leader to glorify his cause and to urge the prospective convert into joining it. He left the urge to come from within.

Lenin is sincere even with his avowed enemies. An Englishman, commenting on his extraordinary frankness, says his attitude was like this: "Personally, I have nothing against you. Politically, however, you are my enemy and I must use every weapon I can think of for your destruction. Your government does the same against me. Now let us see how far we can go along together."

This stamp of sincerity is on all his public utterances. Lenin is lacking in the usual outfit of the statesman-politician—bluff, glittering verbiage and success-psychology. One felt that he could not fool others even if he desired to. And for the same reasons that he could not fool himself: His scientific attitude of mind, his passion for the facts.

His lines of information ran out in every direction, bringing him multitudes of facts. These he weighed, sifted and assayed. Then he utilized them as a strategist, a master chemist working in social elements, a mathematician. He would approach a subject in this way:

"Now the facts that count for us are these: One, two, three, four——" He would briefly enumerate them. "And the factors that are against us are these."

In the same way he would count them up, "One, two, three, four—— Are there any others?" he would ask. We would rack our brains for another, but generally in vain. Elaborating the points on each side, pro and contra, he would proceed with his calculation as with a problem in mathematics. . . .

Relentless as he is toward the phraseologists of the Right, he is equally as hard upon those phraseologists of the Left who seek refuge from reality in revolutionary slogans. He feels it his duty "to pour vinegar and bile into the sweetened waters of revolutionary-democratic eloquence," and he treats the sentimentalist and shouter of shibboleths with caustic ridicule. When the Germans were making their drive upon the Red Capital a flood of telegrams poured in on Smolny from all over Russia, expressing amazement, horror and indignation. They ended with slogans like "Long live the invincible Russian proletariat!" "Death to the imperialistic robbers!" "With our last drop of blood we will defend the capital of the Revolution!"

Lenin read them and then dispatched a telegram to all the Soviets, asking them kindly not to send revolutionary phrases to Petrograd, but to send troops; also to state precisely the number of volunteers enrolled, and to forward an exact report upon the arms, ammunition and food conditions.

LENIN AT WORK IN A CRISIS

With the advance of the Germans came the flight of the foreigners. The Russians manifested a mild surprise that all those who had so wildly cried to them, "Kill the Huns!" now fled precipitately when the Hun came within killing range. It would have been good to join the hegira, but there was my pledge made upon the armored car. So I went out to join the Red Army. . . .

"My congratulations! My felicitations!" said Lenin. "It looks very bad for us just now. The old army will not fight. The new one is largely upon paper. Pskov has just been surrendered without resistance. That is a crime. The President of the Soviet ought to be shot. Our workers have great self-sacrifice and heroism. But no military training, no discipline."

Thus in about twenty short sentences he summed up the situation, ending with, "All I can see is peace. Yet the Soviet may be for war. In any case, my congratulations for joining the Revolutionary Army. After your struggle with the Russian language you ought to be in good training to fight the Germans." He ruminated a moment and added:

"One foreigner can't do much fighting. Maybe you can find others." I told him that I might try to form a detachment.

Lenin was a direct actionist. A plan conceived, at once he proceeded to put it into execution. He turned to the telephone to ring up Krylenko, the Soviet commander. Failing, he picked up a pen and scribbled him a note.

By night we had formed the International Legion and issued our call summoning all men speaking foreign languages to enroll in the new company. But Lenin did not drop the matter there. He was not content merely with inaugurating something in the grand manner. He followed it up relentlessly and in detail. Twice he telephoned the *Pravda* office instructing them to print the call in Russian and in English. Then he telegraphed it through the country. Thus, while opposing the war, and particularly those who were intoxicating themselves with revolutionary phrases about it, Lenin was mobilizing every force to prepare for it.

He sent an automobile with Red Guards to the fortress of Peter and Paul to fetch part of the counterrevolutionary staff imprisoned there.

"Gentlemen," said Lenin, as the generals filed into his office, "I have brought you here for expert advice. Petrograd is in danger. Will you be good enough to work out the military tactics for its defense?" They assented.

"Here are our forces," resumed Lenin, indicating upon the map the location of the Red troops, munitions and reserves. "And here are our latest reports upon the number and disposition of the enemy troops. Anything else the generals desire they will call for."

They set to work and toward evening handed him the result of their deliberations. "Now," said the generals ingratiatingly, "will the Premier be good enough to allow us more comfortable quarters?"

"My exceeding regrets," replied Lenin. "Some other time, but not just now. Your quarters, gentlemen, may not be comfortable, but they have the merit of being very safe." The staff was returned to the fortress of Peter and Paul.

LENIN'S ATTITUDE TOWARD MEN OF BRAINS

. . . It is true that in all their actions and decrees Lenin and the Soviet government show the high value they set upon brains. In every realm Lenin defers to the expert. He looks to the generals even of the Czar's regime as the authorities in military affairs. If Marx, the German, is Lenin's authority in revolutionary tactics, Taylor, the American, is his authority in efficiency production. And he always was stressing the value of the expert accountant, the big engineer, the specialist in every field of activity. He believed that the Soviet would be a magnet drawing them from around the world. He believed they would see in the Soviet system a wider range for the play of their creative abilities than in any other system. . . .

Besides, Russia under the Soviet offers to the engineer or administrator not only its vast wealth to work upon but also a labor force, enthusiastic and alive, with which to work it.

This latter condition does not obtain under the capitalist system where the workman's greatest interest lies in his wages rather than in his work, and where the management and the labor force come into constant conflict. Under the Soviet the energies of the men, instead of being spent in quarreling over the division of the product, are liberated for the task of larger production. Lenin believed in the great results arising from the Soviet system calling out the enthusiastic creative energies of the masses and at the same time giving a free hand to the men of brains and genius.

In his survey of social forces Lenin made his estimate of the value of all the different elements. The intellectuals had their place before and after the Revolution. As agitators they could help make the Revolution possible. As experts with skill and technic they could help make the Revolution permanent and stable.

[5] *Yedinstvo (Unity)* was a legal newspaper published by a group of Mensheviks headed by Georgi Plekhanov. (Ed.)

"THE WAR IS ENDED! THE WAR IS ENDED!"

By John Reed

John Reed was an American Communist writer. He visited Russia several times, saw revolutionary history made in October 1917 and talked with Lenin. His book* Ten Days That Shook the World, *from which this excerpt is taken, was published in the United States in 1919. It was the first foreign literary work to tell Americans and the world the truth about the Socialist Revolution. The first Russian edition appeared in 1923. In his foreword to the American edition Lenin spoke highly of John Reed's work. The writer died in Moscow in 1920 and was buried under the Kremlin wall.

. . . It was just 8:40 when a thundering wave of cheers announced the entrance of the presidium, with Lenin—great Lenin—among them. A short, stocky figure, with a big head set down in his shoulders, bald and bulging. Little eyes, a snubbish nose, wide, generous mouth, and heavy chin; clean-shaven now, but already beginning to bristle with the well-known beard of his past and future. Dressed in shabby clothes, his trousers much too long for him. Unimpressive, to be the idol of a mob, loved and revered as perhaps few leaders in history have been. A strange popular leader—a leader purely by virtue of intellect; colorless, humorless, uncompromising and detached, without picturesque idiosyncrasies—but with the power of explaining profound ideas in simple terms, of analyzing a concrete situation. And combined with shrewdness, the greatest intellectual audacity. . . .

. . . Now Lenin, gripping the edge of the reading stand, letting his little winking eyes travel over the crowd as he stood there waiting, apparently oblivious to the long-rolling ovation, which lasted several minutes. When it finished, he said simply, "We shall now proceed to construct the Socialist order!" Again that overwhelming human roar.

"The first thing is the adoption of practical measures to realize peace. . . . We shall offer peace to the peoples of all the belligerent countries upon the basis of the Soviet terms—no annexations, no indemnities, and the right of self-determination of peoples. At the same time, according to our promise, we shall publish and repudiate the secret treaties. . . . The question of War and Peace is so clear that I think that I may, without preamble, read the project of a Proclamation to the Peoples of All the Belligerent Countries. . . ."

His great mouth, seeming to smile, opened wide as he spoke; his voice was hoarse—not unpleasantly so, but as if it had hardened that way after years and years of speaking—and went on monotonously, with the effect of being able to go on forever. . . . For emphasis he bent forward slightly. No gestures. And before him, a thousand simple faces looking up in intent adoration.

PROCLAMATION TO THE PEOPLES AND GOVERNMENTS OF ALL THE BELLIGERENT NATIONS

The Workers' and Peasants' Government, created by the revolution of November 6th and 7th and based on the Soviets of Workers', Soldiers' and Peasants' Deputies, proposes to all the belligerent peoples and to their Governments to begin immediately negotiations for a just and democratic peace.

The Government means by a just and democratic peace, which is desired by the immense majority of the workers and the laboring classes, exhausted and depleted by the war—that peace which the Russian workers and peasants, after having struck down the Czarist monarchy, have not ceased to demand categorically—immediate peace without annexations (that is to say, without conquest of foreign territory, without forcible annexation of other nationalities), and without indemnities.

The Government of Russia proposes to all the belligerent peoples immediately to conclude such a peace, by showing themselves willing to enter upon the decisive steps of negotiations aiming at such a peace, at once, without the slightest delay, before the definitive ratification of all the conditions of such a peace by the authorized assemblies of the people of all countries and of all nationalities. . . .

To continue this war in order to permit the strong and rich nations to divide among themselves the weak and conquered nationalities is considered by the Government the greatest possible crime against humanity; and the Government solemnly proclaims its decision to sign a treaty of peace which will put an end to this war upon the above conditions, equally fair for all nationalities without exception.

The Government abolishes secret diplomacy, expressing before the whole country its firm decision to conduct all the negotiations in the light of day before the people, and will proceed immediately to the full publication of all secret treaties confirmed or concluded by the Government of landowners and capitalists, from March until November 7th, 1917. All the clauses of the secret treaties which, as occur in a majority of cases, have for their object to procure advantages and privileges for Russian capitalists, to maintain or augment the annexations of the Russian imperialists, are denounced by the Government immediately and without discussion.

In proposing to all Governments and all peoples to engage in public negotiations for peace, the Government declares itself ready to carry on these negotiations by telegraph, by post or by pourparlers between the representatives of the different countries, or at a conference of these representatives. To facilitate these pourparlers, the Government appoints its authorized representatives in the neutral countries. . . .

When the grave thunder of applause had died away, Lenin spoke again:

"We propose to the Congress to ratify this declaration. We address ourselves to the Governments as well as to the peoples, for a declaration which would be addressed only to the peoples of the belligerent countries might delay the conclusion of peace. The conditions of peace, drawn up during the armistice, will be ratified by the Constituent Assembly. In fixing the duration of the armistice at three months, we desire to give to the peoples as long a rest as possible after this bloody extermination, and ample time for them to elect their representatives. This proposal of peace will meet with resistance on the part of the imperialist governments—we don't fool ourselves on that score. . . .

"The revolution of November 6th and 7th," he ended, "has opened the era of the Social Revolution. . . . The labor movement, in the name of peace and Socialism, shall win, and fulfill its destiny. . . ."

There was something quiet and powerful in all this, which stirred the souls of men. It was understandable why people believed when Lenin spoke. . . .

It was exactly 10:35 when Kamenev asked all in favor of the proclamation to hold up their cards. One delegate dared to raise his hand against, but the sudden, sharp outburst around him brought it swiftly down. . . . Unanimous.

Suddenly, by common impulse, we found ourselves on our feet, mumbling together into the smooth, lifting unison of the *Internationale*. A grizzled old soldier was sobbing like a child. Alexandra Kollontai rapidly winked the tears back. The immense sound rolled through the hall, burst windows and doors and seared into the quiet sky. "The war is ended! The war is ended!" said a young workman near me, his face shining. And when it was over, as we stood there in a kind of awkward hush, someone in the back of the room shouted, "Comrades! Let us remember those who have died for liberty!" So we began to sing the Funeral March, that slow, melancholy and yet triumphant chant, so Russian and so moving. The *Internationale* is an alien air, after all. The Funeral March seemed the very soul of those dark masses whose delegates sat in this hall, building from their obscure visions a new Russia—and perhaps more.

You fell in the fatal fight
For the liberty of the people, for the honor of the people . . .
You gave up your lives and everything dear to you,
You suffered in horrible prisons,
You went to exile in chains. . . .
. . . . . .
Farewell, brothers, you chose a noble path,
At your grave we swear to fight, to work for
freedom and the people's happiness. . . .

For this did they lie there, the martyrs of March, in their cold Brotherhood Grave on Mars Field; for this thousands and tens of thousands had died in the prisons, in exile, in Siberian mines. It had not come as they expected it would come, nor as the *intelligentsia* desired it; but it had come—rough, strong, impatient of formulas, contemptuous of sentimentalism; *real*. . . .

Continued from page 21

izing production was to increase labor productivity as a basic contribution to the success of the new society. "Labor productivity," said Lenin, "is, in the final analysis, the most important thing, the main thing for the victory of the new social system." The quest for this victory gave meaning to the effort of building the new economy.

Money, market and incentives. Lenin had a thoroughly scientific and realistic approach to questions connected with the role of money, commodity-money relations (the market), personal incentives and similar factors under socialism. There were people immediately after the Revolution who suggested doing away with money and the market, and throwing overboard, as bourgeois, wages, accounting, profitability, profit, credit and other economic categories. All economic relations, they said, should be based exclusively on the consciousness of the citizens, "on enthusiasm."

Lenin caustically deflated these romantic vagaries. Of course, he said, the time would come when fixtures in public toilets in the world's biggest cities would be made of gold—probably its most "equitable" and edifying use—but meanwhile money could not be renounced. On the contrary, commodity-money relations (presupposing the sale and purchase of goods), money circulation, remuneration for work in the form of individual wages and other instruments of economic accounting and regulation were necessary in the period of building socialism. Since the means of production in the new society belonged to the people, instead of to private individuals, no one could turn money into capital, that is, into a tool for exploiting people and getting rich. The socialist economy could not be conducted without keeping books on society's revenues and expenditures, without strict supervision over the amount of work and the level of consumption.

Advocating a combination of moral and material incentives under socialism, Lenin said in his article "The Fourth Anniversary of the October Revolution" (1921):

> Not directly relying on enthusiasm, but aided by the enthusiasm engendered by the great revolution, and on the basis of personal interest, personal incentive and business principles, we must first set to work . . . to build solid gangways to socialism. . . . Otherwise . . . we shall never bring scores of millions of people to communism.

Observance of the principal of material incentive—of larger remuneration for better or more difficult work—makes it possible to combine personal interest correctly with the interests of society under socialism.

Commodity-money relations are a flexible and effective instrument in guiding the socialist economy. The current economic reform in the Soviet Union provides for use of this instrument more consistently than ever before.

A Self-Supporting Operation

Lenin introduced into the Soviet economy the principle of operation on a self-supporting basis. An enterprise is supplied with resources by the state and has a definite degree of independence in managing its affairs. The difference between its production costs and the returns for its products constitutes profit. The size of profit is an indicator of the efficiency of a socialist enterprise. Part goes to society and the rest remains with the enterprise, which uses it to expand and modernize production, build housing for its workers and nurseries and kindergartens for their children, and pay bonuses. This gives the staff greater incentive to improve efficiency. Self-supporting enterprises enter into relations with one another as autonomous economic units. Each enterprise is responsible for fulfilling its program and for observing the terms of its contracts with other enterprises.

The state as manager. The new, socialized economy naturally required a new system of management. In 1919, when some experience in organizing the Soviet economy had already been gained, the Communist Party program stated: "In the era when socialization of the means of production expropriated from the capitalists has begun, state power ceases to be a parasitical apparatus standing above the production process; it starts to turn into an organization that directly carries out the function of managing the country's economy. . . ." (This program was drafted by a committee guided by Lenin.)

Lenin pointed out that there were two types of institutions in the state apparatus of the Soviet Republic: Some performed purely political functions while others, like the Supreme Economic Council, carried out economic administrative functions. In the future, under communism, institutions of the first type were destined to gradually "wither away," while those of the second type would "grow, develop and strengthen, encompassing the entire main activity of the organized society."

Under Lenin the State Planning Commission was set up and the principle of vertical industrial management (by sectors) introduced. Changes have been made in the commission to meet new needs, but the substance of Lenin's approach remains to this day.

Democratic centralism. Lenin also defined the method of socialist economic management. This is the principle of democratic centralism, under which centralized guidance is combined with broad popular initiative in the economic activity of enterprises, regions and republics.

Nothing was more mistaken, said Lenin, than to confuse democratic centralism with bureaucracy and conformity. "Centralism, understood in the truly democratic sense," he wrote, "presupposes the possibility, created for the first time in history, of the full and unhampered development not only of specific local features but also of local inventiveness, local initiative, of diverse ways, methods and means of moving toward a common goal."

The economic reform now being carried out in the Soviet Union develops the principle of democratic centralism by broadening the powers of enterprises and republics.

Socialist Attitude Toward Work

Socialism had to be built with the help of people who had lived in the old society and had inherited its habits and its individualistic psychology. A high sense of civic awareness did not come to everyone at once; it arose in the process of building the new life.

In his article "How to Organize Competition" written in 1917, soon after the Revolution, Lenin thoroughly analyzed the various aspects of the socialist attitude toward work. Replying to those who claimed that competition is a stimulus to production under capitalism but disappears under socialism, Lenin said:

> Far from extinguishing competition, socialism, on the contrary, for the first time creates the opportunity for employing it on a really *wide* and on a really *mass* scale, for actually drawing the majority of working people into a field of labor in which they can display their abilities, develop their capacities, reveal the talents that are so abundant among the people, and that capitalism crushed, suppressed and strangled in thousands and millions.

In 1919, the grimmest period of the Civil War, industrial workers in a number of towns organized, on their own initiative, what came to be known as communist *subbotniks,* days on which they worked without pay for the benefit of the republic. Summing up these examples of the citizens' new understanding of the interests of society, Lenin called them "a great beginning." He said that the young shoots of the new order should be studied carefully, fostered and encouraged, and that life would select the most virile ones.

This was not, of course, a question of making work without pay the rule; the principle of payment according to work remained in full force. It was a question of popularizing and encouraging good examples, of educating conscious builders of the new society.

The socialist economy called for the strictest discipline and self-discipline in work, said Lenin. Socialist discipline has nothing in common, for instance, with discipline forced by the threat of unemployment. Lenin called it the "discipline of conscious and united workers who do not have over them any yoke or any force except the strength of their own unity, their own, more conscious, bold, united, revolutionary, tested vanguard."

Socialist competition in work has struck deep roots and contributed significantly to speeding fulfillment of the five-year plans. In recent years it has developed into a competition promoting the communist style of working. Soviet young people are distinguishing themselves in this movement by their energetic participation in the construction of big factories, power stations and railroads, and in development projects in Siberia, the country's far eastern regions and the Far North.

To sum up, Lenin laid the theoretical and organizational foundations of the socialist economy and participated in the first steps of building this economy. In the years that followed, the Communist Party and Soviet governmental bodies, with the active collaboration of scientists and scholars, amplified Lenin's guidelines creatively, in conformity with the new demands of life. It is in this light that the current economic reform, especially, can be regarded.

The Results

What results have the Soviet people attained in building the socialist economy according to Lenin's precepts?

They have turned their once backward country into a highly developed industrial power. All the non-Russian republics, including those where there was no industry at all before the Revolution, have built modern industrial enterprises on the foundation of socialist relations of equality and mutual assistance. Industrialization of the Soviet Union was carried out in a relatively short time. Today the country accounts for 20 per cent of the world's industrial production, as compared with Russia's four per cent in 1913.

Soviet industrial output in 1968 was 66 times greater than in 1928, when work on the first Five-Year Plan began. The average annual growth rates have been high. Electric power production increased from five billion kilowatt-hours in 1928 to 638 billion in 1968; steel output went up from 4.3 million tons to 107 million tons. The picture was the same in the other industries. Labor productivity increased 14 times in this period.

The value of farm output (in comparable prices) rose from 28 billion rubles in 1913 to 81 billion in 1968. The grain harvest in 1968 amounted to 169 million tons, as compared with 86 million in 1913. Agricultural development has not yet reached the desired level, but greater attention to farm problems has resulted in noticeably faster progress in recent years.

An improvement in the standard of living has accompanied the economic advances. At the end of 1967 the real incomes of industrial and construction workers were 6.9 times as high as in 1913, and peasants' real incomes 9.4 times as high.

History has confirmed the viability of Lenin's ideas about building a socialist society. His plan for creating the material and technical basis of socialism and shaping socialist social relations has been made a reality by the Soviet people under the Communist Party's leadership. This does not exhaust the significance of Lenin's theory, however. In working out his plan, he based his reasoning on the Marxist theory of socialism as the first phase of communist society, a phase which through its internal laws of development would grow into the second and higher one.

Continuing the publication of Lenin's selected texts, we offer the first part of his article "On Cooperation," written in January 1923.

ON COOPERATION

BY VLADIMIR I. LENIN

I.

It seems to me that not enough attention is being paid to the cooperative movement in our country. Not everyone understands that now, since the time of the October Revolution and quite apart from NEP (on the contrary, in this connection we must say—because of NEP),[1] our cooperative movement has become one of great significance. There is a lot of fantasy in the dreams of the old cooperators. Often they are ridiculously fantastic. But why are they fantastic? Because people do not understand the fundamental, the rock-bottom significance of the working-class political struggle for the overthrow of the rule of the exploiters. We have overthrown the rule of the exploiters, and much that was fantastic, even romantic, even banal in the dreams of the old cooperators is now becoming unvarnished reality.

Indeed, since political power is in the hands of the working class, since this political power owns all the means of production, the only task, indeed, that remains for us is to organize the population in cooperative societies. With most of the population organized in cooperatives, the socialism which in the past was legitimately treated with ridicule, scorn and contempt by those who were rightly convinced that it was necessary to wage the class struggle, the struggle for political power, etc., will achieve its aim automatically. But not all comrades realize how vastly, how infinitely important it is now to organize the population of Russia in cooperative societies. By adopting NEP we made a concession to the peasant as a trader, to the principle of private trade; it is precisely for this reason (contrary to what some people think) that the cooperative movement is of such immense importance. All we actually need under NEP is to organize the population of Russia in cooperative societies on a sufficiently large scale, for we have now found that degree of combination of private interest, private commercial interest, with state supervision and control of this interest, that degree of subordination to the common interests which was formerly the stumbling block for very many socialists. Indeed, the power of the state over all large-scale means of production, political power in the hands of the proletariat, the alliance of this proletariat with the many millions of small and very small peasants, the assured proletarian leadership of the peasantry,[2] etc.—is this not all that is necessary to build a complete socialist society out of cooperatives, out of cooperatives alone, which we formerly ridiculed as huckstering and which from a certain aspect we have the right to treat as such now, under NEP? Is this not all that is necessary to build a complete socialist society? It is still not the building of socialist society, but it is all that is necessary and sufficient for it.

It is this very circumstance that is underestimated by many of our practical workers. They look down upon our cooperative societies and do not appreciate their exceptional importance, first, from the standpoint of principle (the means of production are owned by the state), and, second, from the standpoint of transition to the new system by means that are the *simplest, easiest and most acceptable to the peasant.*

But this again is of fundamental importance. It is one thing to draw up fantastic plans for building socialism through all sorts of workers' associations, and quite another to learn to build socialism in practice in such a way that *every* small peasant may take part in it. That is the stage we have now reached. And there is no doubt that, having reached it, we are taking too little advantage of it.

We went too far when we introduced NEP, but not because we attached too much importance to the principle of free enterprise and trade—we went too far because we lost sight of the cooperatives, because we now underrate the cooperatives, because we are already beginning to forget the vast importance of the cooperatives from the above two points of view.

I now propose to discuss with the reader what can and must at once be done practically on the basis of this "cooperative" principle. By what means can we, and must we, start at once to develop this "cooperative" principle so that its socialist meaning may be clear to all?

Cooperation must be politically so organized that it will not only generally and always enjoy certain privileges, but that these privileges should be of a purely material nature (a favorable bank rate, etc.). The cooperatives must be granted state loans that are greater, if only by a little, than the loans we grant to private enterprises, even to heavy industry, etc.

A social system emerges only if it has the financial backing of a definite class. There is no need to mention the hundreds of millions of rubles that the birth of "free" capitalism cost. At present we must realize that the social system we must now give more than ordinary assistance to is the cooperative system, and we must actually give that assistance. But it must be assistance in the real sense of the word, *i.e.*, it will not be enough to interpret it to mean assistance for any kind of cooperative trade; by assistance we must mean aid to cooperative trade in which *really large masses of the population actually take part.* It is certainly a correct form of assistance to give a bonus to peasants who take part in cooperative trade; but the whole point is to verify the nature of this participation, to verify the awareness behind it, and to verify its quality. Strictly speaking, when a cooperator goes to a village and opens a cooperative store, the people take no part in this whatever; but at the same time, guided by their own interests, they will hasten to try to take part in it.

There is another aspect to this question. From the point of view of the "civilized" (primarily, literate) European, there is not much left for us to do to induce absolutely everyone to take not a passive, but an active part in cooperative operations. Strictly speaking, there is *"only"* one thing we have left to do and that is to make our people so "civilized" that they understand all the advantages of everybody participating in the work of the cooperatives, and organize this participation. *"Only"* that. There are now no other devices needed to advance to socialism. But to achieve this "only," there must be a veritable revolution—the entire people must go through a period of cultural development. Therefore, our rule must be: as little philosophizing and as few acrobatics as possible. In this respect NEP is an advance, because it is adjustable to the level of the most ordinary peasant and does not demand anything higher of him. But it will take a whole historical epoch to get the entire population into the work of the cooperatives through NEP. At best we can achieve this in one or two decades. Nevertheless, it will be a distinct historical epoch, and without this historical epoch, without universal literacy, without a proper degree of efficiency, without training the population sufficiently to acquire the habit of book reading, and without the material basis for this, without a certain sufficiency to safeguard against, say, bad harvests, famine, etc.—without this we shall not achieve our object. The thing now is to learn to combine the wide revolutionary range of action, the revolutionary enthusiasm which we have displayed, and displayed sufficiently, and crowned with complete success—to learn to combine this with (I am almost inclined to say) the ability to be an efficient and capable trader, which is quite enough to be a good cooperator. By ability to be a trader I mean the ability to be a cultured trader. Let those Russians, or plain peasants, who imagine that since they trade they are good traders, get that well into their heads. This does not follow at all. They do trade in an Asiatic manner, but to be a good trader one must trade in the European manner. They are a whole epoch behind in that.

In conclusion: A number of economic, financial and banking privileges must be granted to the cooperatives—this is the way our socialist state must promote the new principle on which the population must be organized. But this is only the general outline of the task; it does not define and depict in detail the entire content of the practical task, *i.e.*, we must find what form of "bonus" to give for joining the cooperatives (and the terms on which we should give it), the form of bonus by which we shall assist the cooperatives sufficiently, the form of bonus that will produce the civilized cooperator. And given social ownership of the means of production, given the class victory of the proletariat over the bourgeoisie, the system of civilized cooperators is the system of socialism.[3]

January 4, 1923

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[1] NEP is the abbreviation for New Economic Policy, started in Soviet Russia by decision of the Tenth Congress of the Communist Party (March 1921). The main features of the NEP were that the socialist state, while continuing to control the economy (heavy industry, banks, etc.), temporarily admitted private capitalist elements to participation in economic life. The peasants were allowed to sell their surplus products on the market freely. Private enterprise was legalized in trade and also, within limits, in industry. The policy was named "new" in contrast to the policy of war communism, which was practiced in the country during the foreign military intervention and the Civil War (1918-1920) and which excluded the activity of private capital. The NEP ensured a firm alliance between the working class and the peasantry and a rapid rehabilitation of the national economy. Toward the mid-thirties, when socialism became dominant both in industry and in agriculture, the last remaining elements of the NEP left the historical stage.

[2] Russia in that period had over 23 million small and very small individual peasant households.

[3] Lenin's ideas on the cooperation of Russia's peasants provided the basis for resolutions of the Thirteenth Congress of the Communist Party "On Cooperation" and "On Work in the Countryside" (May 1924). "The main line in this question," said the congress, "was mapped out in Lenin's latest work 'On Cooperation.' In this article Lenin put forward a program for developing cooperation among the rural population as the basic method for advancing toward socialism in a peasant country. . . . The present situation in the countryside emphasizes with unprecedented clarity the correctness of the road outlined by Comrade Lenin and calls for primary party attention to be concentrated first of all on cooperation of petty producers, which must play a gigantic role in the construction of socialism." The systematic work of Soviet power in uniting peasants into cooperatives gradually went from the primary forms of cooperation (consumers' cooperatives, credit associations, etc.) to more complex forms (producers' cooperatives) and in the final analysis led to the establishment of collective farms—large collective socialist economies. It was on the basis of collective farms that the Russian peasantry attained socialism.



THE REVOLUTION

By Inna Vishnevskaya
Master of Art



The final scene from Ten Days That Shook the World *at the Taganka Theater.*

AND SOVIET THEATER

FROM ITS VERY OUTSET the Revolution emerged as the hero of the new Soviet theater. The romance of its battles and its mass heroism, its philosophy of man and its remolding force were brought to the stage.

One of the first plays produced by the young Soviet theater was Vladimir Mayakovsky's unrealistic, highly imaginative and symbolic *Mystery-Bouffe*. It was a play that projected the Revolution against the background of the whole universe. Its characters were divided into two groups, representing the forces that oppressed the poor and the forces that overthrew their oppressors and took power. Man, symbolizing the future of the Revolution, was introduced only briefly. In Mayakovsky's play were inherent the elements of future Soviet revolutionary drama —focal themes like the coming to grips of the old and the new world, the universal impact of the Revolution and the Soviet people's burning faith in their future.

In the ensuing years themes of the Revolution were portrayed with greater depth—

A scene from Armored Train 14-69 *at the* Moscow Art *Theater. Many esthetic principles originated at this theater.*



In Mayakovsky's Mystery-Bouffe *the poor confronted those who "trample the heart poetic in dirty galoshes."*



they were reflected both in the fate of men and in concrete events. Plays dedicated to the tenth anniversary of the Revolution centered on complex characters and their crucial experiences, showing that they had arrived at an acceptance of the new world through loss, sacrifice and tragedy, through identification of the individual with the common and national destiny.

During that period plays appeared that made Soviet theater history: Konstantin Trenyov's *Lyubov Yarovaya,* Boris Lavrenyov's *Breakup,* Vladimir Bil-Belotserkovsky's *The Storm* and Vsevolod Ivanov's *Armored Train 14-69*. They brought new conflicts and a new type of hero to the stage—the revolutionary sailor Shvandia, the partisan leader Vershinin, the party functionary Peklevanov, the intellectual Bersenev and the schoolteacher Lyubov Yarovaya. These characters with their romantic, reckless air and their austerities were not revolutionaries addicted only to slogan and action, men and women who leave thought to future generations. They were politically mature persons with

Ivanov's Armored Train 14-69 *contrasted partisans who identified with the new state and the White Guards they fought.*



the powerful intellect that lay at the source of the revolutionary movement and revolutionary literature.

Trenyov's play, written in 1926, had as its central character the teacher Lyubov Yarovaya who, by embracing the cause of the Revolution, lost her dearly loved husband, a lieutenant in the White Guard army. They found themselves on opposite sides, she a supporter of the Revolution and he seeing it as a calamity for Russia. Revealing the clash between the personal and the common interest, between love and citizenship, this play helped to usher in the new genre of revolutionary tragedy.

A notable feature of Lavrenyov's play *Breakup* (1927) was its stress on the polarization of men's minds, the parting of ways for those most intimate. Captain Bersenev, the central character, an officer in the czarist navy and a nobleman by birth, sided with the Revolution because he found in its supporters and their ideals a superior morality, far more honorable than that of the Russian nobility and the czarist military.

Bil-Belotserkovsky's *The Storm* (1925), as its title indicates, brought to the stage the turmoil and turbulence of the Revolution, the fiery battles which tempered people hard as steel but left their emotions fragile and vulnerable. The hero of the play, chairman of a revolutionary committee, was burdened with a hundred cares. He waged a war against typhus, fought against plotters, suppressed kulak revolts, and procured bread for the hungry, firewood for unheated homes, medicines for the sick. His mother, father and friends were killed. The woman he loved was in daily peril of her life. But nothing could break this compassionate man of iron. The Revolution fostered courage and greater sensibility; her sons knew suffering but they rejected weakness.

In his play with the arresting title of *The Optimistic Tragedy* (1932) Vsevolod Vishnevsky presented the Revolution in symbolic and monumental characters whose lives turned into history and legend right before the eyes of the playgoer. Two sailors in uniform appeared as commentators and addressed the audience directly.

The main character was a woman commissar, a member of the Communist Party, sent to a marine regiment to educate and rally the sailors; many of them, confused about the Revolution, had fallen under anarchist influence. Two forces clashed—the anarchist ringleader and the commissar, an envoy of the party. Dramatic intensity was heightened because the commissar was a woman, small, frail but brave, who managed to cope with the men and win them to her side. The play ended on a tragic note: in the last and decisive battle many of the sailors, and the commissar herself, were killed. The word "optimistic" in the title reflected a Leninist viewpoint: The revolutionary leader dies fighting for a better life for the people.

The impact of Lenin on the history of our drama originated even before the plays by Pogodin, Kornelchuk and Trenyov which portrayed him on the stage. It goes back to the time when Vaska Okorok, the Siberian partisan fighter in *Armored Train 14-69* (1922), tried to make contact with an American soldier by repeating the word "Lenin," to the time when the sailor Godun in Lavrenyov's play described his meetings with Lenin at Smolny. But the best of the many plays in which Lenin is depicted are those comprising Nikolai Pogodin's trilogy: *Man with the Gun* (1937), *Kremlin Chimes* (1941) and *The Third Pathétique* (1958).

In the first of the three Lenin is shown in the heart of the rebellious people, the leader of the Socialist Revolution. The theme of the second is Lenin and the building of Soviet Russia, Lenin and the intelligentsia searching for the right historical paths. The last play, *The Third Pathétique,* portrays Lenin the thinker. This epic trilogy reveals revolutionary man being shaped, the new man with his zeal, humanism and readiness to fight for the people's happiness.

Born of the Revolution and dedicated to it, these plays followed a new pattern: the tumult of mass meetings, passionate debate, party congresses and conferences, all alive with the gratification that comes from joint decision-making and the sharing of responsibilities.

Revolution is a broad theme. It brought the acuteness of the class struggle to the stage; it also inspired plays devoted to the people's peaceful efforts and dramas of the new human character formed by new conditions of labor—because the great force of revolution abides in construction and not destruction. Noteworthy was Pogodin's play *Poem of the Ax,* which in the early thirties projected a different kind of human being and human relationships.

New conflicts claimed the dramatist's attention. Another of Pogodin's plays, *My Friend* (1932), illustrates how they were dramatized. A factory director breaks the law—not for his own ends as would have been the case before the Revolution—but for the common interest. The whole dramatic situation is reversed. A man breaks the law for reasons of public necessity, not personal gain. And the moral? There are laws and moral standards that require revision since they must be broken for the public weal. A drama of this kind becomes a powerful weapon in the fight for a new world.

Our dramaturgy has been preoccupied above all with the complex presentation—esthetically and psychologically—of the revolutionary character. Therefore with each year the hero of revolutionary drama grows more complicated. Soviet theater has traveled a long way from Man as he appeared in Mayakovsky's play and in the propaganda pageants of the streets to the hero of our day, holding dialogue with all of humanity. This road reflects the progress of Soviet literature, committed to reflecting the gains of the Revolution in their true depth. The emphasis today is on the moral values that emerged with the new era; the romance of past battles is giving way to psychological probing of human character.

Today both the playwright and producer are less concerned with portraying merely social and political events, or tragedies like those in *Lyubov Yarovaya.* They are less concerned with plot, with issues that were solved in the course of time. Now they focus on the human personality asserting its supreme worth in history.

Drawing inspiration from the Revolution of 1917, and from other revolutionary situations in the country's past, our playwrights recently presented three dramas which aroused strong public interest. Leonid Zorin's *Decembrists,* Alexander Svobodin's *Narodovoltsi* and Mikhail Shatrov's *Bolsheviks** were produced by the Sovremennik (Contemporary) Theater in Moscow. Based on documentary material, these plays are a tribute to the triumph of the human spirit and man's aspirations. The playwrights reveal remarkable historical and psychological insight; the dramatic intensity of their plays rests on the contrast between the death of a revolutionary and the immortality of his ideals. They reveal, too, the roots of the new esthetics: the optimistic tragedy inherent in the Decembrist and Narodnik movements.

The Revolution is a theme which can never be exhausted. In every period it can be viewed in a new and deeper historical, social, psychological or moral light. Today any complete analysis of these stirring events of half a century ago must stress their human and humane aspect. In the days of the Revolution, it must be remembered, the masses of Russia won more than the right to create the material wealth of which they would be masters. They won the right to guide their own and their country's destinies. The revolutionary character to us is therefore not an abstract historical or esthetic category but the character of man the maker, man who made the Revolution and has been shaped by it. To him our revolutionary drama is dedicated. He is its true hero.

* See the article by Lev Anninsky in the July issue.

FOR VALOR, HEROISM, FORTITUDE

Continued from page 16

Zaletov, now retired on pension, who was decorated three times for valorous action in the fighting near Leningrad.

When designing the Order of Glory, artist Nikolai Moskalyov spent a long time choosing a combination of colors for the ribbon and finally borowed them from the prerevolutionary St. George Cross. The orange and black ribbon thus symbolized the Russian fighting man's tradition of courage.

Whereas the Order of Glory was the highest reward for valor bestowed on men in the ranks, the Order of Victory was the highest decoration for generalship. It was awarded only a few times, as a rule to generals in command of a front. The Order of Victory, made of platinum and diamonds weighing a total of 16 carats, was first presented on May 31, 1944, to Marshal of the Soviet Union Georgi Zhukov for the liberation of Kiev and the defeat of large German army groups in the Ukraine. After the surrender of nazi Germany, the Order of Victory was conferred on Allied comanders General Dwight D. Eisenhower and Field Marshal Sir Bernard Law Montgomery.

Georgi Zhukov was also the first holder of the Order of Suvorov, First Class, instituted in the summer of 1942, at the same time as the Order of Kutuzov and the Order of Alexander Nevsky. Named after outstanding Russian army leaders, these three orders were conferred on commanders who worthily carried on the traditions of their forebears. During the war about 7,000 officers and generals were honored with the Order of Suvorov, and approximately the same number with the Order of Kutuzov. About 42,000 became holders of the Order of Alexander Nevsky, conferred on junior officers as well. In memory of Prince Alexander Nevsky, who used to lead his men into battle, this order was given as a reward for personal bravery as well as skillful leadership.

In 1944 the government instituted orders for mothers of large families as a token of the state's esteem for motherhood. The highest award of this kind is the Order of Mother Heroine, in the form of a gold star against a background of silver rays. It is conferred on women who have given birth to and reared 10 children. It is now held by 95,000 women. Mothers of seven, eight or nine children are decorated with the Order of Motherhood Glory, Third, Second or First Class, respectively.

Two years ago the Order of the October Revolution was instituted. It was first conferred on the city of Leningrad, cradle of the revolutionary movement in Russia, the city where Soviet power was proclaimed in 1917.

* * *

This acount has not touched at all on the numerous war medals among whose recipients were virtually all Soviet citizens who survived the Second World War. The general honored with military orders, the serviceman decorated with the Victory over Germany Medal, the factory worker whose selfless efforts on the home front were marked by the Medal for Valorous Work in the Great Patriotic War—each made his contribution to their common cause.

NEW ALKALOIDS

In a study of 59 Central Asian plant species, scientists of Uzbekistan have found them to contain 73 alkaloids, 14 of them hitherto unknown to science. Many of the new alkaloids have valuable curative properties. One of the drugs made from them is effective in treating neuritis, polyneuritis, plexal inflammation and radiculitis. Ten new drugs have been introduced in recent years, and 21 are underdoing clinical tests.

Uzbek specialists are exploring the possibility of using alkaloids to speed ripening of crops, make plants more resistant to disease, and defoliate cotton plants before the picking machines are put to work.

MODEL SHIP LABORATORY

For many years now the Navy Club in Moscow has been maintaining a model-shipbuilding laboratory. The laboratory trains instructors of ship modeling and prepares drawings and building instructions which are sent to Pioneer Houses and Young Technician Stations all over the country.



JEWELRY SCHOOL

More than 200 items of silver, gold and copper—cups, tea and coffee sets, costume jewelry, among others—are made at the Krasnoselsky Jewelry Factory not far from the town of Kostroma, Central Russia.

In a school of artistic metalworking next to the factory young men and women from towns and villages in the area spend four years learning the art of their fathers and grandfathers. What used to be passed on only to members of the family is now taught to all who want to learn. After graduating from the school, the trainees go to work at the factory. Many of the items made at the factory have been exhibited at the fairs in Brussels, Montreal and Leipzig.

AIR CUSHION TORTOISE

Air cushion vehicles that speed across water, snow or land are hard to control at slow speeds, for example, when parking. Students of the Kharkov Aviation Institute have developed one that can travel at a speed of 10 miles an hour and also hover motionless over one spot. The machine is expected to help solve the problems involved in making air cushion vehicles stable at low speeds.



COAGULATION RATE

An automatic device designed and built by Lithuanian engineers makes faster and more accurate tests of the blood's coagulation rate than conventional laboratory equipment.

A blood sample is poured into a vessel into which a cylinder is lowered. A special device shakes the vessel continuously, and the oscillations are transferred through the blood to the cylinder. The blood gradually begins to coagulate. As it grows thicker, it conducts the oscillations better. Connected with the cylinder is a small flag which bars the way to a directed beam of light. The stream of light that the flag lets through depends on the number of oscillations of the cylinder, and that, in turn, depends on the viscosity of the blood. After passing through the flag, the light falls on a photoelectric cell controlling the pen of a self-recording device that registers the coagulation process on paper.



DIAMONDS FOR BUILDING

Hundreds of neatly packaged bottles of diamond powder with labels indicating 500, 1,000 and as much as 5,000 carats are produced daily by a factory in Yerevan, the capital of Armenia. One of the Soviet Union's first plants for the commercial synthesis of diamonds, it has apparatus in which the pressure exceeds 60,000 atmospheres and the temperature reaches 1,800 degrees Centigrade. One of the uses of the synthetic diamonds made here is in new machines for cutting the famous Armenian tufa, from which most of the buildings in Yerevan are made.

SCHOOLBOYS' SPACECRAFT

Modern spacecraft soared high into the air in Moscow Region recently during a competition among 30 local school teams. Held at what is called the Moscow Baikonur (Baikonur, in Kazakhstan, is the Soviet equivalent of Cape Kennedy), the contest featured one-stage, two-stage and three-stage models that were exact copies of the Vostok and Soyuz spaceships.

A working model of the Baikonur site, which was on display during the competition, carried out launchings by remote control.



FLOATING POWER PLANT

The Soviet Union's first floating power station, the 20,000-kilowatt Severnoye Siyaniye (Northern Lights), has been launched. It will sail to the coast of the Chukchi Peninsula, where it will supply energy, light and heat to the gold fields there. Building and operating a floating station is considered more practical than building conventional power plants under the difficult conditions obtaining inside the Arctic Circle.



TOMORROW'S SHIPS

A model of a hydrofoil nuclear-powered ocean-going cargo and passenger ship is on display at the Exhibition of Economic Achievements in Moscow. Its scale is 1:200 and it was built by trainees of a trade school in the Crimean town of Kerch.

EXPERIMENTAL HOUSING PROJECT

The blueprint for a residential district on the site of the Moscow suburban village of Troparevo is based upon entries of an international urban housing contest in which Soviet and foreign architects participated. Occupying 536 acres, the experimental project, on which construction has been started, will have houses of 9, 14, 24 and 27 stories for 50,000 inhabitants. Lower public buildings will help vary the skyline. The center of the district, set apart for children's facilities, includes a school for 3,300, with a building for each of three age groups. The one for the youngest children will have a large playground, while the building for the senior classes will rival an institute in equipment.

ATOMIC REACTOR IN ARCTIC

An atomic reactor for the activation analysis of ore samples is being installed at the big mining and smelting works in Norilsk, situated on the sixty-ninth parallel, on the Taimyr Peninsula. A sample to be analyzed will be put into the reactor channel and bombarded with neutrons. When it has become radioactive, its radiation will be registered by instruments which present the information in the form of a code that will be deciphered by experts. Neutron activation analysis provides findings in 30 to 40 hours instead of the month required by chemical analysis, and cuts analysis costs by 66 per cent. The reactor will be housed at a depth of about 20 feet and shielded by iron plating one and one-half feet thick.

AIR AS JET FUEL

Altitudes of 60 to 250 miles are still practically unattainable to modern aircraft. In their day, however, Konstantin Tsiolkovsky and Friedrich Tsander projected the idea of utilizing the upper layers of the atmosphere for guided flight at high speeds. They believed that the air of the ionosphere could serve as a fuel for the jet engines of giant passenger liners of the future.

The prospects of guided flight at altitudes of 60 to 250 miles were studied in the Soviet Union with the help of the Yantar 1 flying laboratory, launched in October 1966. Analysis of the telemetric data showed that the program device switched on the gas plasma-ion engine at a height of about 100 miles. With this engine functioning a jetstream with a velocity of 25 miles per second was attained, as compared with the three miles per second maximum velocity of jet engines burning chemical fuel.

In the plasma-ion engine installed in the Yantar 1 laboratory the jetstream can be made by the ionization of any gas or mixture of gases present in the ionosphere. Next the ions are accelerated in the engine with the aid of powerful electrical fields and ejected into the nozzle.

Plasma engines were first used in the Soviet Zond 2 space probe in 1964 for guidance during orientation of the probe.

The experimental testing of the gas plasma jet engine by the Yantar 1 laboratory provides a foundation for the practical use of such engines in guided flight in the upper layers of the atmosphere.



AIRLINER CHRISTENED *MOSCOW*

KLM, the Dutch airline, has christened one of its planes Moscow in a series named after major cities of Europe. The christening ceremony, at Moscow's Sheremetyevo Airport, was attended by Netherlands and Soviet officials and the vice president of KLM.

PORTRAIT RECONSTRUCTED

After several years of painstaking research Tatyana Linevskaya, a young sculptor employed at the Leningrad Porcelain Works, has reconstructed a portrait of Dmitri Vinogradov, eighteenth century father of Russian porcelain and a friend of the famous scientist Mikhail Lomonosov.

Tatyana conceived the idea of her project after reading a monograph about Vinogradov. Both he and Lomonosov had been students for a time in the German town of Freiburg. A document issued by a Freiburg mining academy yielded a description of the Russian students. To this she added the imprint which Vinogradov's qualities as a tireless experimenter, bold engineer and industrious scholar undoubtedly must have made on his appearance. After several trial efforts she recently produced a final version of a bas-relief of Dmitri Vinogradov.



STORM SIGNALS

The inhabitants of the port town of Nevelsk, on Sakhalin Island in the Soviet Far East, do not use barometers. When they see seals relaxing on the port's concrete breakwater, they know there is good weather ahead, and when the seals disappear, they get ready for a storm. The Nevelsk town council has passed a law protecting this somewhat unusual natural gathering place.

PALLADA MODEL

A working model of the Russian frigate *Pallada*, which sailed around the world in the middle of the last century, has been made by Nikolai Kondyrev, instructor at a nautical school in Vladivostok. The *Pallada* became famous because the well-known Russian writer Ivan Goncharov was on board for this voyage, which he described in his book *The Frigate Pallada*. There are more than 1,000 parts in Kondyrev's model.

RICH PLUMAGE

Male birds of the ruff species that inhabit the Polesye swamps of Byelorussia are making a strong bid for first prize for beauty and variety of plumage. The local history museum in the Byelorussian town of Pinsk boasts a collection of 44 ruffs, among which no two are alike in plumage, but ornithologists believe still more varieties can be found.

HOT LINE—FOR OIL

Underground lakes of hot water rich in mineral substances have been discovered by Kazakhstan hydrogeologists on the Mangyshlak Peninsula, on the eastern shore of the Caspian Sea, a major oil- and gas-producing area. This hot water does not have to be pumped out—it just gushes up through boreholes. Experts plan to use it for commercial and domestic needs and, at the same time, extract the valuable chemicals it contains.

A particularly promising project is that of using the thermal waters to heat the 930-mile oil pipeline now being laid from Mangyshlak to Kuibyshev on the Volga. When completed, it will be the country's longest hot pipeline, delivering a steady supply of thick, heavily paraffined Mangyshlak petroleum to the central industrial areas.



WATER OZONATION

Before water gets to the Muscovite's kitchen tap it goes through a complicated and thorough purification process. The limestone, charcoal and chlorine filters used flavor the water of course. Treating it with ozone improves its taste and makes it cleaner and clearer. Ozonation devices now being designed at a Moscow institute will impart the qualities of spring water and substantially lower purification costs. In 1972 an ozonation system is to be installed at one of Moscow's water supply stations, which delivers more than 265 million gallons of water daily, a quarter of the amount consumed by the city. Preparatory work for ozone purification is now under way in Leningrad, Kiev and Gorky.

SAMOVARS ON SHOW

Samovars were used in old Russia for a variety of purposes besides teamaking. There were samovars for brewing coffee and *sbeeten* (a once popular drink made of hot water and honey), and samovars with sections designed for cooking various dishes. More than 50 of the most typical models of samovars, the earliest of which is more than 200 years old, are on display at an exhibition in a branch of the State Museum of History in Moscow.



LAMPS RIVAL SUN

During the long polar night inhabitants of towns in the Soviet Far North can now get the health-giving rays of the sun from an installation which combines fluorescent tubes and incandescent bulbs to produce light beams with a spectral composition close to the sun's (2 per cent ultraviolet, 29 per cent visible and 69 per cent infrared rays). Now in serial production, the installation, named Zagar-1, was designed by the USSR Research Institute of Medical Instruments and is used at medical establishments and industrial enterprises to give sun lamp treatment to groups of from six to eight persons at a time.



75-TON DUMP TRUCK

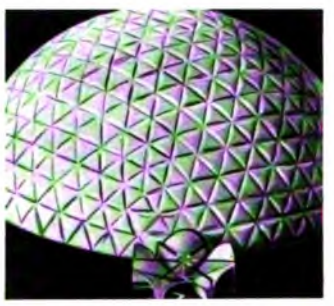
The new BELAZ-549 dump truck, made in Byelorussia, is as tall as a two-story house, can carry a load of up to 83 tons, and weighs 136 tons when fully loaded. Its 850-horsepower engine is the most powerful produced by the Soviet automotive industry. With power steering and a turning radius of 30 feet, the BELAZ-549 is highly maneuverable. The roomy soundproof and heatproof cab provides comfort for the driver in noisy, dusty open-cast mines and quarries.



MIGRATORY HARES

An intensive migration of hares in the direction of the Pacific Ocean was observed this year by air pilots, fishermen and hunters on the Kamchatka Peninsula, in the Pacific. In the wake of the hares came eagles and foxes, which feed on them.

The explanation given by experts is that the hares were suffering from a mineral hunger that the seaweeds along the coast could relieve.



ARCHITECTURAL BIONOMICS

The dams and lodges built by beavers, the anthills erected by termites, wasps' nests and spider webs are now coming in for close attention by architects, who believe that a study and use of the laws of form in nature can contribute to progress in architecture. This has given rise to the new field of architectural bionomics.

Work to design large, lightweight, economical architectural systems is under way at the Moscow Institute of Architecture. Workers here have produced the design and model of a warehouse in the shape of a ribbed shell turned upside down, calculated for the storage of a million tons of ore concentrate at a metal works.

The principles of the structure of the light and durable shells of animals have been applied in buildings spanning large areas. Shells no more than an inch thick cover areas of 2,150 square feet in roofed markets and sports stadiums.

AIRCRAFT VS. MIDGES

Scientists of the Moscow Institute of Parasitology and Tropical Medicine are continuing their investigations, jointly with airmen from the southern Russian town of Krasnodar, for developing more effective methods of aerial spraying to control gnats, horseflies and midges. They are conducting the work in Yakutia, where these insects cause much damage to livestock and are a nuisance to men who work outdoors. The three main approaches in aerial control of the pests are: destruction of the larvae, destruction of the adult insects, and the creation of protective barriers around towns and smaller communities.

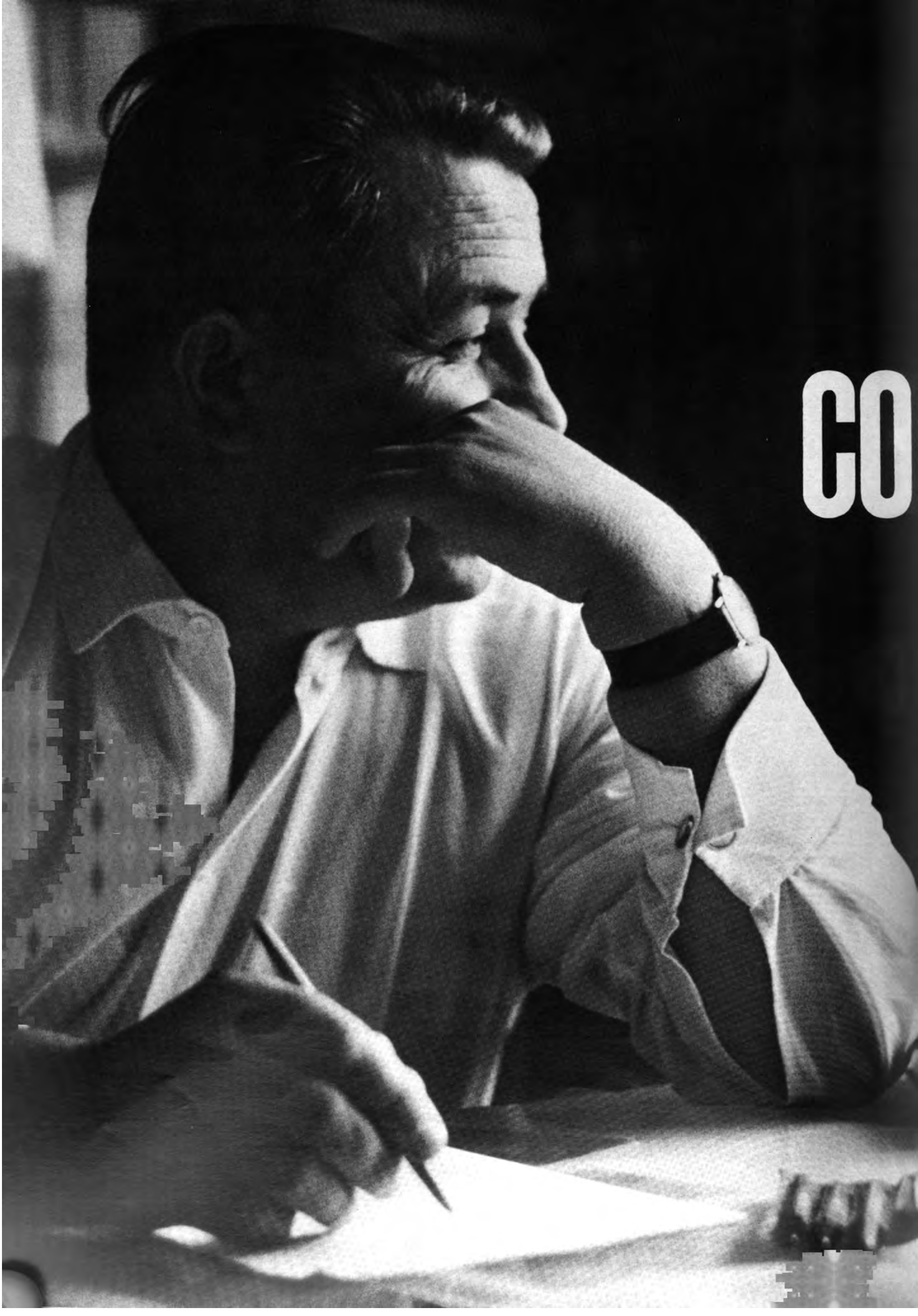
Yakutia is a sparsely populated region, most of which cannot be negotiated by land vehicles in spring and summer, when anti-pest measures have to be carried out. If aircraft were not used, the cost of pest control would be enormous. The situation is much the same in other parts of the Soviet North, as well as in the northern areas of America and Western Europe. The use of aircraft for spraying chemicals has therefore acquired considerable international significance, especially in recent years.

The effectiveness of new liquid and granulated pesticides has been studied this year. Scientists hope that new types of granulated pest killers will make it possible to reduce the amount used to less than a pound per acre. Apart from the economy, this is important in assuring greater selectivity of use. (The importance of the latter has been underscored by new findings on the residual action of pest killers.) Moreover, the new pesticides are highly stable, so that an area has to be treated only once in three years. Expedition members have also tested aircraft and obtained data essential in the designing of new apparatus and devices.

PUMPS VS. PREDATORY PIKE

Fish hatchery workers in Karelia (in the northwestern section of the European part of the country) pumped all the water out of a lake with an area of a square mile and then easily caught all the predatory pike in it. They did this because the lake is an ideal place for acclimatizing the Siberian *sig* (a fish of the salmon family), but the pike were a threat to the young newcomers.

When the thaw and the springs that feed the lake brought the water to the normal level, the hatchery workers stocked it with 45,000 eggs of the Siberian fish.


CO



Grigori Sklyarov is chairman of the Semiluki Collective Farm, which he has turned into a going enterprise grossing three million rubles a year.



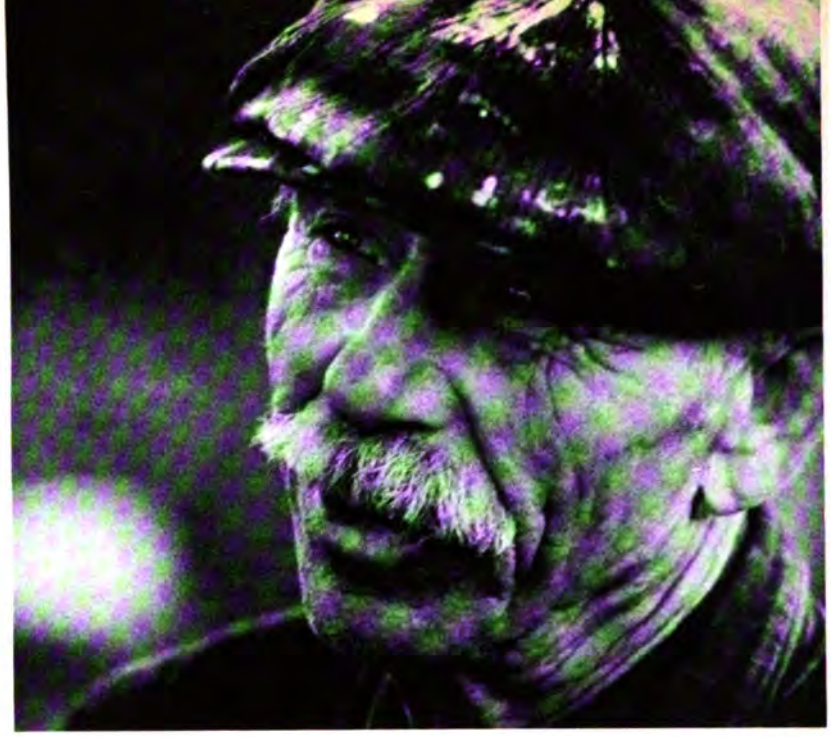
LECTIVE FARM CHAIRMAN

Careful planning: A better income for the farmers

BY ROBERT TSFASMAN

Photographs by Alexander Lobov





The village is on the Don, in the fertile Central Black Earth Area.

Machine operator Anatoli Strygin (far left) thinks Sklyarov is often stubborn. Stepan Dronov (left) says his tenacity has helped the farm.







Nikolai Bezryadin (far left) says the chairman is a fine fellow, "but what a temper!" Mikhail Kuzmichov (left) praises him for being concerned about the building program.





Economist Maria Fomina (above) finds Sklyarov's main virtue in his willingness to listen to the opinions of others before making a final decision.

Pensioner Maria Kapustina (top left) likes Sklyarov because he is simple and unpretentious.



Physics teacher Alexei Ovchinnikov (left) appreciates how much the chairman has helped the school.

Yegor Strygin (bottom left) used to be chairman of the neighboring farm, now merged with Semiluki. The two men have gotten to be good friends.

The Chairman: What people think of him





The crop must be brought in before the rainy season starts. Every machine is out in the field, and the drivers don't have to be persuaded to work around the clock. The farmers know how precious every minute is this time of the year.

THE CHAIRMAN is an early riser, up in summer when the mists over the Don have not yet lifted, and in winter when behind the frost-patterned windows it is still night.

Quietly, trying not to wake his wife and son, he tiptoes to the kitchen and puts the teakettle on. A quarter of an hour later he can be seen hurrying to the offices of the collective farm board. Arriving much before anyone else, he gets a chance to ponder undisturbed over the jottings in his bulky pad. He occupies a roomy office with a massive desk, a television set and chairs around the walls. In one corner stands a proud Red Banner, a government decoration awarded the kolkhoz, and in the other a cupboard bursting with rolls of blueprints. The blueprints explain the farm's building program—a big cultural and sports center with a 700-seat stadium and swimming pool, a children's compound with nursery, kindergarten and summer camp, and new repair shops. Construction of the children's buildings and the repair shops is already under way. The funds are available, the kolkhoz's annual income being three million rubles, one and a quarter million of it clear profit.

These figures are also insurance against the surprises that nature springs in this far-flung collective farmland around Voronezh. Each season plays its own tricks. A winter without much snowfall and the seedlings die of frost. No snow clouds and a cold glistening sky and spring is likely to be late. When it does come at last, the thawing Don floods and takes everything with it. A sudden spell of cold in May kills the fruit promised by the foamy luxuriance of the orchards. Summer droughts are another scourge, burning up the wheat and wilting the tomato plants. Long autumn rains play havoc with harvesting and slow down transport. Because of bad weather last autumn, the farm lost 400,000 rubles of its vegetable crop.

A good thing the kolkhoz stands on its own feet and has funds for taking care of any contingency.

And Semiluki kolkhoz chairman Grigori Sklyarov is a stubborn man who speaks up for himself and his people. Back in the days of stringent centralized plannning, he defied directives from above and earned himself no less than 10 party reprimands. The reprimands have since been canceled, and Grigori Sklyarov has been decorated with the Order of Lenin.

In the past few years much has changed for the better in the collective farm system. The farms have more independence in planning and selling their produce; the state granted them more privileges and increased farm appropriations. The chairman now has more freedom of movement and gets more government assistance.

People set in their ways find Sklyarov trying. One day he changes the whole pay system and instead of giving the farmers a monthly advance on the year's total receipts the way other collective farms do, he pays them a set wage in money according to their labor. Any surplus due them they get in kind at the end of the year, all of which is very risky procedure in the event of a bad harvest. The next day he plays fast and loose with plans for sowing, or puts off building the local clubhouse. "You can't have a good collective farm without club activities," he is warned. His reply: "I'm not allocating funds for clubhouses until we've improved our working conditions!" But the chairman conceded when the general meeting voted to build the club "largely to meet the cultural needs of the young people."

* * *

Doggedly the chairman sticks to his own line of thinking. He knows that even with the most advanced machinery and scientific methods the attitude of the individual farmer is the decisive factor. The farmland of Voronezh Region is in the Central Black Earth Area of Russia. It is fertile and from times long past densely populated. Get the farmer interested, help him, and he will put his heart into working the land. But if he has no faith in the management, the same land will yield a harvest of weeds.

This is what happened before Sklyarov took over. In Semiluki today 2,600 pounds of winter wheat is harvested from an acre of land compared with no more than 1,100 pounds in 1962. The farm had a woman chairman then. She was hardheaded but didn't have enough staying and organizing power. Actually the farm was going to ruin, and realizing this, the party district committee looked around for a new chairman to recommend to the collective. Grigori Sklyarov, chairman of another farm at the time, was well thought of. He was 39 then, in 1962, with a reputation as an efficient organizer and years of experience as a Young Communist League leader and a municipal executive behind him. Moreover, he had a college degree, he was a graduate of the agronomy department of the Voronezh Agricultural Institute. If the



Harvesting: Hard days and hard nights

It's an exhausting job. Sklyarov could get an assistant to do part of the work, but he has to see for himself that all is going well.

The chairman's knowledge, experience and intuition tell him exactly the right time for gathering the drying haycocks.





farm membership agreed, he was the best man for the job.

On arriving at Semiluki, Grigori Sklyarov took stock. He could see that the farm was going from bad to worse. Working on the collective land didn't bring the farmers much, so they put their best efforts into their own plots and sold their vegetables and other produce at the city market in Voronezh, only 11 miles away. The kolkhoz property was neglected.

The farm membership elected Grigori chairman, but it took some time before he won their confidence. He made it clear that he would not put up with negligence in any form and insisted that the membership take a firm stand against idlers and grabbers, expel them if necessary. The farm board recommended and the meeting voted the immediate introduction of a stable wage for all farm workers. Extras in kind—grain, meat, vegetables —were to be distributed at the end of the year.

Sklyarov had several ideas he thought would bring in more income: One was to cut down the grain area and plant more vegetables, which in a farm so close to the city brought in good profit; another was to keep only pedigreed livestock; a third, to go in for large-scale duck raising, and so on. But first he had to show the farmers that they could make a decent living. Paying a regular monthly wage meant, of course, borrowing more money from the state. But he hoped that in time the farm would pay off the loans.

And it did pay them off. The very next year, in 1963, the farm turned the corner; it made a profit. Individual earnings were still low, 2 rubles 60 kopecks a day on the average. They have gone up to 4 rubles 20 kopecks since. In the years between, all available funds were invested in expanding production. The farm was getting on its feet, and the farmers were taking heart again.

Harebrained schemes have no attraction for the chairman. He likes to see everything down in facts and figures. Skeptics of some new idea of his usually do not know that it is based on the most careful figuring. Figures are a weakness of Sklyarov's and he could happily spend all day over them. But his many responsibilities leave only the early morning hours, before visitors come pouring into the offices of the board, for him to sit quietly and turn ideas over in his mind.

* * *

Having done a little figuring, the chairman shoves his pad back into the drawer of his desk and sits for a while, his round hawkish eyes staring into the distance. He takes out the pad again, makes a few notes, and then gives his attention to the heap of mail, mostly letters from chairmen of other farms. Grigori made several television appearances and now has many correspondents with whom to trade farm experience. There are also letters with foreign stamps. One, for example, is from horticulturists in Holland wanting to know if their variety of tulip is doing well in Russia. The collective farm's hothouse flowers bring in 30,000 rubles of profit a year. The farm imports a rare variety of tulip bulb from the Netherlands.

After the mail the chairman skims through the newspapers. He makes it a point to keep abreast of world and domestic events and to see his farm as part of the national effort. If he runs it better than neighboring farms, he can demonstrate in practice the advantages of modern methods over the old outdated ways.

Visitors begin pouring in. An elderly woman working on the farm wants the chairman to approve her application for a loan. The farm grants loans without interest. She needs it for a new cottage. The chairman signs and says: "All right, go to the bookkeeping office. A thousand rubles should be enough."

A tractor driver drops in for a health sanatorium voucher. Semiluki farmers get their accommodations at health and vacation resorts free. The collective farm budgets 12,000 rubles a year for the purpose. Part of this sum also pays for free drugs available at the local medical center.

The next caller is there for a job interview, one of the local people who moved to town quite a while ago and wants to resettle in the village. Five rather big villages make up the Semiluki kolkhoz. Some of the inhabitants, however, are not farmers but work at silicate plants close to



The gym in one of Semiluki's three high schools. The collective farm allocates a large sum of money for sports facilities and equipment. Right now the schools are looking for some good coaches.

There are three orchestras for young people. They perform at school parties, the club and out in the fields during harvesting. They've also done rather well in district band contests.

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When the crop is finally in, the whole village gets together at the Harvest Festival. Even the chairman joins in the fun.

One of the main attractions is an amateur concert. There are many held during the year. The farm rents a hall or theater in Voronezh for some.

the villages. A few commute to jobs in Voronezh. So that there is some choice between farm and city jobs.

"Once they couldn't get away from the farm fast enough," said Grigori Sklyarov. "Things are different now. The farm membership is stable. The 1,300 working farmers we presently have meet our needs, considering that the farm does best when the production output increases and the number of workhands decreases. What we do deplore," he went on, "is that young people would rather live and work in town. Mostly it's the influence of parents who still think of farm labor in terms of the old days and want an easier life for their children or hope they'll get ahead faster in the city.

"I'd like our young people to think of the kolkhoz, with its 65 tractors, 15 grain harvesters and 60 trucks, as a modern, go-ahead enterprise. And yet we are short of both machinery and people trained in mechanical trades, which means we need our young people. Ours is a big farm. The sown area alone comes to 12,355 acres.

"Of course, in terms of choosing a profession or leisure-time interests, the city has much more to offer young people. But we are doing our best to create a more urban pattern, providing inducements for young people to stay."

After he has seen his callers, the chairman settles down to the business at hand with his closest lieutenants, all of whom, he claims, are people with good business sense.







Maria Fomina is the farm's chief economist. In her early thirties, she gives a refined and somewhat reserved impression. Like the chairman, she is a graduate of the agronomy department of the Voronezh Agricultural Institute. (Semiluki has 26 college-trained experts, more than the average for farms this size.) Maria takes care of the theoretical end of the farm's economics—the allocation and distribution of farm income, ways of improving the bonus system and the like. In matters like these Maria Fomina is the chairman's right hand.

It should be kept in mind, however, that neither Maria Fomina nor the chairman have the final say. All key planning matters are decided by the board or general membership. Management rests upon understanding and trust.

The kolkhoz's head agriculturist Nikolai Mikhailovsky and chief engineer Anatoli Urusov are young and eager people, Nikolai with a true farmer's shrewdness and Anatoli with a working capacity and grasp he brought back from Kazakhstan, where he worked on the virgin land development program.

But perhaps the most commanding figure in the kolkhoz

management, although he has the look of a listless, barely articulate, good-natured fellow getting on in years, is Georgi Portos. His job is the market—to sell the vegetables or meat at a good price.

* * *

After a confab with his "directorate" the chairman looks out of the window. It's time for his rounds of the farm. And there on the dot, swinging his *gazik* (a jeep type of car suited to the countryside) around jauntily and pulling up in front of the administration building, is chauffeur Ivan, better known by his patronymic Stefanych. He flashes a smile of greeting, his artificial teeth dazzling. Stefanych is the chairman's perpetual companion, driving him across the kolkhoz fields. The farm is about 12 miles across, and Grigori Sklyarov spends a good part of his day driving around.

"Where do we go?" asks the driver. "To the fruit storehouse." The chairman climbs down into a huge underground area, cold and dimly lit. It's empty now because the apples have all been sold, but the heady odor of apples lingers on. Pleased, he explains that the kolkhoz is planning to build its own cannery. "We'll be rich as kings then," he says. "We raise a lot of fruit and vegetables, too. Across the Don on the floodlands we grow tomatoes—almost 1,250 acres of them, and other vegetables. There won't be any losses if we do the canning and processing ourselves."

Off they go to the incubating section. It's as quiet there as in the hospital, with the women operators in their white coveralls leafing through magazines while they wait for the new ducklings to hatch. The year before the kolkhoz sold the state 160,000 ducks at a profit of almost 200,000 rubles. To speed up growth and fattening, these wading fowls are put on "land maintenance." On land they gain weight much faster than in water; in 60 days they are ready for market.

From the incubator the chairman goes on to the dairy farm, examining the stalls carefully to see that they are kept clean and the shower is in good working order.

"As of now we divide our income this way—48 per cent goes to pay the farm members for work done and for welfare items (the upkeep of nurseries, kindergartens, free meals for our machine operators during the busy seasons, excursions, theaters, adding up to 74 rubles a year for every able-bodied person), 18 per cent for taxes (the kolkhoz, like any business—state or cooperative—contributes to the national budget), and the rest for expanding production."

After making the rounds of the farm, Sklyarov goes to see how the construction of the new repair shops is getting along. After bawling out the builders for leaks in the ceiling, he drives home for dinner. If this were harvesttime, he would not be coming home before the small hours of the morning. But even today he is late. He swallows his meal hastily while chatting with his wife. He takes a nap for half an hour. His heart is not too good. He is only 46, but the pressures of work have told on him.

When he gets up, he finds Stefanych outside waiting for him. Off they go to the research center at Voronezh for a consultation on agrochemical and other matters. Sklyarov also squeezes in a visit to his eldest son, bringing him some homemade delicacies. Alexander, who has a job at a criminology research lab and is an evening law student at Voronezh University, hopes to do criminal investigating some day. He is 20 and lives in his parents' two-room city apartment. His father, though tempted with important city jobs, has no intention of leaving the farm.

At dusk the chairman is back at Semiluki, but he can't call it a day yet. The late afternoon or evenings are set aside for a brief conference with team leaders, a board meeting (held no less than once a month) or a party meeting, at which he reports on his activities as a Communist to fellow party members.

It is not until late evening that Sklyarov gets home and has a chance to indulge his hobby of photography with his youngest son Alexei, an eighth-grader.

But people are always dropping in at the Sklyarovs. Grigori, who has the reputation of being "a tight-fisted muzhik" when it comes to the farm, at home is an openhearted and generous host, ready to treat his guests to whatever the pantry or refrigerator holds—jellied pork, meat stew with potatoes, bacon, pie, pickled tomatoes big as a peasant's fist, home-brewed liqueur and the best vintage cognac. After he has had a drink or two, Sklyarov grows silent and thoughtful. His wife Alexandra, on the other hand, gets more chatty, wistfully recalling the romantic days of her youth and sadly comparing them with her present uneventful life, spent mostly at the kitchen range and washing machine.

The family album is brought out. It has a picture of the Sklyarovs on their wedding day, March 1, 1945. Both are in army uniform, the bride a sergeant in the sappers and the groom a lieutenant in his regiment's chemical service. Alexandra (or Shura as she is called for short), with the peril of death daily staring her in the face, defused more than a thousand mines in Voronezh (the retreating Germans had mined the city) and countless unexploded shells and bombs.

A pharmacist by profession, Alexandra hopes to work in the drugstore now being built in Semiluki.

* * *

Before going to sleep, Grigori, at his wife's insistence, takes his "constitutional," a walk through the village to get his mind off farm business. The white stone cottages are clearly visible even on the darkest night. They are all very much alike. During the war Semiluki was razed, and when the farmfolk returned, they all followed pretty much the same pattern in rebuilding.

A tall figure looms up out of the dark in front of one of the cottages.

"You're up late, Nikolai, aren't you?" the chairman calls.

Nikolai Kapustin, a truck driver, replies: "The missus is in the hospital, I've got to take care of everything myself."

"A good farmer," mutters the chairman musingly.

The Kapustins own a comfortable cottage with three rooms, a kitchen and a big porch. They have a combination radio and record player, a television set and up-to-date furniture. It cost them about 5,000 rubles to build the cottage—before 1965 they lived with Nikolai's parents—and 600 rubles for the new furniture.

The Kapustins have three sons in school, and the expense of clothes, shoes or items like an accordion for the older boy comes to a neat sum. What is their budget?

Nikolai Kapustin is not very talkative, which makes it hard to draw him out. How much does he make?

"My wages come to about 120 rubles a month and my wife's to 60. She is on a field team and works one month and stays home the next because she is sick a good deal of the time. Expenses are high with five mouths to feed. We have no cow but raise chickens.

"Then there is the land or agricultural tax on our personally owned plot, 26 rubles a year (collective farmers pay no income tax); house insurance, 15 rubles; electricity, 22 rubles; bottled gas, 20 rubles for the year," he tells you. "Not so much for each item, but all together it makes up a tidy sum. Oh, yes, and coal for heating comes to 100 rubles a year."

"Yes, but what about your individual plot—almost three-quarters of an acre of kitchen garden and orchard? You sell some of what you grow at market, don't you?"

"We do. About 400 rubles is what we make extra in the summer," Nikolai concedes.

But Nikolai Kapustin's reckoning is too modest; his plot should bring him about 600 rubles. And his earnings are higher. Here is what his personal account shows for the year: 1,700 rubles—his basic earnings; 163 rubles—a long-service bonus (Nikolai has been in the kolkhoz for more than 11 years now); 290—bonus paid at the end of the year for economies he has made; 60 rubles extra (collective farmers get that in money or kind for overfulfilling their quota).

Added up, it comes to approximately 185 rubles a month.

That's what the figures show and that's why the chairman puts such faith in them.

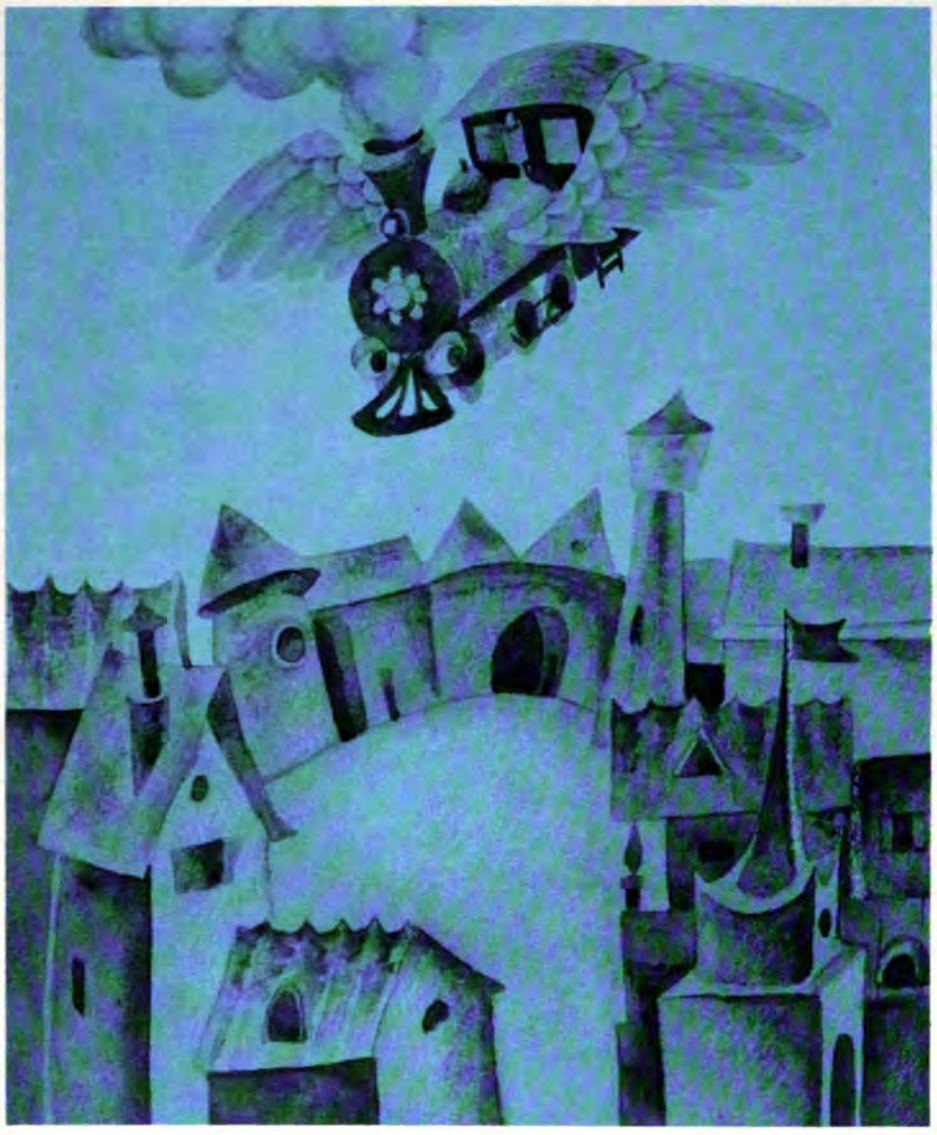


"Machinery is still a big problem," says the chairman. "I'd like to eliminate practically all manual labor."

THE LITTLE RAILWAY ENGINE

By Igor Maznin

ONCE UPON A TIME there was a sad little railway engine. Why was it sad? Because it dreamed of adventure, but all day long it had to puff along the same railroad track pulling a string of cars. "Wouldn't I like to be an automobile," the little engine often thought. "Automobiles are so lucky. They can go wherever they want, along roads and over hills and vales. They can even go into the woods and rest on the bank of the river where the grass is so green and the waves are so blue. But what can I do? Only slow down to sniff the flowers when I go past a garden."



Drawing by Leonid Sergeyev

One morning, when the sad little engine was coming out of the roundhouse, where all the steam engines live, to start on its usual trip, it heard an awful noise. Surprised, the little engine stopped and looked up. High overhead was an airplane. It wasn't merely flying; now it banked on one wing, now on the other, now turned right over, now dropped down, now darted up to the clouds again. The little engine stood and watched in admiration, completely forgetting that it had to go somewhere.

"What are you standing gaping there for?" the stationmaster shouted. "Passengers are waiting for you."

"Let them walk," said the little engine. Then with a sigh it added: "Oh, if I could only drive up into the sky!"

"Are you crazy?" The stationmaster was frightened. "Don't you dare to do that!"

But the little engine didn't listen. It ran a little bit, pushed itself off the rails, hopped up and toppled over. It was lifted up with great difficulty. Its wheels were broken. Nearly all summer, while the wheels were being fixed, the little engine had to stand idle in the roundhouse. It was very sad, thinking all day long about that silvery bird flying through the sky with such graceful ease. It was always free, not like the little engine. Then suddenly one day, the little engine felt wings sprout from its sides. It took off from the ground and flew up in the sky, higher than the trees and the houses. Then it looked down and, laughing, exclaimed:

"How small the town is! And how tiny the railway stations are! And how thin the rails are! Why, I can barely see them!"

The little engine was right near the clouds when it saw some birds staring at it in surprise.

"What are you doing up here?" the birds asked.

"Taking a walk. I'll be doing that all the time now," the little engine said.

"Then come with us," said the birds.

And off they flew. The little engine tried to catch up but couldn't. It was too heavy.

"Not so fast," it begged. "I can't keep up."

The little engine was all out of breath. Thick black smoke came from its stack and slowly spread over the whole sky, which grew darker and darker.

"Hey there, wait a moment!" the little engine suddenly heard someone cry. It looked around and saw the airplane it had seen from the ground.

"Who let you come up into the sky and make so much smoke?" the airplane shouted. "I can't see a thing! Even the clouds are not as dark as your smoke!"

"Please don't be angry at me," the little engine begged. "When I saw you from the ground, you looked so lovely and so happy that I wanted to fly, too."

"What a funny fellow you are," the airplane said with a laugh. "You're too big. Better go back down and puff along your railroad. You can take it from me that it's a good thing to do well what you know how to do. Only better hurry up because the weather is turning bad."

But the little engine had not the slightest intention of going back. "He's just envious," the little engine thought and flew on further. Suddenly there was a clap of thunder, the rain began to patter down and a wind blew up. It buffeted the little engine so cruelly that its wings shook and broke off. The little engine fell down . . . down . . . down. . . . "Well, that's that," it said. "I'm done for." Scared, it shut its eyes. It opened them again to find that it was still in the roundhouse.

Next morning the little engine ran out of the roundhouse and puffed merrily along the railroad track. A little later it spotted the airplane in the sky, tooted a kind good morning and puffed on. "After all," the little engine thought, "I do something an airplane can't do. Can an airplane run along a railroad or pull a string of cars?"





Piece of Wood into Work of Art

By Yuliya Chernyakhovskaya
Art Scholar

THE TERM "Gorodets painting" first appeared in Russian art studies about a century ago. It refers to the work of rural artists in the village of Gorodets who decorated such familiar objects as bast baskets for picking berries and mushrooms, battledores for washing clothes at the riverside, distaffs, sleds and yokes used on holidays and other special occasions, and children's toys. These wares were sold at the weekly Gorodets fair.

Gorodets, a village on the Volga, was founded in 1164 by Prince Georgi of Pskov. It produced many craftsmen and artists, one of whom brought fame to his birthplace. In 1405 Prokhor of Gorodets worked with the famous artists Andrei Rublyov and Feofan Grek to paint the frescoes and icons of the Cathedral of the Annunciation in the Moscow Kremlin.

The people of this village, which was surrounded by endless forest, made wide use of wood. Eighteenth century Gorodets craftsmen were known for the decorative carving they did on their log cabins and for their honeycake molds.



Tea-drinking and battle scenes were the themes of Gavrila Polyakov's distaff paintings in the 1880s.

Left: Detail of a fairy tale theme painted by Vasili Lebedev on a distaff foot brake in the 1920s.

Center: Detail of a distaff foot brake carved in 1866 by Lazar Melnikov, popular Gorodets craftsman.

Most in demand among the items sold at the Gorodets fair were spinning benches, simple spinning devices in the form of a broad flat board to which a card was attached. The spinner sat on the board, fastened a tow of flax or wool to the card, and wound the spun thread on a spool. A spinning bench was not simply a smooth board, it was adorned with pictures of various kinds, usually of two horsemen facing each other on rearing mounts. At first the pictures were made of wood inlays, stained oak ordinarily. The pictures—of horses, birds and men—were somewhat stylized. Such details as the slender, prancing legs of the horses, the curled tails of dogs, and swords, guns or pipes in the hands of the men, were incised with the sharp point of a knife.

Peasant women liked these attractive, elegant spinning benches. When spinning, a woman would sit on the drawings, but she did not consider the bench simply a tool. She generally treasured her spinning bench because it was a gift from her fiancé, a symbol of domestic bliss, and she also prized the drawings. After her day's spinning was done, she would detach the card and hang the bench on the wall of her log cabin next to her embroidered towels and brightly colored cheap prints.

The moment a maker of spinning benches arrived at the fair and spread out his goods, he was surrounded by an eager crowd—some just to look and others to choose and buy. Unable to meet the demand, the craftsmen thought up an ingenious way of turning out more spinning benches. They used dark paints instead of inlay work for some parts of the pictures. While the pictures looked practically the same as before, they could make a spinning bench in much less time. Paint gradually replaced inlay in more and more parts of the picture until, by the second half of the last century, it was all painted. In this way a new trend started in one of the traditional folk arts and crafts.

Painted spinning benches very quickly became universally popular, and craftsmen stopped making benches with inlaid pictures.

Gorodets painting developed a style all its own. The pigments



This basket for mushrooming and berrying was painted by hand in the 1880s.

were dissolved in egg white and the paint applied in broad brush strokes without any preliminary sketching. The colors were rich in tone; the artists were not familiar with halftones. To intensify the tone, they applied several layers of paint.

The subject matter of the Volga folk artists was as distinctive as their technique. For the most part they depicted ladies and gentlemen dressed in the height of urban fashion, scenes of tea drinking and wine drinking, magnificent horses and carriages, large, bright flowers, and the traditional horses and birds. The art of making and decorating spinning benches finally died out. Some forty-odd years ago abundant supplies of factory-made calico began to reach the rural areas, and farm women no longer had to spin their own yarn and weave their own cloth. Craftsmen stopped making spinning benches.

Many of the household articles of the old days decorated by rural artists now have an honored place in museums alongside paintings by masters, ancient manuscripts and icons.

While these articles have disappeared from use, the craftsmanship and artistic taste and experience live on. Today many of the old arts and crafts have taken a new lease on life. Gorodets now has a workshop where craftsmen use the traditional methods to decorate children's furniture, toys, wall panels and souvenirs.



A paddle steamer was hand-painted on a box for storing spindles and flax.

MATHEMATICS AND THE HEART

By *Evnika Svetlanova*
APN Commentator

AILMENTS of the heart and circulatory system are responsible for two deaths out of every five in the more "developed" countries. While heart disease is a major killer of our time, much remains to be learned about its causes and prognosis. Too many people still believe it is the inevitable accompaniment of civilization.

But the patient brought to the hospital with an infarct needs a precise diagnosis—minutes count. The physician is guided by his experience and, if a patient is lucky, by his diagnostic gifts. However, the determinations of even the best specialists depend on a whole variety of factors, including the physician's own health and state of mind.

In the Language of Mathematics

At Lithuania's Vilnius University, in the experimental clinic for hospital therapy, cardiologists are turning more and more to figures for assistance. Professor Liubomiras Laucevičius, director of the clinic and one of the oldest physicians in the republic, has adopted Galileo's famous maxim: "The book of nature is written in mathematical characters."

Recently I visited clinic staff member Ilya Stupelis, Doctor of Science (Medicine), who is a leading researcher in mathematical prognosis. On a number of small cards covered with figures, he traced for me coded accounts of illnesses solved by an electronic computer.

"This index, for instance, envisages death," Dr. Stupelis commented about one short mathematical formula. "That's lucky!" he said, somewhat unexpectedly, and explained: "It's good luck that we know about it beforehand." Thanks to the help given doctors by mathematical prognoses, this unusual sentence appeared in the latest report of the clinic: "Ten per cent of the hopeless cases left the hospital after recovery." They were restored to life. . . .

Dr. Stupelis showed me a ward where the patients receive particular attention, for on their cards an "inevitable" index has appeared. A part of the special ward is the reanimation department. This resembles a physics laboratory, with its many instruments showing wavering impulse arrows. Everything in the ward is ready for the decisive battle for life. And mathematics, that new and clever strategist, tells the doctors how the battle can be won.

Some people say that we should not attach such importance to the electronic computer, that it cannot replace a physician's intuition and talent. Of course it can't! Its job is to assimilate and analyze the enormous number of observations made by the doctor.

The machine not only forms scores of diverse indices but correlates them in different combinations. The data it obtains provides completely new information on the life activity of an organism, telling the physician when and how to intervene. Thus, for instance, Albinas Vidugiris, a young cardiologist, showed me a large file containing his observations of patients expressed in long columns of figures, the result of using an electronic computer. An ordinary doctor could not possibly find his way here. Which is why in the Vilnius clinic, where this symbiosis of mathematics and medicine is emerging, many doctors are taking a course in computer techniques and the ABC of mathematical theory. Incidentally, many interested mathematicians are studying the fundamentals of medicine in order to translate their own mathematical language into medical parameters.

The tasks of mathematical prognosis already exceed the limits of merely therapeutic problems, though modern cardiology's chief purpose is still the treatment of heart diseases. The mathematical method of prognosticating myocardial infarction is designed to estimate the types of patients undergoing treatment—their age and other peculiarities—and to record the changes in types constantly taking place, as well as the reasons for these changes. It is designed to illuminate the mystery of instant death, to check the effectiveness of treatment with new preparations, to determine the conditions and causes of deaths brought on by myocardial infarction at different medical institutions. By comparing doctors' activities, it produces the data necessary for the best therapy.

Electronic Savior

An awareness of the extraordinary possibilities offered by mathematics has long been a feature of both practical and theoretical medicine in Lithuania. It was in this republic, in the Kaunas cardiological center directed by Academician Zigmas Yanuškevičius, that the country's first electric stimulator of the heart was constructed. The tiny apparatus was implanted in a human body close to the heart. The first man equipped with this electronic savior, an old fisherman from Kaunas, underwent another operation three years later to have his "second" heart recharged.

A new device was recently designed in Kaunas. It does not accelerate the action of the heart as the stimulator does but, on the contrary, slows the rhythm down when it is too strong. This pacer is already in use in treating cardial and other diseases.

The Institute of Experimental Medicine in Vilnius, also directed by Professor Laucevičius, makes use of mathematics, too. Pathologist Ruzinas Ptašek, head of the department of cell morphology, showed me large volumes full of nothing but figures—the qualitative expressions for phenomena taking place in the structure of cells. Fed into the memory bank of the computer, these figures make for better diagnoses. Whatever else they may do, the ordinary methods—the nonmathematical methods—are not able to explore the enormous number of correlations which the disease mechanism originates in cells. Mathematicians doing research on the cell level are now making recommendations to therapists—whether to suppress or stimulate one or another process in treatment.

We know that approximately half the population suffers from diseases of the joints. In the institute not only rheumatism, that disease of all ages, is studied, but other joint ailments as well. Studies usually begin with the youngest patients. About 10,000 children had to be examined to work out a correct criterion for diagnostics. The study was headed by Liubartas Delnickas, a young institute researcher.

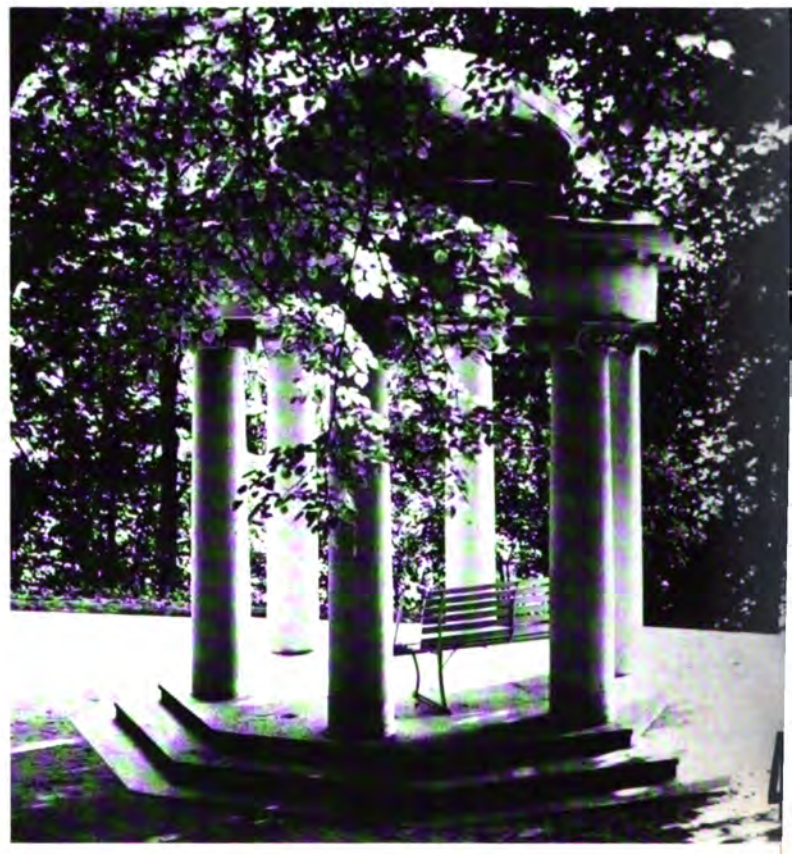
Muscle diseases much resemble diseases of the joints. It is already clear that about 80 per cent of the cases that used to be regarded as affected joints turn out to be affected soft tissue. To find out where the pathological process actually takes place—in the muscles or in the joints—is a matter of primary importance. Pranas Erelis, Master of Science (Medicine), cites an enormous volume of data, all of it expressed in the language of mathematics. Every person under observation has a case card with up to 200 indices! Without a computer there is no way of processing all that information.

Those who are working to tie up mathematics and electronics with medicine believe that the union will make for vastly improved diagnostics. Physicians, usually very careful in their judgments, are not afraid of calling the diagnostics of the future "ideal," and they believe this future is not far off.

FREE QUIZ CONTEST	1	2	3	4	5
	What was Lenin's education? What did he consider his real profession? What post did he hold under Soviet power? (3 points)	When did Lenin join the Russian revolutionary Marxists (the year)? When was the party organized? What was its name at the time of organization? (3 points)	Name Lenin's first major work. When was it written (the year)? (2 points)	What Russian newspaper, still published, did Lenin found? When (the year)? (2 points)	Name the first crees of the So Republic draftec Lenin. What leg tive body were adopted by? Wh (3 points)

100th ANNIVERSARY OF VLA











6	7	8	9	10	ADD 10 EXTRA POINTS TO YOUR SCORE!
ime the plan for economic development of Soviet ssia worked out Lenin's initiative. hen was it adopted e year)? points)	What is the number of volumes in the *Complete Works* by Lenin? How many separate texts do they include? (2 points)	What international prize is named after Lenin, and which Americans have won it? (2 points)	What newspaper in the United States first published an exclusive interview with Lenin as the chief executive of Soviet Russia? Give the date of publication. (2 points)	The pictures below are of places associated with Lenin. Name the places. (7 points)	*Write an essay (no more than 300 words) on Lenin's Contribution to the Development of Society.*

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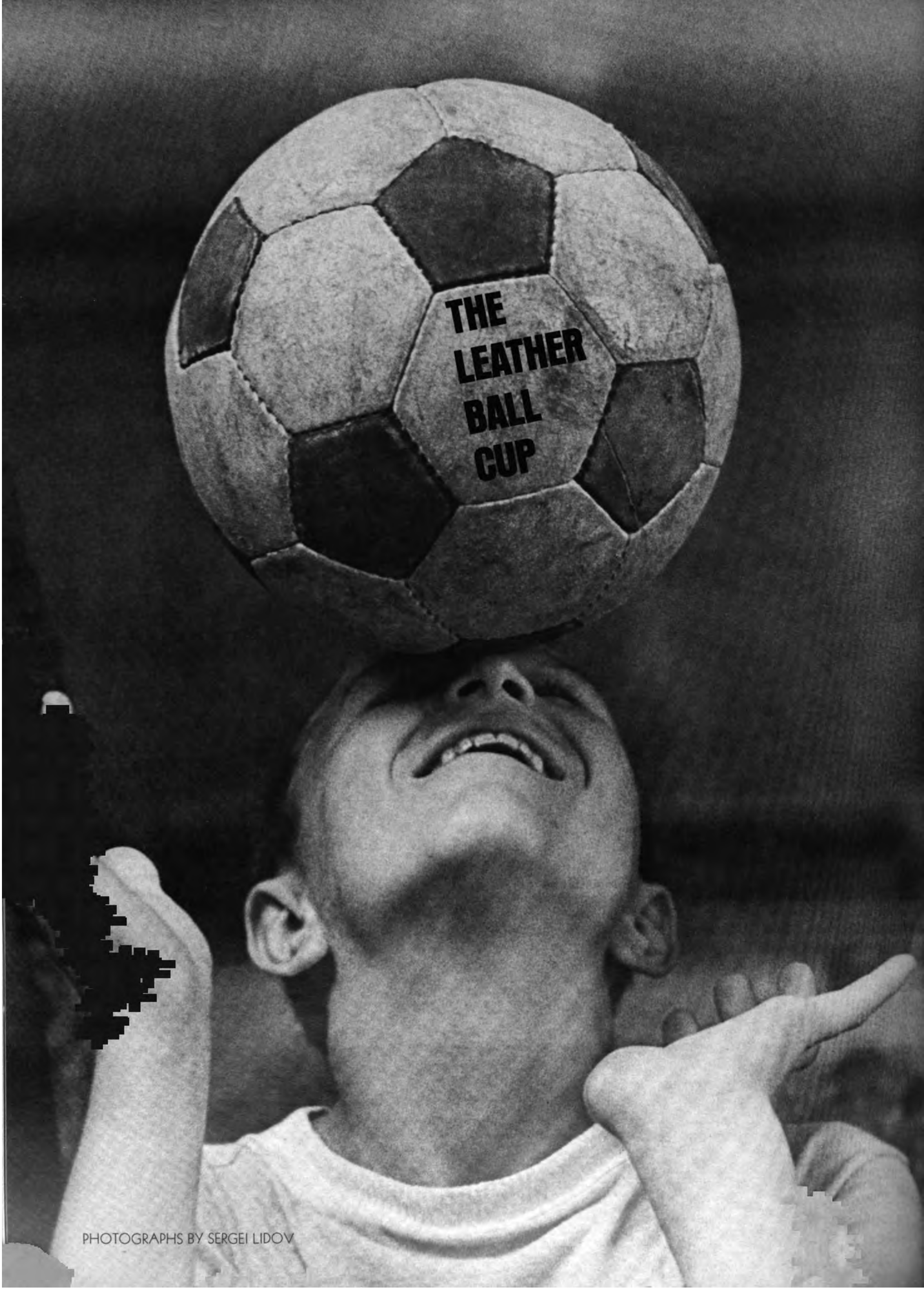
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4. **Eligibility for the first prize is limited to persons 18 years of age or older.**
5. **Quiz questions are based on materials published in SOVIET LIFE magazine. Answers may also be found in official Soviet statistics and state documents.**
6. **The Editorial Board of SOVIET LIFE will evaluate all answers. All entries will become the property of SOVIET LIFE, and the decision of the judges will be final.**
7. **In the event of ties, finalists will be asked to write a 500-word essay on Lenin, Leninism and the Modern World. Winners will then be determined on the quality of these essays, which will be judged by a panel of competent Soviet literary critics and historians on the basis of literary style and the accuracy and extent of historical research.**
8. **All winners will be notified by mail. A complete list of winners will be published in the April 1970 issue of SOVIET LIFE.**
9. **This offer void in states where prohibited.**



PHOTOGRAPHS BY SERGEI LIDOV



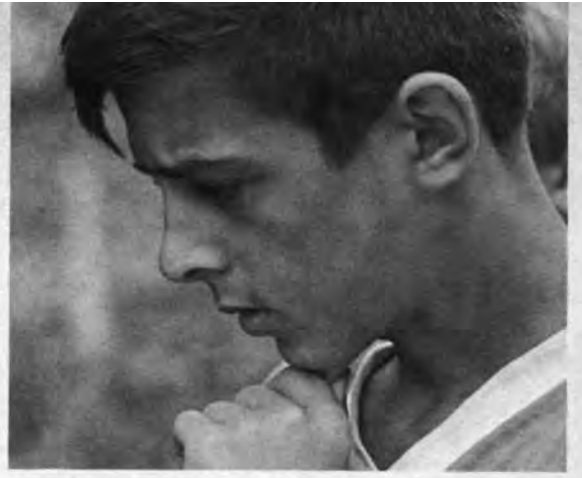
This scissors kick evokes delight in the stands, even if it does not lead to a score.



Learning the art of headwork. Below: "If only I could do this in an official game."









The Armenian team (top left) rejoices over its Cup final victory.

"We could come back with the Cup, unless they do." The players troop to centerfield at Lugansk (below) for the final game. Soccer is one of the most popular sports, and as usual the stands are packed.

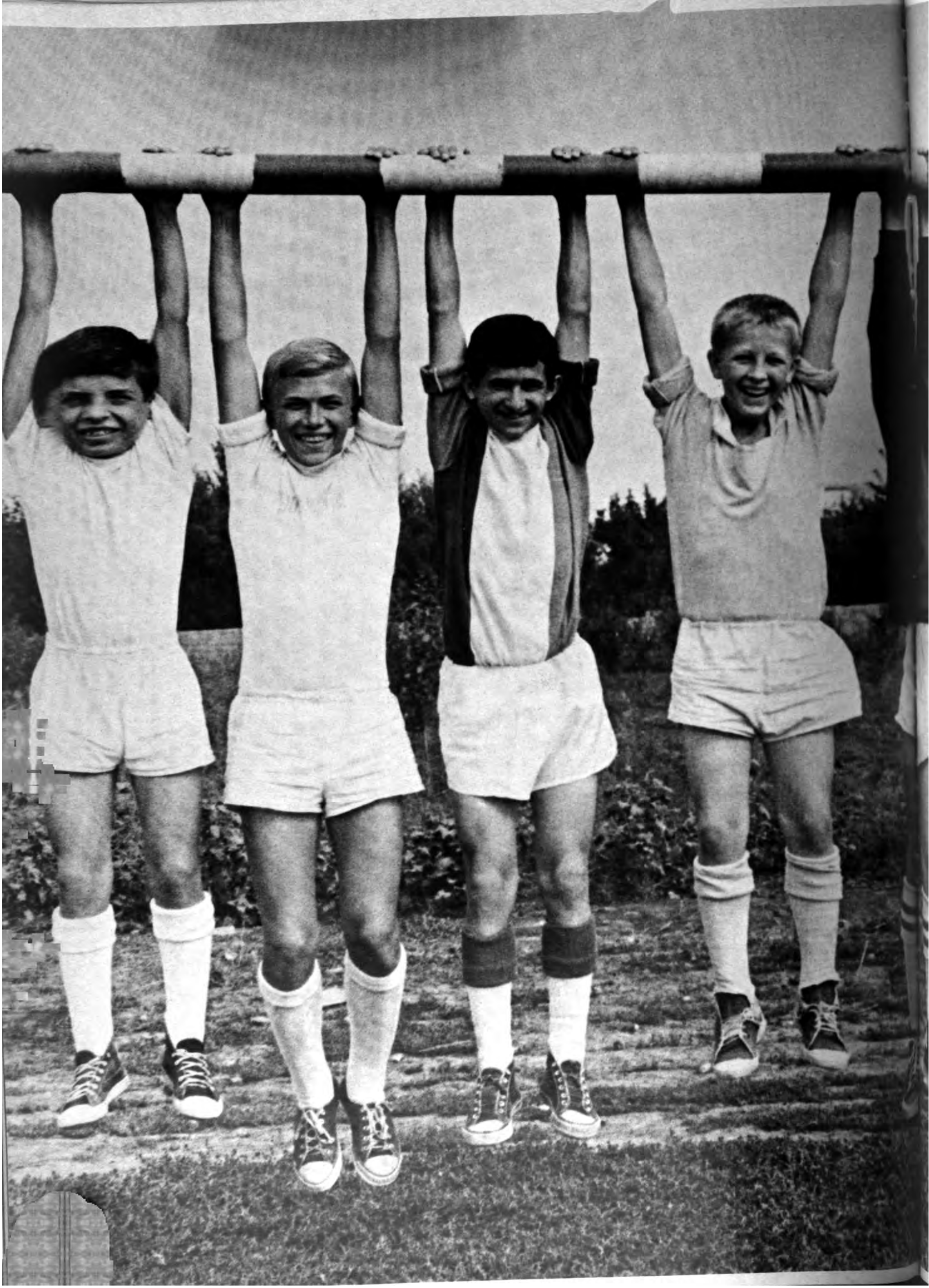
Participation in the Leather Ball Cup, the national junior soccer championship, represents the pinnacle of achievement for young soccer players in all 15 republics. Most boys who are taken by their dads to watch their first soccer games become lifelong devotees. Junior games are played between school grades, at neighborhood, city and regional levels and, recently, on a national tournament level. In the latter, sponsored by the Central Committee of the Young Communist League, the winning finalists are awarded the Leather Ball Cup. In 1968 the tourney was held in Lugansk, the Ukraine. The event is always televised live and attracts many thousands of people to the stadium. The onlookers include coaches from adult teams, who note the names of the most promising players.





The way to national tourney participation is through hard work at the soccer clinics. Here, sober concentration alternates with the joy of accomplishment, as each novice dreams of exchanging his sand-lot jersey for a "real" uniform.

Customarily, each final contestant is presented with a ball bearing the autographs of star Soviet soccer players. In 1968 the Armenian republic junior team became the national champions; six players from other teams were cited for best performance in various categories. The annual fixture includes teams representing large cities as well as the republics.





Rated best in the 1968 final were (from left): Gurami Gogolashvili (Georgia), best halfback; Sasha Shadrin (Ukraine), best ball control; Teimur Musayev (Azerbaijan), top scorer; Zhenya Kuzmin (Byelorussia), best forward; Igor Ivanov (Estonia), best goalie, and Vladimir Chirkov (Russia), best fullback.

NEXT ISSUE



One hundred ballet stars from all over the world assembled in Moscow in June 1969 for the First International Ballet Competition, but only 27 made it to the third and final round. It was grueling work for the dancers but a real treat for the audience, which thoroughly enjoyed seeing the various schools of classical and modern choreography and the performances of talented individuals. Among those who found favor with Moscow's sophisticated ballet devotees were two Americans, Eva Evdokima and Helgi Tomasson. The panel of judges, presided over by the world-famous Soviet ballerina Galina Ulanova, awarded a silver medal to Mr. Tomasson of the Harkness Ballet and a prize to Miss Evdokima of the British Royal Ballet and the Royal Danish Ballet. The event is described in an article by prima ballerina Maya Plisetskaya, who has performed in the U. S. many times.



Among our foreign language institutes, the one in Moscow, the First State Pedagogical Institute of Foreign Languages, occupies a special place. It has a translators department that is considered the best in the country. Its graduates also make excellent interpreters. Some of them have accompanied Soviet delegations to the United States and have won the admiration of Americans who had the opportunity of observing their speed and skill. To do his job properly, the interpreter must be a well-informed, cultured person, and so the five-year course of study includes philosophy, literature, social science and economics in addition to intensive language training. Teaching methods, the relations between student body and administration, student self-government and other points of interest are described by the rector of the institute, and by a dean and a student.

The December issue will have additional materials on the life and work of Vladimir Lenin—memoirs, rare pictures, and an article by Professor Dmitri Yermolenko on how Marxist philosophy treats revolution.

An article on the late Ivan Pyrev's last film, *The Brothers Karamazov*, and on this director's new approach to the famous novel by Dostoyevsky.

Soviet scientist Georgi Tushinsky writes about studies made on avalanche danger and the steps taken to protect man against this hazard.

In the 13 years of its existence in Vilnius, capital of Lithuania, the Jewish People's Theater company has increased from a handful of enthusiasts to the present total of 200 amateur actors. Irina Kalitenko's article with photographs by Vsevolod Tarasevich tells the theater's story.

A picture story on winter: skiing, ice skating, New Year's festivities.

COMING SOON

Man and the sea.



Detail of a distaff painting by a peasant on an urban theme.

Photograph by Lev Kogan

SOVIET LIFE

WORLD BALLET COMPETITION IN MOSCOW

LEARNING FOREIGN LANGUAGES

December 1969 • 35 cents



EVERYBODY SKIS

It's In To Be Out



A small sampling of the winter weekend exodus from Moscow.



The Transcarpathians—wonderful skiing country.



The Moscow River embankment at Lenin



In the hills that surround the Oleny pond in Moscow's Izmailovo Park.

No skiing party is altogether complete without one.



It is a good Newtonian law that what goes up must come down, but what about vice versa?



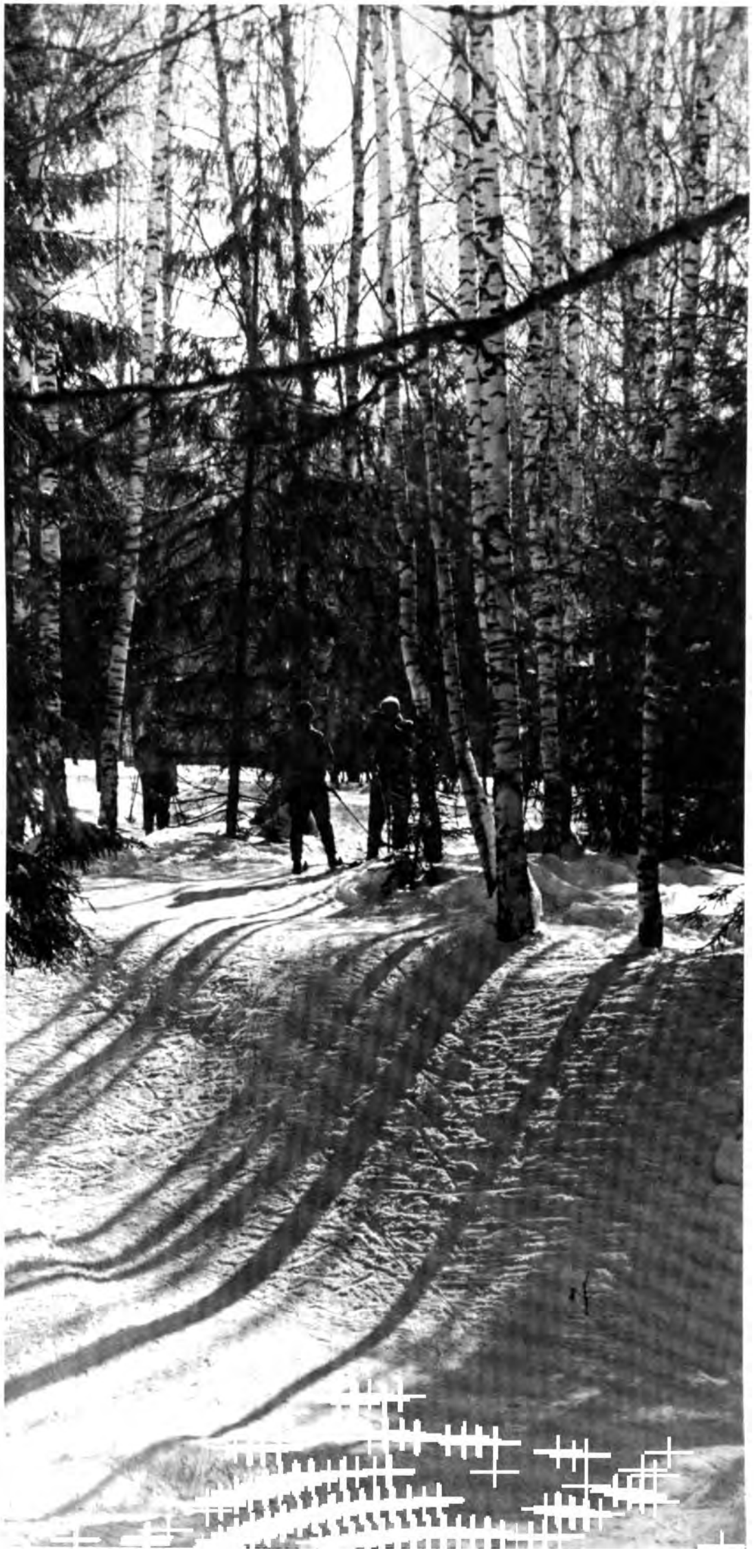
The Russians love winter and everything connected with it. For them skiing is much more than a sport; they consider it one of the necessities of life. Every weekend the railway stations are jammed with young people heading for far-away slopes and jumps—Bakuriani in the Caucasus, Itkol in the Northern Caucasus and camps in the Transcarpathian Mountains.



Time for a little horsing around with daddy.

The samovar is an essential part of the gear.





Family groups are willing to settle for spots close to home. The ski jump at Lenin Hills right in Moscow is excellent, and there are better than adequate places to enjoy this popular pastime even in the city parks. Sokolniki and Izmailovo, easily reached by subway, are favorites of the Muscovites. Students usually spend their winter holiday skiing.

From the Carpathians to the Ci



Climbing up Goverla, highest peak in the Carpathians.



They say this is the proper way for a skier to relax.



Skiing in the Soviet Union is very much a family sport. Here are papa, mama and the kids out for a day in the woods near the capital.



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Serious skiing on one of the high-mountain runs.





Front Cover: Grandfather Frost is the jolly old man who delivers New Year's presents to good children all over the Soviet Union.

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Moscow's First International Ballet Competition



At the Bolshoi, ballet was translated into light and motion.

Photographs by Alexander Makarov



Evdokimova of the
. dances a
ation from Giselle.

Draws World's Best Young Dancers

Ballet Competition: Poetry and Stamina

By Maya Plisetskaya
Prima Ballerina, Bolshoi Ballet

A HEATED DISPUTE over the judges' verdict is the aftermath of most contests. But the USSR's First International Ballet Competition, held in Moscow last June, was an exception. The jury's preferences coincided almost completely with those of the audience and contestants. As a jury member, I felt that the awards went to the very best, and was glad to find myself in agreement with the rest of the panel.

One of the two highest prizes for a duet performance was awarded to Nina Sorokina and Yuri Vladimirov, Bolshoi Ballet soloists. These young dancers are favorites with the Moscow public, which knows and appreciates them. They were applauded enthusiastically — especially Yuri Vladimirov, who had literally surpassed himself.

Yet, the very warm reception given the French duo, Francesca Zumbo and Patrice Bart, indicated that the public is unbiased. It responded to these dancers with genuine pleasure—especially after their classic pas de deux from Swan Lake *and the duet from* Bhakti. *The latter was set to Indian folk music and produced by Maurice Béjart, one of the world's best ballet masters.*

The gold medals for duet performances were shared by contestants from the Bolshoi Ballet and the Paris Opera. I think that this was quite fair—it would have been wrong to slight a single one of these outstanding dancers. They fought for victory, showing impressive technique, and were fully each other's match.

The gold medal for male soloists went to Mikhail Baryshnikov, a young dancer from Leningrad. He held the lead from



The jury included many of the world's great names in dance—Agnes de Mille of the U.S., Arnold Haskell of England, Igor Moiseyev of the USSR. It was chaired by Galina Ulanova, for many years the Bolshoi's prima ballerina. Below, Ulanova receives a bouquet from Maria Kosheleva, a Leningrad English-language teacher.







The young contestants were understandably a little nervous. The best earned their medals by consistent artistry in all three rounds. Far left: Martine Chaumet of France waits in the wings. Left: Advice from ballet mistress Sofia Golovkina is pondered by her pupils, Marina Leonova and Alexander Bogatyryov of the USSR.





After hours of practice at the bar (above) with her partner, Patrice Bart, Francesca Zumbo of France applies makeup for a performance (left). Magda Saleh of the United Arab Republic (below) confers with her former teacher, Soviet ballet master Leonid Zhdanov.







Francesca Zumbo dresses for one of the rounds. She and her partner shared the first prize for duet performances with Nina Sorokina and Yuri Vladimirov of the USSR.



Eighteen-year-old bronze medalist Ludmila Semenyaka of the USSR (top left) was singled out by the correspondent for an American dance magazine as "obviously . . . a world figure in ballet in the future." Bottom left: Silver medalist Hideo Fukagawa at the bar.

the first round to the last, performing superbly, and was the general favorite with the audience as well.

Among the ballerinas the gold medal went to Malika Sabirova, the Tajik dancer. I had known her before as an excellent academic, classic ballerina. In this contest she reaffirmed her reputation, executing all her variations with faultless technique, inspiration and stamina.

I have good reason to mention stamina. Not every one knows that three of the Moscow competition's gold medal winners, Malika Sabirova, Mikhail Baryshnikov and Patrice Bart, mastered pain and illness in order to dance. Bart and Baryshnikov had suffered injuries, and Sabirova was running a high temperature.

I particularly admired the contest's three silver medal winners—Hideo Fukagawa of Japan, Loipa Araujo of Cuba, and Helgi Tomasson, an American born in Iceland. They showed excellent professional training and fine artistry, though each still has some aspects of technique to perfect.

All the dancers in the third round were excellent. At this point, it seemed, there were only winners. Understandably, the judges worked under a strain—from among the best, we had to select the very best. With each new performance, our impression of a contestant would change. Hideo Fukagawa, for instance, danced brilliantly in the first round, and it seemed that he was bound to win the gold medal. Yet, unfortunately, he was not as good in the works that followed: The flaws in his technique became apparent. On the other hand Alexander Bogatyryov, a graduate of the Moscow School of Choreography, obviously felt constraint at first. But in the last round he displayed such skill and artistry that he was awarded the bronze medal. As for Tomasson, he plainly earned his silver medal by being equally good in all three rounds.

Always performing at the same pitch is professionalism, too. Accomplished dancers may sometimes depart from the normal because of their mood and physical condition, but such departures are never substantial enough to strike the eye. The participants in this contest were very excited, and for some of them, perhaps, this affected the results. Such excitement is easy to understand—the

Continued on page 12

Moscow's First
International Ballet Competition

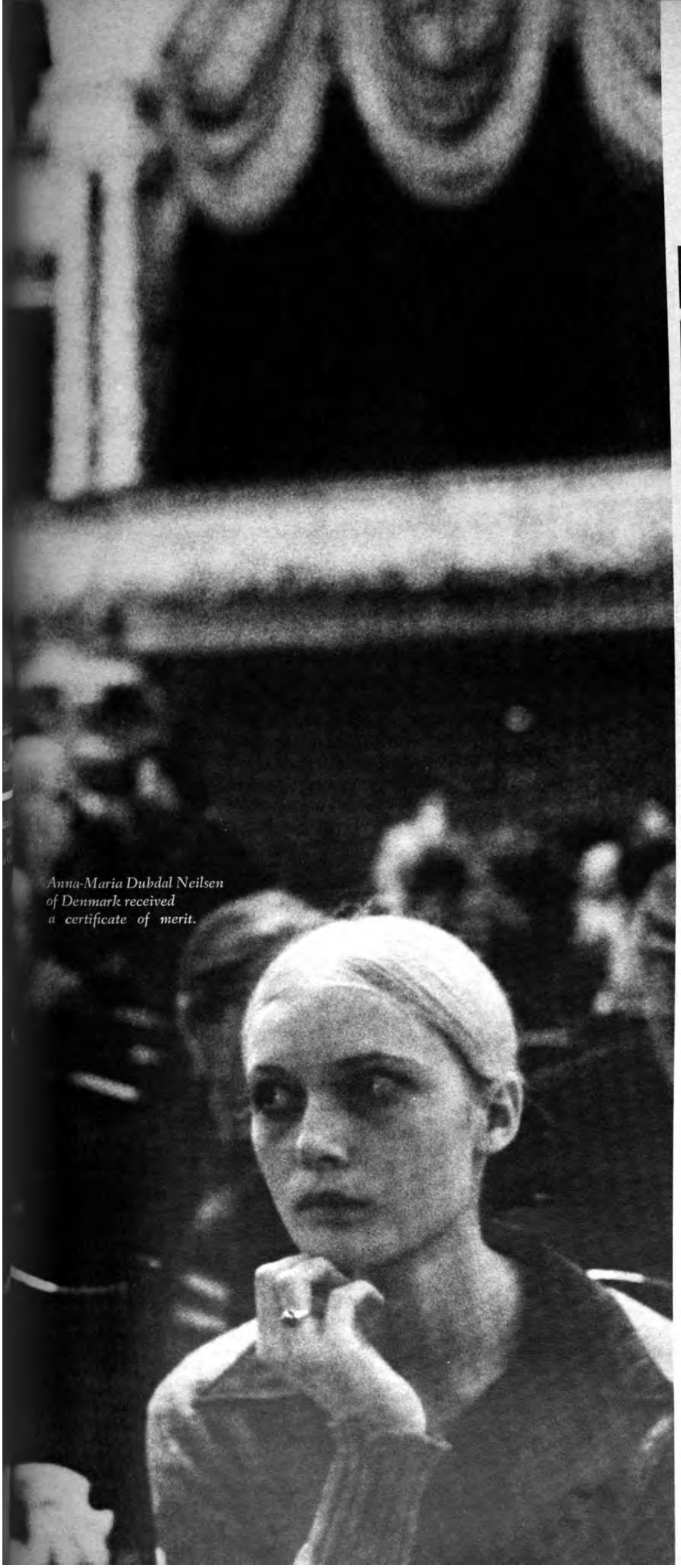


Gold medalists Fra
Zumbo and
Bart (France) in

Draws World's
Best Young Dancers



Adam Luders of Da
and Eva Evdok
in Carnival in



Anna-Maria Dubdal Neilsen of Denmark received a certificate of merit.



Lyubov Kunakova (USSR)



Alexander Bogatyryov (USSR)



Hideo Fukagawa (Japan)



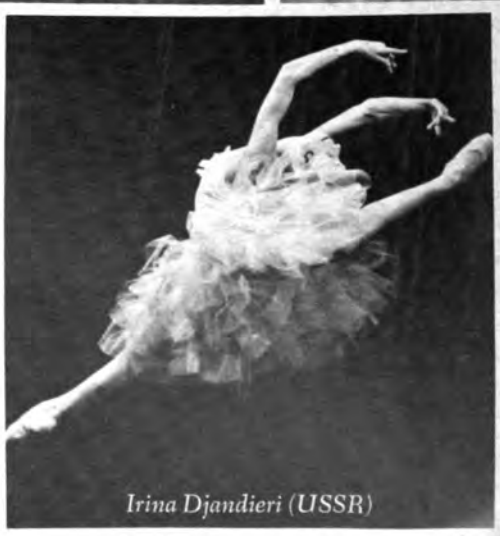
Nina Sorokina and Yuri Vladimirov (USSR)



Mikhail Baryshnikov (USSR)

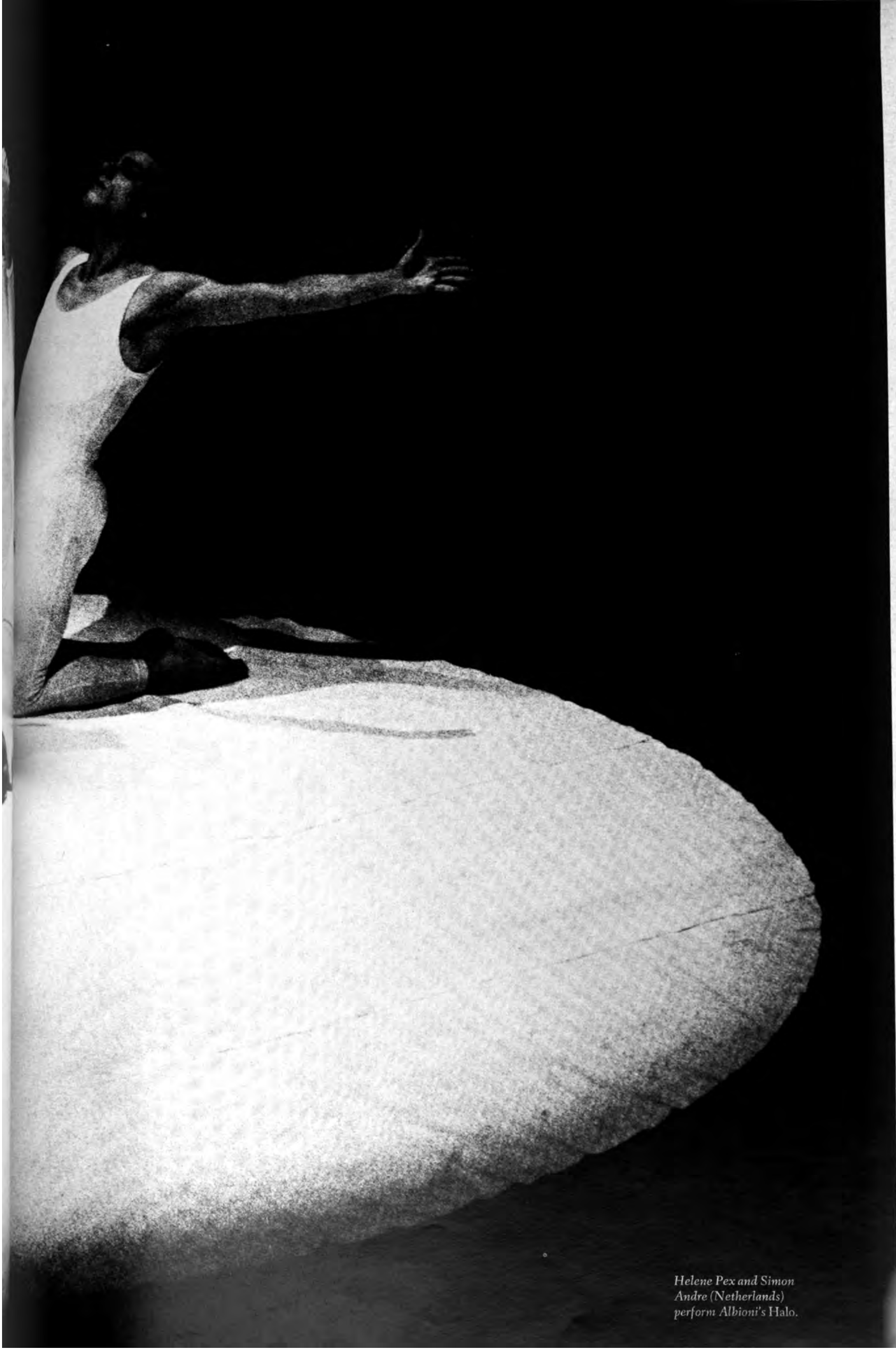


Helgi Tomasson (USA)



Irina Djandieri (USSR)





Helene Pex and Simon Andre (Netherlands) perform Albioni's Halo.

Continued from page 7

significant fact is that the best young ballet performers in the world had come to Moscow.

Here I would like to make a comment. Nowadays everybody is very keen on technique. I might say that everybody knows how to do everything. Yet, many dancers lack artistry—their execution is fine, but they don't have enough creative imagination. No wonder the audience gave an enthusiastic welcome to those contestants who blended great professionalism with inspiration, a superb sense of music and poetry. A wonderful impression was made by the Japanese duo Yukiko Yasuda and Ishii Jun, who won bronze medals. These dancers from Japan are remarkably poetic; music and dance are their life. Very fine performances were offered by dancers from socialist countries—Maria Aradi of Hungary, Roland Gavlik of the German Democratic Republic and Marin Stefensku of Rumania.

Leningraders Natalya Bolshakova and Vadim Gulyaev danced a very expressive work choreographed by Kasyan Goleizovsky to music by Massenet. The duo was awarded bronze medals. The Leningrad school of classic dance has long been famous, and at the competition Leningrad dancers, with their excellent training and academism, made a very favorable impression. Bronze medals also went to Leningraders Ludmila Semenyaka and Nikolai Kovmir. Gold medal winners Mikhail Baryshnikov and Malika Sabirova studied in Leningrad, as well.

There were some pleasant surprises at the contest. I have already mentioned the dancers from Japan, a country which took up classic choreography only recently. The contestants from the Mongolian People's Republic and the United Arab Republic also displayed notable artistry.

The competition provided a welcome ballet showcase for the general public as well as for professionals. The audience's enthusiasm underlined the growing interest in this traditional dance form, which is now developing in new ways the world over. No art can remain insulated—without fruitful contacts and mutual influence, it dies. As the contest demonstrated, the art of ballet is wonderfully inexhaustible; its unquenchable vitality was reaffirmed by these highly gifted young dancers.

The Bolshoi stage seems very big to this contestant, and his previous experience small.

SALVAGED BEAUTY

By Marina Khachaturova

T. Scott Offutt, Jr., of Towson, Maryland, wants to know how the treasures of the Hermitage were preserved during the blockade of Leningrad. The following article offers a reply to his question.

DURING WORLD WAR II the entire contents of Leningrad's Hermitage Museum were protected from destruction. I could quickly outline the steps of this operation. But no mere listing can reflect what the half-starved, mostly elderly staff, cut off by the siege, did to salvage the treasures of one of the world's biggest museums. It was an exploit, a heroic action by any definition, and a book on the museum during the wartime period is called just that, *The Exploit of the Hermitage*. One cannot read it without being deeply moved. Under the slabs in Piskaryov Cemetery, where the eternal flame burns in memory of the city's heroes, lie the remains of many of the Hermitage employees—young people doing graduate work, old woman custodians, and scholars of world renown. They and the few still living rescued the museum's treasures when they might sooner have been concerned for their own lives.

Immediately after fascist Germany invaded the Soviet Union, it was decided to dispatch the Hermitage collections to a safe place. Earlier, when nazi tanks appeared on the roads of Europe, the museum had prepared itself for possible war. The storage areas were piled with packing materials. The survival of hundreds of thousands of works of art—classic and modern European paintings, decorative objects from ancient Greece and the Far East, and many others—depended largely on how well they were packed. Years later, an art historian who had witnessed the evacuation of the Hermitage described the packing cases devised by a veteran restorer. Board crates, lined inside with plywood and oilcloth, crowded all the halls and galleries. In record time—a week—they had to be ready for moving. Every hand was needed—scholars, cleaners, guides, carpenters and whoever else.

The war was raging, many Hermitage workers were fighting at the fronts, and yet the packing at the museum went on without letup. But though there were many skilled hands at the Hermitage, they were not enough to pack thousands of paintings in so short a time, to remove the huge old canvases from the frames without damaging the edges, and to roll them up with the greatest care. Friends of the Hermitage, old and young artists and students of the Fine Arts Academy, helped out. Paintings were taken out of their frames and the empty frames rehung. Only three great masterpieces—Leonardo da Vinci's *Madonna Benois* and *Madonna Litta* and Raphael's *Connestabile Madonna*—were packed in their gilded frames. An exception was also made for Rembrandt's last great work, *Return of the Prodigal Son*. At dawn of July 1, 1941, a part of the priceless collection of paintings and sculptures left the Leningrad railway station. The most precious masterpieces rode in an armored car; others traveled in Pullmans. The special train included 22 freight cars, a passenger car for 17 museum custodians, and a car for the military guards. It was pulled by two locomotives. On open platforms in the middle and at the end stood antiaircraft guns and machine guns with barrels at the ready. In front sped a "scout" locomotive. The train was headed east, to the city of Sverdlovsk in the Urals, where the art was stored from July 1941 to October 1945. The major part of the museum's collection—1,118 heavy crates containing half a million masterpieces —was thus evacuated. But more than a million items, the museum's reserve collection, were left behind. The situation at the front soon demanded that these items be moved also. Again hundreds of thousands of paintings, sculptures and objects of art had to be crated. A second train pulled out of Leningrad on July 20. Its 23 cars carried 1,422 crates with more than 700,000 items. They were escorted by 14 caretakers. That same day preparations were begun for a third train load. The three-hundred-fifty-first crate was being packed when, on August 30, 1941, the Hermitage's curator, Academician Iosif Orbeli, stopped the work. The day before, enemy troops had cut off the last railroad joining Leningrad to the rest of the country.

Long-range guns shelled the city round the clock, and the bombardment from the air continued night after night. The enemy closed in on the city. To see the whole of the Hermitage a viewer has to walk 13 miles; the frontline was only eight miles from the museum. Leningrad was ready for street battles; its squares, avenues and embankment bristled with antitank and anti-infantry emplacements.

Artillery experts were called to the museum, where they measured and calculated. The vaults and walls of the lower floors, they found, could withstand the most powerful air bombs and the biggest artillery shells. The Hermitage custodians now became porters. They carried the still unpacked items of the reserve collection down to safer places on the ground floor or in the basement. They lugged heavy marble, bronze and period furniture down the stairs. Thousands of porcelain objects were buried in sand in the basement to await the end of the war. A few rare pieces remained on the second floor; their fragility or inordinate weight made it impossible to move them.

The collection was saved, but its few attendants found plenty to do. Care was needed to protect the storage areas, which now housed the collection of the Academy of Sciences, too—it had been delivered when the blockade began. And under frontline conditions, in a city under constant bombardment, the staff worked to preserve the Hermitage buildings—those historic and artistic monuments designed by great architects.

The museum's attendants formed an emergency restoration team which quickly and skillfully repaired the damage done by shells and bombs. A major role was played by the fire brigade, also formed largely of the museum's professional staff.

Even in peacetime the city fire department had given the Hermitage top priority. Early in the war, more fire posts were added. Each fireman had his particular post and was responsible for his section. Some days there were 10 to 12 alerts, seven hours at a stretch, at times. The museum people packed their gas mask carriers with books to pass the time.

Boris Piotrovsky, a world-famous orientalist, wrote in his blockade diary with dry humor:

"The fire brigade became the center of the Hermitage's scholarly life. Various subjects were studied in the brigade room: West European art, the history of Russian railroads, ancient Latin manuscripts, archeology, the history of Iran, the history of the Van kingdom."

In all-clear periods they did their museum work. The inventory was carefully checked. Each time pieces were moved from storage to storage and from floor to floor, a new listing had to be made.

This at a time when the factory worker's ration was 9 ounces of bread substitute a day, and the office worker's 4½ ounces. On the eve of the war the Hermitage was due for repairs, and it was stocked with glue and drying oil. With these, the staff supplemented their food supply. They cooked "jelly" from the glue and fried blockade pies, made of frozen potato peelings, in the drying oil. The museum workers lived in the Hermitage; it was one of the many palace basements turned into bomb shelters when the war began.

In January 1944 the 900-day blockade was broken. Restoration began immediately and went on for several years. The museum's floor space equals that of two medium-sized residential blocks containing fifty six-story apartment houses.

In 1946 Iosif Orbeli, then the Hermitage's curator, was a witness at the Nuremberg trial. Testifying on the destruction and looting of cultural and scientific property, he said:

"It is eminently clear to me and my staff that the artillery bombardment was premeditated, because the damage to the museum was not done by chance artillery attacks, but consistently, during the systematic shelling of the city for a period of many months." The lawyer defending Hitler's general staff tried to refute Orbeli's evidence. "Does the witness have sufficient knowledge of artillery bombardment to judge that these attacks were premeditated?" he asked. Orbeli replied: "I have never been an artilleryman. But the Hermitage was hit by 30 shells while the bridge next to it was hit by one. From this I can judge where fascism aimed. Within these limits I am an artilleryman!"

The Hermitage has long since been restored. All the masterpieces are back in their original places, and the museum continues to attract visitors from all over the world.



1



2



3

THE BOY opened his mouth. As he stared at the vareniki [1] *he opened his mouth still wider. At this point a* varenik *slipped out of its bowl, plopped into the sour cream, turned on the other side, jumped up and landed right in his mouth. The boy ate it and opened his mouth again, and another* varenik *found its way to his mouth in the same fashion. All he had to do was chew and swallow. 'Did you ever?' thought the blacksmith, gaping in surprise. The very next moment a* varenik *fell into his mouth, too, and smeared his lips with sour cream."*

Every Soviet schoolchild knows these lines from Nikolai Gogol's story "Christmas Eve," about a Ukrainian village. And so he associates Ukrainian food with vareniki *and with* galushki [2]*, of which Gogol also wrote that "all holy men and God's servants ate* galushki."

Ukrainian dishes are spicy and rich. For spiciness they yield the palm to the Caucasian cuisine but surpass the Russian. Even gorilka *(Photos 1 and 2)—a variety of vodka—is made with pepper. You find a pod of red pepper at the bottom of the bottle. Ukrainians are fond of fatty smoked sausage stuffed with garlic, bacon sliced fine, onion and sour cream. They often fry sausage whole or sliced (Photo 4), depending on its size. Ten minutes before serving, it is fried on all sides in butter or lard. It is served with fried or mashed potatoes, and like many other dishes, is accompanied by a cucumber and tomato or green onion salad (Photo 4). Ukrainians like fresh vegetable salads and mix them with a great many things. Kievsky salad (Photo 2) includes, besides the above-mentioned vegetables, eggs, olives and a slice of lemon.*

For Ukrainian stew (Photo 1) besides the meat and bouillon, of course, you need tomato purée, black pepper and a bay leaf. Before serving, sprinkle with chopped garlic, parsley and dill.

The famous and very Ukrainian galushki *(Photo 5) are prepared as follows: sift 1 pound flour, pour in half a glass of water, add two tablespoons of melted butter and two eggs beaten with a little less than a teaspoon of salt. Mix all this with the flour to a smooth dough. Roll out the dough until it is one-quarter of an inch thick and cut it into one-inch pieces, any shape. Put the pieces of dough* (galushki) *into hot salted vegetable broth (three cups of water, one small carrot, half a parsnip, a stalk of celery), cook for 12 to 15 minutes. Tomato paste may be added. To make* galushki *without the soup, place the pieces of dough in boiling salted water, cook for 10 minutes, and as soon as they float to the top, remove with slotted spoon (the water is discarded). Fry the* galushki *slightly in butter and serve with sour cream.*

Delicious vareniki *stuffed with cherries (Photo 3) are worth all the trouble. Pit two pounds of sweet cherries and sprinkle them with granulated sugar. (Save the pits for the syrup.) Roll unleavened dough into a thin strip 12 to 15 inches wide and brush with the beaten white of an egg. Use a glass to cut out rounds and place two or three cherries on each. Join the edges and pinch them so they stay together. Ten minutes before serving, place the* vareniki *in boiling salted water and cook until they float to the top. Remove with a slotted spoon to a plate, pour melted butter over them and serve with sour cream and syrup made with the cherry pits.*

By far the most popular Ukrainian dish everywhere in the country is borsch, Ukrainian style (Photo 1). It's not hard to make.

The following recipe serves four:

2	*medium beets*	1	*medium onion*	2	*strips bacon*
¾	*lb. cabbage*	2	*cloves garlic*	1	*level tbs. sugar*
1	*lb. potatoes*	3	*oz. tomato purée*	1	*tbs. 3% vinegar (or to taste)*
1	*medium carrot*	1	*level tbs. flour*		
1½	*oz. root parsley (2 medium)*	¾	*oz. salt pork*	½	*green pepper*
				1	*tbs. sour cream per serving*

Slice the beets, add salt, vinegar, bacon and sugar, and stew until the beets are cooked. Add purée. Shred carrot and root parsley, slice onion and fry in fat. Place sliced potatoes and shredded cabbage in boiling water and cook for 10 to 15 minutes, then add the stewed and fried vegetables, browned flour, pepper and spices and cook till ready. Before serving, add garlic grated with dill, parsley greens and salt pork. Garnish with sour cream.

In the restaurant borsch is often served in clay jugs that are covered with a flat cake (Photo 1).

[1] Filled dumplings
[2] Plain dumplings



Vyacheslav Nosov is head chef at the popular Ukraine Restaurant in Moscow.



UKRAINIAN DISHES



Photographs by Mikhail Anfinger

4

5





CAN WE LIVE LONGER?

By Vasili Kuprevich
Academician, Byelorussian Academy of Sciences

Biologist Vasili Kuprevich (1897-1969) was president of the Byelorussian Academy of Sciences from 1952 until his death. He wrote more than 100 monographs on the theory and practice of botany.

WITH THE DAWN of the space age people are once again questioning the "preordained" limits of life. Ever since man began to study himself and his environment, he has sought to stretch those limits.

If I sound like a science fiction writer, let me remind you that much of what we accept as commonplace today was fantasy only yesterday.

But first a word or two about a realistic problem whose solution is already being prepared—longevity.

Can man live longer? Yes. Can he live forever? An absurd question! But is it really so absurd?



Teba Sharmat of Abkhazia has no scientific prescriptions for longevity. His motto at 115: "Moderation and work."

Carrier of Life

Human nature resists death. Man has volced his dream of immortality in myths about immortal gods. The church promised immortality in heaven. Philosophers say that to live is but to die and that immortality is a purely metaphysical concept. Unfortunately most doctors and biologists think the same. Certainly enough reason to be fatalistic!

But why should every living thing be fated to die? Observation and experience tell us that. However, observation also tells us daily that the Sun revolves around the Earth. Marx bequeathed to us that great and grand principle of doubting everything. For science the principle means that from time to time we must put to test the universally accepted "obvious" truths on which it rests.

In my student years I, a future biologist, was told that everything that lives ages, that it carries the seed of inevitable death. But a professional acquaintance with flora and fauna raises doubts.

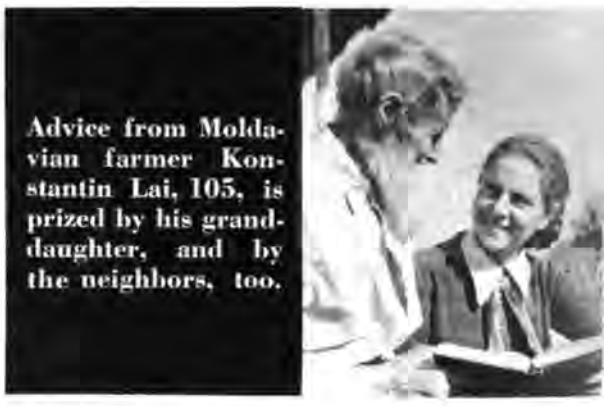
Indeed, all of life is based on protoplast, a clot of an intricate, constantly renewing substance which has unlimited ability to modify as it exchanges matter and energy with the environment. Live matter differs from all other highly compound material structures in its faculty for self-renewal or self-repetition. Protoplast has the unlimited faculty for assimilating in the process of self-repetition, that is, for constructing live matter of a definite type or species, a strictly defined range of environmental components.

Live matter is exceptionally enduring and long-living. We know of fossil poplars of the Cretaceous period that are not essentially different from their sisters of today. This means that for 80 million years the poplar has been passing down from generation to generation all the minute tokens of heredity. We also know of trees which themselves live as much as 12,000 years. This is a life span during which mountains crumbled, rivers changed their courses or disappeared, civilizations rose and fell, the climate of large areas changed repeatedly and the outline of continents altered. But the tree lived on, gaining girth and fathering progeny.

No material structure in the world can rival in endurance and permanency the carrier of life, protoplast.

It is quite possible that the world of fauna also has long-living representatives. More than once there have been reports of prehistoric animals living in small lakes. While I am not saying these reports should be believed, it is altogether possible for an animal to live on for millenniums. Nature does not rule that out, though it is doubtful whether there could be any reproduction.

Death is a historical thing. It was not always there. It appeared at a definite stage of evolution to become its key motive power. The change of generations made for the emergence—and preservation as the result of natural selection—of those organisms best adapted to the environment. However, as new species evolved, death introduced "natural" life spans for them.



Advice from Moldavian farmer Konstantin Lai, 105, is prized by his granddaughter, and by the neighbors, too.

Death—An Anachronism

Man is a biological and social creature, direct heir of the higher primates, for whom the life span was roughly as long as is required to leave viable progeny. Our beast ancestors "bequeathed" us only a few decades of life. As the result of the protracted evolution of the physical side of modern man's ancestors, a species emerged with an average life span.

However, with the appearance of society man escaped the control of natural selection. His organism developed long ago and evidently over a long time. But death has become a historical anachronism because it is no longer required as an evolutionary factor. From the point of view of society it is dangerous and harmful. And from the angle of the tasks before humanity simply absurd. Is there anyone who would want to perpetuate this absurdity?

Many people think the average life span of 80 to 100 is absolute, or, as they say, of divine making. We claim that it emerged in the process of history and therefore can be

maybe forever?

stretched, in principle, to any number of years.

There are many things we do not know. We do not even know how long man has lived. Some geriatricians say 120 years, others say more than 150. Was there ever anyone who lived to the ripe old age of 300? We do not know, we have no authentic information. However fabulous the reports of centenarians may seem, fantasy is too often based on fact. Better than arguing about it would be to look for the remains of such Methuselahs.



Shirali Muslimov of Azerbaijan celebrated his centennial as a subject of the czar. He is still an excellent rider at 160.

Elixir of Life

We do not take immortality to mean life forever because even the visible Universe has an age.

For the elixir of life let us call on the nature that bore us. We know of practically everliving plants, the periodically rejuvenating unicellular plants. In the case of man the old cells also rejuvenate almost fully after a certain period. But why "almost"? Because man's nervous system is highly differentiated and its cells do not change from birth to death. Could aging and death be retribution for high nervous organization? If so, we would live no longer than cats.

There is a plethora of theories. Pointed out as one of the main causes of aging is the impaired structure of DNA and RNA, which govern the reproduction of the cell's key components. Geneticists believe that these structures program the plan of future protein molecules, but when "static" breaks into the information channels something goes awry and the wrong molecule is synthesized. The result is that the new cell which takes over from the dead one is different.

However, nature gets rid of such defects in reproduction. The merging of two defective cells—fraternal and maternal—usually gives rise to the embryo of a normal organism. Some geneticists believe that parental DNA defects may compensate one another because the damage as a rule hits different spots of the chromosomes and is therefore not manifest in the offspring. It is likely that something similar may be evolved to remove the defects arising in cell components in the process of self-renewal.

Geriatricians must make up their minds as to what aging and old age really are. If a disease, it can be cured. If programmed in the gene, then the program must be changed.

THE DECISIVE GAME

By Boris Spassky
World Chess Champion

AT a PRESS CONFERENCE devoted to the last world chess title match, I told the newsmen that that engagement with Tigran Petrosyan was the toughest in my chess career. I was quite sincere when I said this: The victory cost me a good deal of strength, physical and mental.

Those first few days after the match I did not feel joy, but utter fatigue, total spiritual bankruptcy. I wanted to get away from it all as fast as possible.

As in previous battles for the World Championship, the atmosphere had been tense. We were under close, constant observation by our supporters. And, of course, I played for a long time against the same adversary. All this, I am sure, exhausted my nervous system. This explains why it was some time before I recovered enough to analyze what had been a titanic struggle.

Naturally, I can remember the episodes of that two-month contest much better now. I realize that the turning point came in the seventeenth game when Petrosyan, enjoying a better position, proposed that we call it a draw.

My situation was quite difficult, and I fought a few minutes with the temptation to accept his offer. But intuition told me that Petrosyan was terribly nervous, and I went on playing. In a marathon battle, you must be able to fight in both bad and good positions. If you sense uncertainty in your rival's game, you must try to create as much difficulty for him as possible.

I took the risk and won that seventeenth game, which put me in front again by one point, just like after the fifth game. And after the eighteenth game, the initiative was still in my hands. Tigran was having a torturous time defending his position. Although his efforts were ultimately rewarded (that game ended in a draw after 58 moves), Petrosyan could not shake off the unpleasant thought that he would possibly have to surrender the crown to me.

One could expect that after his unsuccessful experience in the seventeenth and eighteenth games, Petrosyan would put up a decisive fight in the nineteenth. This game played an exceptionally vital role in the final outcome. I would therefore like to analyze it with SOVIET LIFE readers, especially since it will take little time: There were only 24 moves.

SICILIAN DEFENSE
Moscow, 1969

White—Spassky **Black—Petrosyan**
1. P-K4, P-QB4

The reply of 1. . . . P-QB4 to my opening move, P-K4, is considered most unpleasant. Victor Korchnoi confirmed this opinion when he employed the Sicilian defense against me successfully in the 1968 challenge match in Kiev. However, I would like to point out that a player who resorts to 1. . . . P-QB4 must always be prepared for an uncompromising battle. I believe that in this game Petrosyan guessed, wrongly, that I planned to play for a draw in view of my one-point lead. At the moment I was in an aggressive mood, and a Sicilian defense suited me perfectly.

2. Kt-KB3, P-Q3 **5. Kt-QB3, P-QR3**
3. P-Q4, PxP **6. B-KKt5, Kt(QKt)-Q2**
4. KtxP, Kt-KB3

In our match Petrosyan applied various systems of the Sicilian defense. In a trying moment he uses this sharp variation, which proved so successful in the early part of his chess career.

7. B-QB4, Q-QR4 **8. Q-Q2, P-KR3**

My opponent clearly invited me to the variation of 9. B-KR4, for which he was well prepared. But at that moment I recalled my game with Bagirov in the thirty-first USSR Championship in 1963 when, a move earlier, he swapped his Bishop for the Knight on KB3, after which I had a hard time finding counterplay. Incidentally, I recently learned of an interesting coincidence. During the match between the national teams of the USSR and Yugoslavia in Skoplje, I was told

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the SEA LION

Drawings by Nikolai Vorobyov

Yuri Rytkheu is the first writer of fiction to come from the Chukchi, an Eskimo people who had no written language before the 1917 Revolution. He was born in Chukotka in 1930, the son of a hunter. In his native settlement he graduated from the seven-year school, then went to study at a teachers college at Anadyr, in the Far North, and from there to the University of Leningrad.

WHY couldn't she see all those things any more? There was a time when she had been able to see each blade of grass, each leaf, each pebble on the beach. The blue of the sky had had different depths from horizon to zenith, and the color of the sea had changed with changes in her mood. Could that have been only a child's perception, a child's vision?

"Why do I see a green blanket instead of separate blades of grass, a pebbly beach, the whole sky and the whole ocean? Why must I make an effort to see a separate green leaf?"

Emul was surprised to find herself asking such a question.

The newborn baby was carried to the shore, and Galmategin dipped the crown of her head in the salty water of the Arctic Ocean.

"It is good that she was born in summer," he said. "Otherwise I should have had to rub her head with snow."

Emul was hardly able to breathe when she was born. The midwife had to blow her own breath into her. To bring a rosy color to the blue skin, she told Galmategin to dip his granddaughter in the cold ocean.

All this was done without the knowledge of Emul's father, who was at a meeting of the rural Soviet, where ways of rooting out harmful traditional rituals were being discussed. When he learned about it later, his daughter was already wearing an amulet Galmategin had carved of a tiny seal with a silvery white coat.

"What harm does it do?" Galmategin asked when his son hinted that it would be well to remove from the neck of his daughter that sign of ignorance and backwardness. "It would be the same as taking off Pavlovna's necklace of glass beads."

Pavlovna was the wife of the collective farm bookkeeper and clerked in the village store. She was active in helping to wipe out harmful survivals of the past and was the first to search the tents for tambourines and old amulets. At the clubhouse she taught the young people modern dances, and her husband Gavrila Semyonovich taught the young hunters and girls to play the balalaika, guitar, mandolin and accordion. On quiet evenings the strains of "Shining Moon" were heard through the thin walls of the tent that was the clubhouse, and the northern lights seemed to flash in time to the music.

Galmategin was too old to go to sea to hunt, so he worked at the local ivory-carving shop, where old men like himself and several cripples, among them Kergol with his crooked legs and hunchbacked Aamro, who came from somewhere out in the tundra, sat all day.

Emul's parents were busy people. Her father was chairman of the local Soviet, and her mother headed a commission charged with introducing new ways of life. For most of the day the girl was left with Galmategin. When she no longer had to be breast fed, her grandfather assumed full care and took her with him wherever he went. When he went to work at the shop, Emul spent most of her days there.

Emul's childhood coincided with the years of the Great Patriotic War. She remembered the names of distant cities from Stalingrad to Berlin, talk of a shortage of tobacco, and a visit by American Eskimos.

By that time Emul was going to school. She spoke Russian well and was learning English.

She graduated from the seventh grade the year the war ended and received a diploma, a handsome piece of paper that looked like a State Loan bond. The school principal urged her to go to Anadyr to enter a teacher training school and hinted at the possibility of further education in Leningrad, but Emul decided to remain at home. A lot of people thought it was because she wanted to help her parents. By then her father was no longer chairman of the local Soviet and her mother no longer tried to introduce new ways of life because during the war years people had returned to many of the old ways in order to survive. Even the classrooms at school had used oil lamps, the kind Emul's mother used to call "smoke pots" and "survivals erupting black soot."

Emul's father did not prove very efficient when it came to ice floes and whaleboats. To his great chagrin and the disappointment of those who had once nominated him chairman of the local Soviet, his productivity was practically the lowest in the community.

Emul got a job as waitress at the local restaurant. She liked the clean, spacious hall in the new building, with its three big windows facing the morning sun. The most interesting and attractive part of the job was meeting the people who ate at the restaurant, visitors from the district center Anadyr and from all over the region. Unlike local patrons, they praised the seal chops and walrus liver the restaurant served. They flirted with the waitresses, made dates to meet them near the new clubhouse, and asked from whom they could buy sealskin pelts, embroidered slippers and figurines of idols made from walrus tusk.

These idols had become popular a few years before. Figurines of a fat little god with screwed-up eyes stood on shelves and desks and were even clipped to the ears of fashionable women. The idols were made by the dozen from scraps of walrus tusk and were sold on the black market. No ivory carver escaped the idol fever. Galmategin held out the longest but then gave in and started carving idols.

Many visitors approached Emul right in the restaurant, introduced themselves as friends of friends, and begged her to get them a dozen or so idols. Emul passed on the orders to her grandfather. Evenings he would switch on his drill at home, and the sharp cutter would bite into the ivory with a whine. Once Emul asked him to tell her about the idol that was enjoying such popularity.

"It's a symbol of ignorance and greed," he explained unwillingly. "A man used to hang it on his hunting gear so that everything bad in him would pass into the idol. Like a slop pail to be carried with you all the time, or a spittoon. When a man felt he could not suppress dark thoughts and dishonest desires, he got himself an idol. After he rid himself of evil passions, he threw the idol away. The people who buy it today are mostly good people. My conscience bothers me, but I can't help it. I explain what the idol signifies, but they refuse to listen. They just say it's fashionable to have it."

Emul's grandfather died suddenly. It was a blow to his relatives and to the whole village.

He was buried in the modern way, in a coffin, with speeches. A plywood obelisk with a red star at the top was set up over his grave, giving someone reason to remark: "As if he were a guerrilla and not an ivory carver."

While Galmategin was alive, no one thought about it, but after his death it was discovered that the aged carver had been the family's main support. Suddenly there was no money to buy tea and sugar; treats like condensed milk and candy vanished from the cupboard.

Emul's father spread his hands in bewilderment and sent his wife to borrow money from the neighbors.

One day Emul opened her grandfather's workbox. His tools, from the foot drill to the case of cutters, chisels, files and polishing cloths, lay in perfect order. In another section Emul found three dozen or so unfinished idols and something long and heavy wrapped in soft chamois skin.

She carefully unwrapped the bundle and started in surprise. Before her lay a carved and polished walrus tusk.

The closer Emul examined the carving the more excited she grew. She did not realize she was looking at real art, but a mysterious chord in her heart responded to the touch of the artist.

Carved on the tusk was a picture of the promontory where a big lighthouse had been built later. There was no better view of the village than from the promontory. From it every house stood out clearly and each passerby was easy to recognize. On half the tusk Galmategin had carved a picture of the old village with its skin tents and a few European houses. The other half showed the present-day village, with a row of wooden houses stretching from the foot of the promontory to the old wind turbine put up in the thirties.

Emul could make out people standing near the houses. On the shore walrus meat was being unloaded from boats. Farther on, men were rolling barrels from a barge that had its nose pushed into the shore. Smoke rose from a ship anchored offshore. It was not just any ship. Emul recognized it as she made out the word *Anadyr* carved in tiny letters on its side and below it Vladivostok, the name of its port.

As she gazed at the tusk, Emul felt tears blinding her. A melody of memories tugged at her heartstrings, mingled with tender bitterness that the moment her grandfather had recorded in this etching with slightly faded colors would never return, just as Grandfather Galmategin would never rise from his grave and speak.

Her eyes on the tusk, Emul felt she was being returned to her childhood, when she saw each blade of grass, each leaf and each pebble on the beach. Her piercing vision penetrated deep into the walrus tusk, calling forth thoughts, feelings, images and sounds from the past. And then all of a sudden the greatly intensified ray brought her back to the present and threw a different light on what had seemed so familiar and commonplace.

She carefully wrapped up the tusk and put it back in its place.

In the restaurant one day a man named Prokhorov, an Arctic weather forecaster, came up to her.



the SEA LION

"Your late grandfather promised to make me ten idols," he said to her in embarrassment. "Perhaps he finished them but did not have time to get them to me. I have already paid him for them. Would you mind looking for them?"

Prokhorov's smoothly shaven face, firm and rosy-cheeked, could not, try as it might, express pity, but remained happy, well-fed and smug.

"Yes, I will," Emul promised, her eyes on the ground.

At home she took out her grandfather's workbox and sorted the idols in it. Not one of them was finished. She picked up one, took out a chisel, and started chipping away at the walrus tusk. It was easy to carve a round belly, little legs sticking out beneath an overhanging stomach, and dangling breasts. But when Emul came to the face, her chisel faltered. She tried to re-create the familiar, standard image of the idol, but her hand, so confident only a few minutes ago, suddenly grew timid.

She laid aside the first idol and might never have returned to it if the weather forecaster had not spoken to her again. "Your grandfather was an honest, upright man," he said. "When I offered to pay him in advance, he refused, but I insisted. I shall soon be going on vacation, and I want to take gifts with me. I have bought embroidered slippers and a sealskin cap. The only things missing are some idols. They are popular now. Didn't he leave any? Please take another look."

"All right, I will," Emul promised.

This time she did not need to tell her hand what to do. She confidently wielded the chisel. The only effort she had to make was to keep in mind the smooth, smug face of the weather forecaster trying so hard to be sympathetic.

The rest of the idols were as much like the first one as so many peas. Toward the end Emul laid aside the chisel and used the drill to grind the idols with a whirling cutting tool.

Prokhorov was very pleased with the idols. He kept turning them in his hands and clicking his tongue in satisfaction.

"I was right to order the idols from your grandfather. What expressive little faces! You can see at once they were done by a true artist. Nothing primitive about them! It is, essentially, a thoroughly honest view of the world."

Emul did not grasp the weather forecaster's words. She was filled with happiness at the thought that she had preserved her grandfather's memory and paid his debt.

When Emul returned from work one day, she found her father standing in front of her grandfather's workbox holding the carved tusk. His face wore a new and strange expression.

"I'm afraid we won't get much for this," he said thoughtfully. "There is nothing special or outstanding about it, just life. Your grandfather hadn't much imagination. He could not keep up with the times. Others took up new subjects, but he kept carving animals and seal hunters. Others carved a bust of Gogol out of walrus tusk, while your Grandfather carved reindeer. Do you know what Kunnakai carved on a walrus tusk? You don't? He carved the new work pledges taken by the staff at the fur farm. That's the way people keep up with the times." Rochgyn shrugged his shoulders. "Perhaps this will do to present to someone who is retiring on pension. No one will give us much for it."

"Do you want to sell the tusk?" Emul asked.

"Yes," said her father. "Why should it lie in a drawer? Might get twenty rubles for it."

"Don't sell it, Father," Emul pleaded. "I'll make you some idols instead."

Her father was amused. "What do you want it for? You're too old to play with it."

"Please let me have it," Emul said in a low voice. "You can sell an idol for five rubles."

Her father was pleased. "Idols sell well," he agreed. "They're all the fashion. All right, I'll wait to sell the tusk."

Emul laid the tusk back in her grandfather's workbox and set to work. Within a few days she finished fifteen of Galmategin's half-completed idols. Rochgyn was delighted.

"Your idols are the best!" he told his daughter. "That's what people who know about such things say. They have intelligent faces."

Now the drill buzzed in Rochgyn's home in the evenings and white dust settled on his daughter's hair as she bent over her pieces of walrus tusk. The idols stood lined up on a small table, the bright electric light burnishing their polished bellies. After some time Emul discovered that making idols gave her pleasure. She enjoyed picking up a cold, dead tusk and animating it with her own warmth. The ivory retained the warmth for a long time. Some mornings, before going to the restaurant, she would pick up an unfinished idol and find it still warm from the night before. In each of the idols, their mouths stretching from ear to ear and their long ears dangling, Emul tried to embody someone's image.

Usually it was the image of the person who had ordered the idol, but Emul did it in such a way that only she could detect the face of a living person in the expression of the merry, complacent idol.

More and more orders came in. She barely had time to fill them and began to grow sick of idols.

Her father was pleased. Seated over a glass of wine, he would look at his daughter's bent head and say:

"You have inherited your grandfather's gifts. How strange! I am closer to him, yet I cannot make a thing out of ivory. I just was not given the talent!"

Emul listened in silence as she carved her evening's quota and then went to bed. The power generator in the village was turned off exactly at a quarter past twelve. Before the bulb in the room began to flicker as a sign it would soon be extinguished, Emul took out the tusk and once again studied the pictures on it.

With bated breath she gazed at the tender bluish shadows on the cream-colored polished ivory. Before her rose a picture of a beautiful world that she understood down to the last blade of grass and the last pebble on the beach. How much magic those walrus tusks possessed! How much invisible strength there was in those delicate lines filled with dyestuff!

The bulb flickered, and Emul hurriedly thrust the tusk under her pillow. She could feel it all night. Touching it when she woke up in the middle of the night, she thought the warmth of Grandfather's hands still remained in the depths of the ivory.

A wave of heat rose in her breast. She began to think about herself, wondering why she just lived from day to day without thought of the future. All her girl friends had their boy friends, or at least someone for whom they yearned. Each dreamed of changes in her life, of leaving the restaurant for something else. But Emul never thought about that, nor did she have a boy friend for whom she yearned. She treated all the fellows who showed an interest in her the same way. The young men wondered whom she preferred. Either they waited to find out or else soon gave up and turned to girls who knew what they wanted and could give a direct answer to the big question in life.

"You're a strange one," Emul's girl friends told her. Emul said nothing; she only smiled enigmatically. This was the way it had been until a short time ago, when Gennadi Barashev, the bearded young leader of a group of archeologists, showed up at the restaurant.

At dawn one fall morning Emul went down to the shore. Sometimes a keen eye could find fragments of colored whalebone among the varicolored, polished pebbles. After being in seawater a long time, tusks the walruses had lost changed color through and through. These fragments were especially precious. An idol carved from such ivory brought twice what an ordinary white ivory idol did. The crests of the waves shone in the darkness of the long morning, and the salty spray made her face tingle.

The pebbly beach was strewn with starfish, chards of sea kale, empty sea shells, crayfish and shrimp thrown up by the waves. Every once in a while Emul came across rusty tin cans with strange labels and would try to read them, sorry she had forgotten most of her schoolgirl English. She regretted having had so little education, but this was only from time to time, when she ran across an incomprehensible word in a book or some diners at the restaurant started a learned conversation. Words like paleolithic and neolithic fell freely from Gennadi Barashev's tongue. The word the archeologists used most frequently, though, was "problem," which Emul had fortunately heard often from the collective farm bookkeeper. The bookkeeper drank like a fish and liked to repeat with a weighty sigh: "The main problem on Monday is to take a hair of the dog that bit you."

The Academy of Sciences expedition was working on the riddle of the settlement of the American mainland. The men had arrived in early spring, spent a few days in the village, rented two whaleboats, hired several workers, and set out for an old settlement on the promontory, where no one had lived for many years. There they spent the summer in tents, dug up all the mounds with spades, and filled four huge cases and about a dozen smaller ones with their finds. People who came to the village preferred air travel, but the archeologists would not have fitted into a plane, to say nothing of a helicopter, and so had to wait for the ship that was bringing fresh supplies to the village.

They appeared in a noisy crowd long before the restaurant opened and noisily lounged about on the high porch, knocking impatiently on the locked door from time to time.

Emul reached a rocky precipice and stopped. To go farther was dangerous. A strong wave could pin you to the sheer wall of stone and discourage you forever from climbing out onto the pebbly spit that grew narrower and narrower until it finally vanished.

Emul turned back. She carried a handful of sweetish sea kale on which she nibbled meditatively. The sun was breaking through in a narrow red strip beneath dark, lowering clouds. The darkness was beginning to lift, and the crests of the high waves no longer shone. The engine at the electric station started up, lights went on in the windows of the wooden houses, and far away, where the village ended and the empty shore began, a red lantern, resembling an extinct star from a distance, flashed on in the tower of the wind indicator.

A stiff wind to the right and behind helped to hasten her steps, energetically pushing her steadily forward. Barashev and his comrades had a long wait ahead of them, she thought. The ship would not put in at their village in such weather. It would either sail past or unload at some point on the southern part of the peninsula, where the wind came from the shore.

As she reached the restaurant, other waitresses were already approaching, and dogs were circling the porch, waiting for the big can of leftovers to be put out.

"Find your valuable tusk?" the woman who managed the restaurant asked.

Emul shook her head and took off her spray-covered nylon raincoat on the porch. Nylon raincoats had appeared comparatively recently and were in great demand along the coast, where it was windy and damp all summer. She shook off the spray and entered the restaurant, already warm from the kitchen range heated earlier. Appetizing smells floated in from the kitchen.

The restaurant was due to open soon. Emul and the other waitresses wiped the plastic table tops, set out tumblers filled with paper napkins, checked to be sure all the tables had their plates of bread, and then sat down to breakfast at an end table near the window. As Emul ate her reindeer steak, she watched the village street emerge from the gray twilight. On the horizon, where the sun would rise, was a strip of clear sky. It was neither red nor scarlet but already daylight. Emul stopped eating and waited for the first ray of sunshine. The edge of light widened before her eyes. Again she marveled at how swiftly the sun rose at the beginning, slowing down more and more as it moved up from the horizon. Before she had time to finish her tea, the sun was completely out of the water, and its upper edge had reached the lower edge of the cloud that presaged an overcast, windy day.

The archeologists appeared fifteen minutes before opening time. The manager glanced out of the window.

"Let those diggers in," she said.

The archeologists arranged two tables side by side to be able to sit together. They greeted the waitresses with boisterous shouts.

"One helping of everything you have!" Barashev called out.

They meant each archeologist was to be served one portion of seal liver, one reindeer stew, a cup of coffee with condensed milk, and a heaping plate of pancakes. The young scientists had enviable appetites. Although they talked constantly while they ate, the girls barely managed to keep them served.

Smoking was not allowed in the restaurant so the men did not linger after drinking their coffee but trooped out onto the porch where they stood another half hour enjoying their first cigarette of the morning.

Today, however, Barashev remained behind. He sidled up to Emul.

"I've been wanting to make your acquaintance for a long time," he told her.

Emul almost dropped the glass of hot tea she was taking over to the bookkeeper's table. She paused, not knowing what to say.

"I know your name," Barashev went on.

In the restaurant regular patrons called her Emma, the name given her by the teacher at school.

"My name is Gennadi. Gennadi Barashev." He stretched out his hand to the embarrassed girl. "Serve the tea," he said gently. "Then I have something I want to say to you."

Emul flew across the room to the table where the bookkeeper sat and returned at once.

"I hear you are a good ivory carver," Gennadi said in a tone that made Emul turn aside in confusion. "It's true!" he went on emphatically. "I've seen some of your idols. They're masterpieces. They remind me of the ancient ivory masks we sometimes find in Neolithic burial mounds. I have an enormous request to make of you. Could you carve a dozen idols for me? It will be something to remind me of Chukotka and of you." Barashev bowed politely. "Of course I should prefer something more typical of the art of ivory carving, but there isn't time. So I beg you, Emma, to carve me something that will make me want to come back again. Will you?"

He smiled and looked affectionately into her eyes.

"Naturally," he said in a lower voice, "I want to pay you for your efforts."

That day was the longest in Emul's life. She could not wait for the restaurant to close so that she could run home and get down to work. She had a fragment of dark tusk found the year before. She knew what she would carve from it—something that would make Gennadi Barashev want to return to Chukotka.

She picked up the fragment of tusk polished by the sea waves and looked at it intently. The ivory was almost black, barely perceptibly shot with brown. Faint changes in tone could be detected in the depths. The fragment was large, almost half the size of a big walrus tusk. The ivory was thick and strong. Emul turned it round and round for a long time until it grew as warm as the palms of her hands that excitement had heated.

What should she carve that would stir a person and remind him of what was dearest and closest to his heart? Emul turned over in her mind the impressions of her short life. Suddenly something illuminated her memory like a ray of sunshine.

One day—she could not remember the year—Grandfather Galmategin had taken her out in his small, light kayak. They sailed toward a big rock that stood by itself. Jellyfish hung in the transparent water, and birds glanced curiously at the little leather boat, but Emul could not tear her eyes away from the transparent bottom of the fragile craft. The thought of how deep it was under that thin leather made her heart beat fast and sent a sweet syrup coursing through her knees instead of warm blood.

The slanting rays of the low sun spread across the surface of the sea, and the birds were frightened by their own great shadows. Galmategin paddled in concentrated silence. Water dripped from the paddles with a tinkling sound, and the nose of the kayak cut the surface with a murmur.

With an effort Emul turned from staring at the water as it changed color beneath the thin leather bottom and stared ahead to where the rock, with patches of green moss and white smears of bird droppings, stood bathed in the sun's rays. Suddenly she started. On an upper ledge, standing upright on short legs, was an amazingly beautiful animal. Its burnished coat, looking as though it had been lacquered, gleamed in the sun. But the most beautiful part was the curve of its body. It was such a perfect line, such a magically pure line, that Emul could not contain herself.

"How beautiful!" she exclaimed.

Her grandfather stopped rowing and turned around.

"It's a sea lion!" he said. "A rare visitor to these parts."

The sea lion moved its head and suddenly launched itself into the air. The resilient, elongated body flashed by in such a perfect arc that Emul moaned in ecstasy.

"Yes, it is beautiful," her grandfather agreed, watching the sea lion plunge into the water and vanish into the depths.

Whenever Emul recalled the sea lion's dive, she grew excited. Now, as she held the walrus tusk she had warmed in her hands, she suddenly felt that if only she could reproduce that line of the body, that purity and expressiveness, it would be something that would always remind Gennadi Barashev of the beautiful land of Chukotka.

Emul settled herself under the electric light and picked up her chisel. She was unaware of her mother and father. She ate her supper mechanically and again returned to the fragment of ivory. All she could think of was that day with her grandfather and the clean lines of the animal's body.

Suddenly the bulb flickered and went out. Emul sighed, sorry that she had no candles, and went to bed. As her eyelids dropped she imagined herself presenting the sea lion on the rock to Gennadi Barashev and saw the young man flush with surprise and happiness. Perhaps he really would return to Chukotka and perhaps, perhaps, they would be together some day. The thought made Emul feel awkward and ashamed of herself, and she covered her blushing face with a corner of the sheet as though afraid someone might see her in the pitch darkness.

The next day Emul eagerly set off for the restaurant. She did not think how pleasant it would be to see Gennadi Barashev again, see his smile and hear his voice. She simply felt good inside.

"Is it coming along all right?" he asked gaily, winking at her. The girl nodded.

That day several members of Barashev's expedition asked Emul to carve them idols, but she said she already had an order.

For the first time in her life Emul prayed that the wind would continue driving waves up against the shore. She feared she would not have time to carve her sea lion and present it to Gennadi Barashev in memory of Chukotka.

When her eyes grew tired and her hands could no longer hold the chisel, Emul took out Grandfather's tusk and examined the carving. Again and again she pondered over the magic of those simple lines. Excitement swept over her, her breast felt tight, and she had to wait a long time before her vision cleared and she could continue carving.

The sea lion began to take shape. The rock had long since been finished, and if you looked closely you could see rough moss on its sides.

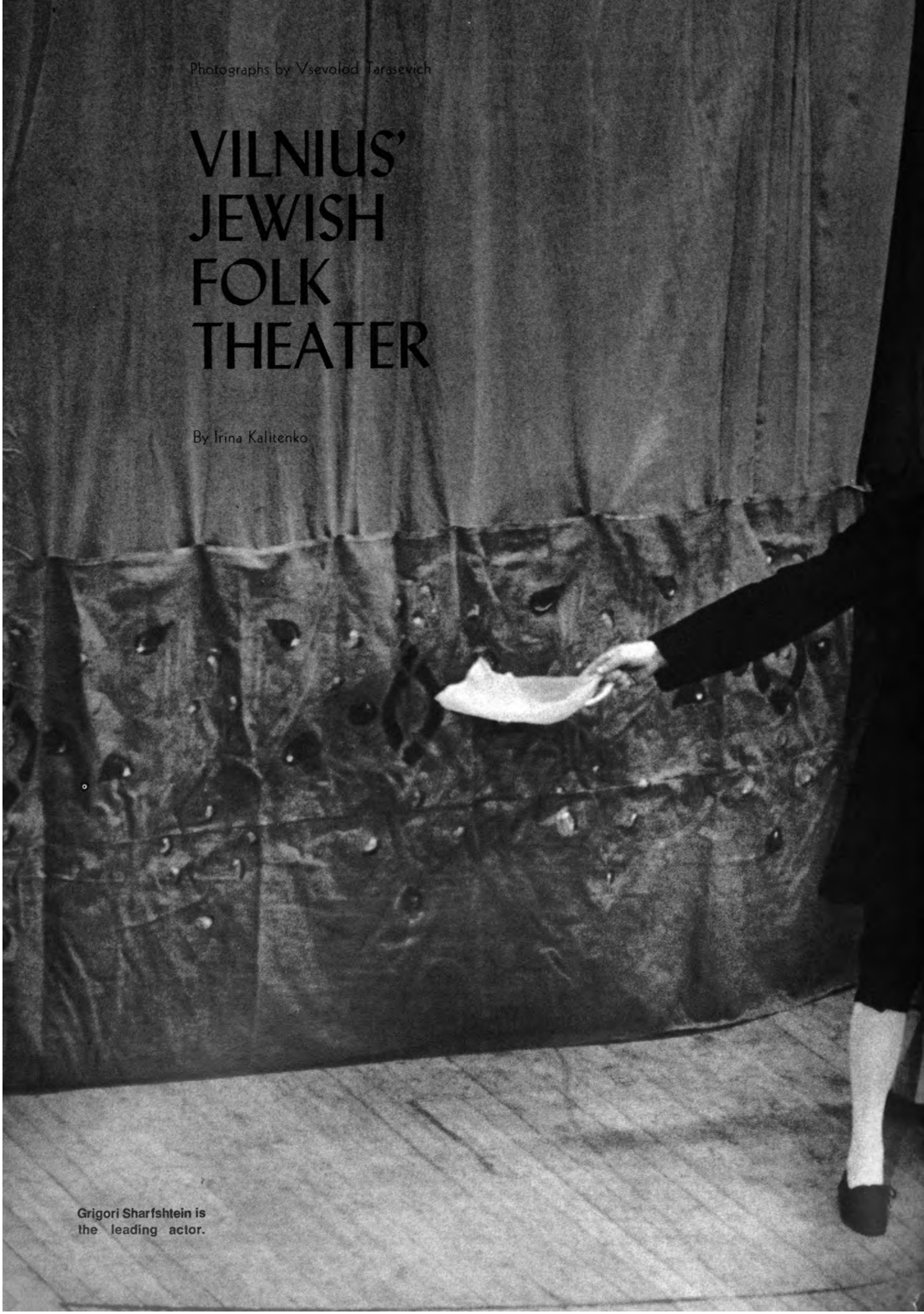
Emul's father came up behind her and stood silently for a long time, watching her work. Emul did not like to have anyone do that,

Continued on page 58

Photographs by Vsevolod Tarasevich

VILNIUS' JEWISH FOLK THEATER

By Irina Kalitenko



Grigori Sharfshtein is the leading actor.

Despite its youth, the Jewish People's Theater in Vilnius has its own drama group, orchestra, chorus and ballet company. The ensemble makes frequent tours.







LAST YEAR, for the first time since the war, the Jewish People's Chorus resounded among the pine woods of Vilnius' Vignis Park during the national folk song festival. This is the Lithuanians' favorite musical event: People come from every corner of the republic, and it's not easy to decide whether spectators outnumber participants. It's a fact, though, that 30,000 singers, musicians and dancers participated this year. Performing groups ranged from duets and quintets to a chorus of thousands of voices. Broadcast by radio and television, the songs floated, birdlike, far beyond the park, till it seemed that the whole republic was singing.

And in this many-tongued chorus of Lithuania sounded the melodies of the Jewish People's Chorus. Its 90 members—mainly students and schoolchildren—sang freely, gaily, warmly.

Nearly three decades ago the stones of ancient Vilnius echoed a different kind of concert.

It was in September 1941, during the German occupation. The Nazis decided to amuse themselves. Gathering musicians and singers from the ghetto, they made them give an improvised concert. The performers didn't know they were singing and playing for the last time: After the concert, all were shot. And the Nazis announced to the world: "Vilnius will never again hear Jewish songs."

I first learned about the Jewish People's Theater from the playbills posted all over Vilnius. It includes a drama theater and studio, a Jewish folk chorus and folk instrument orchestra. The headquarters at the Trade Union Palace of Culture was not difficult to find. Perched on a high hill, it strikes your eye as soon as you enter the city.

In the evening, illuminated by the rays of searchlights, the trade union building looks particularly beautiful. The Jewish People's Theater is situated in one wing.

I walked into the drama studio while members were getting ready for a rehearsal. Some flushed girls came running in. Two of them sat down quickly and in a loud whisper, like students before an exam, began to recite their roles.

"Have you been attending the studio long?" I asked, apologizing for the interruption.

"No, only three months," Tanya Gershunaine told me. She is a tenth-grade pupil at School No. 22 in Vilnius. "At first we just studied the Yiddish language. Nearly all of us know Yiddish," she explained. "We speak it at home and understand it well. But we don't know it well enough to perform on the stage, to perform in classical repertory plays. We're continuing to study Yiddish now with a teacher twice a week. And we're attending courses in the history of the theater and in acting."

Was it difficult to be admitted to the studio?

"Oh, yes. We had to pass competitive exams just like at an institute. Only about a third of the applicants have been admitted."

Is it interesting to study here?

"Very interesting, indeed. We've already been given small roles, and we participate in performances. For instance, I'm in the play The Musician. *Of course it's a very small part, but I want to do it well."*

Tanya's friend, Dina Spitolnikova, is a third-year student at the Teachers College.

Why did she decide to join the Jewish Theater studio?

"I've always been interested in the language and culture of my ancestors and, besides, I've been dreaming of the stage for a long time. Here both my interests have met."

The artistic director of the theater, Honored Art Worker of the Lithuanian SSR Leonid Lurie, arrived a little later. It is largely to him, to his energy that the Jewish People's Theater owes its 13-year existence and its growth to a company of 200.

Purposeful, strong-willed and erudite, Lurie has devoted his whole life to the stage. At 19 he entered the studio of the Byelorussian Jewish Theater. After finishing his training there, he worked at the Jewish theaters in Vitebsk and Minsk and later went to Moscow to study at the State Institute of Theatrical Arts. He received a producer's diploma from the institute in 1940 and then worked in Gorky, as chief producer at the Young Spectators' Theater in Moscow, and in Pskov, where he was chief producer at the Drama Theater. There Lurie staged the first postwar production of The Bath *by the Soviet poet Vladimir Mayakovsky. In 1956 he was invited to work at*









A scene from *Freilichs* by Z. Sneyer.

For 13 years the theater has played to full houses.

the Vilnius Drama Theater. Since then, he has lived in Lithuania.

While he was very happy at the Drama Theater, Lurie had long dreamed of staging plays in the Yiddish language. And then, together with Grigori Sharfshtein, Mark Moizes and Isaak Tsesarkas, he undertook the founding of the Vilnius Jewish Theater.

The first play staged by the theater was Freilichs *by Z. Sneyer.*

"I dedicated it to my teacher, the wonderful actor and producer Solomon Mikhoels, with whom I had worked at the Moscow Jewish Theater," Lurie says. "It was a great success. When, in the very first year of our theater's existence, we brought the play to Leningrad, we had to present two performances a day, so large was the audience. And we always played to full houses."

The Vilnius Jewish Theater was a success from the beginning. Soon it was named a People's Theater—a title merited by only 13 of the 50 amateur companies in Lithuania. Today it is known throughout our country and has a repertory of 10 classical plays. In 1966, in commemoration of the 150th anniversary of the birth of Shalom Aleichem, the theater staged Tevye the Milkman, Roaming Stars, The Doctor *and* Menshen. *The plays by Mendele Moikher-Sforim and Isaac Peretz are quite a hit. Other old favorites are the comedies* Hershele Ostropole *and* The Wise Men of Khelm *by Mikhail Gershenzon.*

The theater also stages plays by contemporary Jewish, Russian, Ukrainian and other authors. One of the latest performances was Never Say You're Going on Your Last Journey, *which Lurie wrote in collaboration with the journalist Leib Shaus. This is a play about the war, about the life of a Jewish family in the ghetto.*

"It seems there's no end to our plans," Lurie says, smiling. "We're now organizing a Jewish song and dance ensemble. We already have an orchestra with 34 members. It's led by a professional musician, the violinist Khatskl Meyerovich.

"And we have a chorus, headed by Aliza Blekharovich. Almost all of Aliza's family works at the theater. Her father, Saul Blekharovich, is a composer. He writes the music for the theater. Her brother plays in the theater's orchestra.

"We also have a ballet company.

"After each performance we pay the Trade Union Palace of Culture 20 per cent of our box-office take, for use of the premises and costumes. The remaining 80 per cent goes to cover our expenses, including the producers' and studio teachers' salaries."

The theater often goes on tour, Lurie told me—to Leningrad, Minsk, Riga, Tallinn, Kiev. "And," he says, "we've established friendly ties with the Kishinev Jewish Theater. Right now we're getting ready to leave for Kishinev again. The whole cast is going—200 persons. We're taking four concert programs and three plays. So you see our schedule is more than full. Besides, I'm a teacher at the Theatrical Institute. I must graduate two more classes and then I intend to devote myself entirely to the theater."





The folk dance group at a rehearsal.

A company of amateurs: All you need is talent.



Vilnius citizens make each show a holiday.



LITHUANIAN COMPUTERS

Sigma is the name of the Soviet Union's first merger of plants and design bureaus in the field of computer engineering. Its birthplace is Vilnius, capital of the Lithuanian Republic. The Ruta-110 computer is one of the brain children of this merger. The machine was displayed at the Automation-69 international exhibition in Moscow's Sokolniki Park.

This unique computer complex is made up of 14 different units. They operate by a single construction design and can produce any combination to handle industrial research and programming problems.

A BRIDGE OVER THE TATAR STRAIT

Work has started in Kholmsk, Sakhalin, on a suspended bridge and a dam, the most vital parts of the ferry crossing over the Tatar Strait. The trains will use these installations when they transfer from railroad ferries to the shore.

The project is being built with an eye for drifting ice, hurricanes and typhoons. Concrete blocks, weighing a hundred tons each, will be used for the pillars of the bridge. Despite frequent spells of stormy weather a team of builders is meeting its targets.

The crossing, serviced by ice-breaker ferries, will operate the year round.

A VOLCANO AWAKENS

For the second time in the past five years the Airantekyan, a powerful volcano of the Alyat range, has become active. It is 45 miles south of Baku, the capital of Azerbaijan.

Viewers saw a black cloud rising skyward and then fire spurting 130 feet high.

Akhad Yakubov, member of the Academy of Sciences of the Azerbaijan Republic, says the awakening volcano testifies that the area is rich in oil and gas.

LIKE IN A FAIRYTALE

A huge 800-year-old platan tree grows in the settlement of Sairab in Uzbekistan.

The hollow of the tree is so spacious that in prerevolutionary times it housed a school. In 1920 the Sairab local Soviet held its sessions there. Later the hollow provided room for the library of a cavalry regiment and a store.



TIGER CENSUS

Nine thousand questionnaires have been sent to hunters in the most remote taiga districts of the Maritime and Khabarovsk territories in the Far East. The purpose is to obtain data for a map of the Ussuri tiger population, to be used by teams making a census of that rare animal. The last census of Far Eastern tigers was 10 years ago.

The Ussuri tigers are the biggest in the world. They are handsome animals, very strong. Hunting has reduced their number drastically. But now that hunting is strictly limited, with special permission required, the tiger population is growing.



CRABS RESETTLED

The colony of Pacific crabs in the Barents Sea in the Arctic has grown by another 900, caught in the Sea of Japan.

Researchers of the Central Acclimatization Station of the Polar Institute shipped them north in special railroad cars. The crabs stood the long haul well. Skindivers observed their reactions for several minutes after they were placed in the new habitat.



VOLCANIC ISLAND BUILDERS

The narrow strip of the Kurile Islands is one of the few spots on the globe where the fiery interior of the Earth jets out continually through volcanoes. There are 70 volcanoes on the islands. The eruption of 31 of them has been noted in historical records.

The volcanoes eject a molten substance which differs in composition from the upper crust of the planet. By pumping it to the surface, they thicken the Earth's crust.

Yevgeni Markhinin, of the Volcanology Institute of the USSR Academy of Sciences, researched the role volcanoes played in extruding rock from the upper mantle. Estimates show that in the 33 years between 1930 and 1963 eight erupting volcanoes on the Kuriles pumped over six-tenths of a cubic mile of rock, mainly of the basalt type, from the upper mantle of the Earth. Markhinin calculated the average quantity of rock that erupted annually and multiplied it by 83 million years. He concluded that the present crust of the Kurile Islands originated during that period from volcanic activity. In other words, the thin oceanic crust of the area was transformed into a continental crust.

MOUNTAINS GROW

Scientists have found that the mountains of East Siberia still have another 330 feet to grow. In one year they rise by fifteen-hundredths to twenty-three-hundredths of an inch, dozens of times as much as they did several million years ago. Growth will continue until an equilibrium of the Earth's crust is achieved. Then the process of disintegration will set in again.

AIR-PROPELLED SLED

Until very recently Nikolai Kamov was a famous name only in helicopter design. His newest creations are earthbound. The bureau he heads has built an original air-propelled sled for individual use. The vehicle has been dubbed the Breeze. It weighs less than the Soviet midget car Zaporozhets — only 1,100 pounds. The Breeze has a two-seat cabin for a driver and passenger.

THE MARIA DIAMOND

A 106-carat diamond has been found in Yakutia. This giant stone, the largest in the history of our diamond mining, was named Maria. Large nuggets and precious stones are usually named after historical figures or important events, but this one was named after Maria Konenkina, a surveyor. When Maria discovered the giant diamond, the staff decided to flout tradition and honor her.



SIX-FOOT PERCH

Newest additions to the Ichthyology Museum of the Pacific Fishing and Oceanography Institute in Vladivostok are spearfish, sea perch and bream.

Spearfish look like arrows; they belong to the swordfish family and measure six feet in length. One of the perches is also nearly six feet long; it was caught in the eastern Pacific. A bream, caught in the Indian Ocean, is almost as big.



FOR HUNTING AND FISHING

Talanka Bay on Lake Baikal will soon be luring hunting and fishing enthusiasts. The Council of Ministers of the Buryat Autonomous Republic has set up a hundred-thousand-acre preserve for hunters and fishermen there. The waters open for fishing will include part of Lake Baikal, the Khaim River, the Kiku River, and adjacent lakes.



BIRCHES IN SAND

Can birch trees grow on san hills, open to the sun an wind? Twelve years ago forestr experts in Kazakhstan chose sand areas rich in ground water an planted young pines, poplars, elm and birches between the dunes. C these trees, they discovered, th ones that thrived best were thos guests from Russian woods an forests, the birches.

A DIAMOND "IRON"

The surfaces of metal parts can not be worked smooth enoug by a cutter. They must be groun and polished. These are time-con suming operations, done by costl machine tools whose efficiency i rather low.

A machine-building plant i Voronezh, Central Russia, chose a different method: Irregularities o the metal are ironed, as though i were linen. A diamond hemispher fixed in a special holder serves a the "iron." The gadget is presse to the metal, the lathe is switched on, and in a matter of minutes the part is as smooth as a mirror. O a scale of 12, the work is 2- grades finer than before. In addi tion, the diamond "iron" strength ens the surface as it polishes.

RUSSIAN DRESS ON POSTCARDS

A series of cards depicting th folk costumes of 12 old prov inces of Russia is off the press. I was published by the Sputnik Bu reau of International Youth Tour ism. The cards, in water color, were done by young painter Nina Vino gradova. The colorful patterns o northern dress go well with the natural background: the dramatic interplay of snow colors, the ten derness of northern spring, opaque blue sky, the gold of the ripe rye A girl with a spangled and beaded headdress adorned with river pearls fits the setting.



THERE WAS A WEDDING AND HERE'S THE WINE

All sorts of treasures have been unearthed near the ancient town of Solikamsk in the Urals—Persian ornamented silver dishes, engraved copper pots, goblets. Now the inventory has been expanded by a bottle of good old Russian wine. It was found six feet deep by an excavator operator, Victor Maslennikov. The scoop brought up an iron-bound keg, which held a bottle of wine and 2,691 copper coins dating back to the turn of the century. The keg was probably buried during a wedding celebration; a text found inside was to be read at the golden jubilee of the happy couple.

The bottle is inscribed: Sinyushin & Smorodinov, Moscow. Unfortunately local tasters could not determine the brand of the wine nor its quality. This old gift of Bacchus will be forwarded to one of the winemaking research institutes.

WOODS REPLENISHED

The woods of Armenia are now inhabited by hundreds of animals from the Far East, which is particularly rich in fauna. They came from the banks of the Amur and the Ussuri by rail.

Armenian experts have worked out a master plan for renewing the local animal population. Their studies indicate that Far Eastern deer, raccoon dogs, wild boars and nutrias acclimatize well. Rare water fowl and fish, like the *sig* and river perch, take easily to Armenia's many lakes.

ROSES IN THE DESERT

Fragrant roses are in full bloom on the arid Mangyshlak Peninsula, in the Kyzyl-Kum Desert, and in the neighboring barren steppes of the Chimkent and Kzyl-Orda regions. Rose plantations have also appeared in the Altai area, in the virgin lands and along the northern shore of Lake Balkhash.

Experts of the Central Botanical Gardens of the Kazakh Academy of Sciences evolved roses that are resistant to the area's scorching sun. The Yaroslavna rose is valued particularly by selectionists. In summer each bush of the plant gives 50-70 beautiful buds. The flowers blossom slowly and keep their color for quite a long time.

THOUSAND-TON CATAMARAN

The *Ignatov Brothers* is the name of a catamaran with a displacement of 1,000 tons, assembled at the Gorky shipyards. This vessel inaugurates a series of Soviet cargo ships with two parallel hulls.

The catamaran can do 17 miles an hour. It is now undergoing tests in Gorky and Saratov.



PATRIARCH OF UIGUR SINGERS

Patriarch Ilakhun Kokkoz of Kazakhstan, a 103-year-old Uigur bard, has an astounding musical memory. At his birthday party this gray-bearded venerable performed by heart the most difficult variations of the famous epic *Twelve Mukams*, dating back to the middle of the first millennium and handed down from generation to generation.

There are only a few persons in the world who can perform all 12 *mukams* by heart. Each includes instrumental music, choral and solo singing, and dances, built around a common theme. Starting with a vocal solo accompanied by the *satta*, a bowed instrument with 13 strings, the epic takes almost 24 hours to perform.



WHITE NUTRIAS

When the workers of the Termez nutria farm in Uzbekistan learned that the pelts of colored nutrias are much in demand at international fur auctions, they decided to raise these types. A lot of work was involved, but by the beginning of last May colored nutrias made up 42 per cent of the entire number on the farm. Recently 20 snow-white nutrias were born.



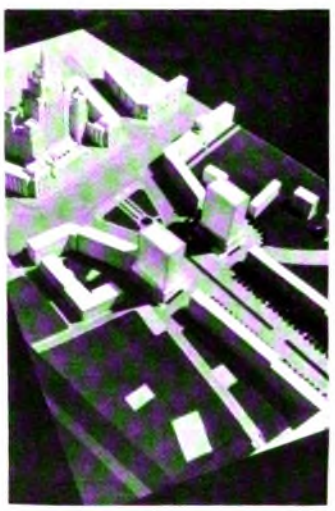
FIREFIGHTING HOVERCRAFT

Seconds count when a fire has to to be put out. On dry land firemen move fast; the engines can drive at breakneck speed through a city or town. On water the job is more complicated: Firefighting vessels are slow.

Recently a new hovercraft was tested on the Volga. The fireboat *Rocket* can virtually dart to the conflagration. It goes into the very center of the inferno, jetting 58 gallons of water and 158 gallons of foam a second.

PECHORA SALMON

The Pechora, a northern river, is famous for its salmon, the delicious red fish prized by knowledgeable diners in many European countries. This fish accounts for a notable part of Soviet export trade. When the fish comes in from the sea for spawning, the Pechora is closed off by nets with tricky traps that "sift" the river. Fishing in the Pechora is done under strict supervision.



FOR GUESTS OF THE CAPITAL

Smolensk Square in downtown Moscow will soon have a new look. Two Intourist skyscraper hotels are getting their finishing touches. The symmetrical 21-story towers will be decorated with aluminum, marble and gold-tinted glass. Each hotel will accommodate 830 guests.

A PIANIST FROM ST. PETERSBURG

He was born in St. Petersburg (the old name of Leningrad). He is only 26 years old. Possible?

Yes, Vladimir Khokhlov is really 26. And he was born in St. Petersburg. Not the one on the Neva, but St. Petersburg, Florida, USA.

His parents worked in the United States during World War II and then returned to the Soviet Union.

After graduating from the Leningrad Conservatory, Vladimir became a conductor. He was appointed to the Karelian State Philharmonic Society, in the Karelian Autonomous Republic.

Recently the Philharmonic Society featured his new work, a literary and musical composition titled *Sonata Pathétique*. Including music by Beethoven, Schubert, Tchaikovsky, Rachmaninoff, Glière and the Karelian composer Sinisalo, it was conducted by Khokhlov.



PRIZE-WINNING BUSES

Soviet buses did well at the Nineteenth International Bus Exhibition in Nice and at the seventeenth French international auto rally on the Riviera.

The Soviet buses and their drivers brought home six prizes, including the Grand Prix with a bronze medal, won by the Ukraine-Lux-69. This was the highest award ever given to a foreign-made bus in Nice.

A Grand Prix also went to a Pavlovsk bus, the PAZ-Tourist. Another bus, the Ukraine-67, won a Goblet of Distinction.

The Soviet team got its fourth Grand Prix for an excellent performance of all three vehicles in the rally. Another two awards went to the drivers of the Ukraine-Lux-69 and the Ukraine-67 buses for their skill under tricky conditions.

PRIMEVAL PRESERVE

A 150,000-acre area south of the Pripet River, in Polesye, Byelorussia, has been declared a natural preserve. Located between the Stviga River and the Ubort River, tributaries of the Pripet, the preserve abounds in all kinds of flora typical of the region. Its rivers and lakes are rich in fish.



PORCELAIN CRAFTSMEN

The porcelain industry in the town of Verbilki, outside the ancient Russian city of Dmitrov near Moscow, is over 200 years old. The factory, built by Francis Gardner of England, was one of the first in Russia. Peasants from nearby villages were its earliest grinders, molders and designers.

The realistic traditions of china artists of the past century are carefully preserved and developed by the factory's contemporary designers.

Its output is now 33 million pieces a year. Verbilki chinaware, known far and wide, is bought by 10 countries.

RECORD-SETTING PLANE

There are few passenger planes which have gotten as much attention in the press as the IL-18 turboprop. Since it went into operation 10 years ago, it has been setting precedents—on its flights to the Antarctic and the North Pole, and its inauguration of new international routes, for example.

Ten years is a good part of the life of a plane, enough to learn its potential. The IL-18, however, seems to be an exception; it continues to be the focus of world attention.

By 1969 this plane had set 22 global and national records. Recently a female crew under Lyubov Ulanova won the twenty-third: She flew the IL-18 to an altitude of 42,650 feet, a record for turboprops. It means that the IL-18 pushed up its ceiling half as high again: It used to fly at a height of 29,530 feet. This is the fifth record won by Ulanova and her crew for the IL-18.



By Yakov Shnaider
Photographs By Israel Ozersky

ALEXANDER KO





In 1918 the Ilyich (formerly Michelson) Factory was the scene of a terrorist's attempt on the life of Vladimir Lenin. A granite block marks the spot. Today a leading producer of electrical equipment, the factory draws frequently on the suggestions of its people's control groups—for production ideas, and solutions to trade union complaints. Alexander Kozhemyakin, head of the group in his shop, suggested a repainting job recently, then conferred with a young woman painter on the most suitable color from the viewpoint of industrial esthetics.

HEMYAKIN, A COMMUNIST





WORKER ALEXANDER KOZHEMYAKIN, A COMMUNIST

IF YOU'RE looking for a model worker to write an article about, you picked the wrong person," Alexander Kozhemyakin told me. "For instance, I've failed my entrance exams at the university three times. I wanted to be a philosopher, but I guess I didn't have what it takes."

I said I wasn't looking for model workers and that I would just tag along after him if that was all right. Kozhemyakin is a fitter in a large Moscow factory, in the shop which assembles mobile power stations for farms. He was headed for a meeting of his shop's party bureau. A proposal of the people's control group was under discussion; this is one of the voluntary groups of workers which help administer Soviet factories, collective farms and institutions. At the meeting were four Communists, including Kozhemyakin, and one nonparty man. The question discussed was the replacement of the old machine testing station; it was slowing down operations, and there was a delay in getting the new station working. The control group wanted to know why.

Kozhemyakin listened to all the others and then asked for the floor. He made a short and apparently very technical speech, analyzing the proposal in minute detail. Complimented afterward, he tried to mask his pleasure with a curt tone:

"Incidentally, when do you intend to look over my idea for trolleys to transport the blocks? You seem to be taking a long time getting around to it."

The head of the shop countered:

"Another idea, and a better one, I think, has been submitted."

"I'm not insisting on mine," said Kozhemyakin, ruffled. "Take the other one—I don't mind—but do something. We still have to carry the heavy blocks!"

"But then there will be two people claiming credit. Do you agree to share the bonus?"

"What's the difference, one or five? The important thing is what's best for everybody concerned. Labor productivity is going down because the men get tired."

We left the meeting before it ended because Kozhemyakin, a deputy of the Moscow Soviet, had to meet with his constituents. As a city council member he helps to draft local laws and to check on whether they are carried out properly.

Half joking, I said something about his being a specialist in production checkups. He answered seriously:

"Without checkups those people who cover their neglect and incompetence with all kinds of talk would ride high. For instance, an official functions badly, buries himself in paper work, and because of him people rail at Soviet power."

"You seem to have more than enough to keep you busy, what with a full-time job and your work as deputy."

"A little too much. I asked my constituents not to nominate me for the next term because I want to study. I didn't expect to fail the entrance exams."

Taking a breath, he continued:

"Well, I'll have another try. I'll apply to the technical institute this time; it's at the factory. One can be a philosopher with an engineer's training, too. I suppose," he smiled, "the factory is my major interest, after all."

* * *

As his biographical sketch, issued at election time, says, "Kozhemyakin's entire life is bound up with the factory."

He comes from a small village. During the occupation the Hitlerites shot his father, and his mother was left with six children. Three of them died of illness, one after another. A fourth, already grown, was killed in an accident on a construction site. Only two are left, Pyotr and Alexander.

The family moved to Moscow. On finishing the seventh grade in 1954, Alexander wanted to enter a technical school, but his friends dissuaded him: "Let's go to the factory. You'll learn a trade, become independent and support your mother,too.You're no longer a child; you can't be a dependent all your life."

This is how Alexander landed at the factory's vocational school. Two years later, after graduating, he started as a lathe operator in the shop. He has been working there ever since, with a break for army service. When he returned, he did not recognize the shop. Everything was different, everything was new, from the equipment to the items produced. He liked his new specialty of fitter and assembler. Of course he had to learn the new skills from the beginning. But now you won't find a better fitter at the factory.

A few years ago Kozhemyakin made two trips with youth teams to the virgin lands.

Kozhemyakin's closest friends, Edward Bolshakov (center) and Vladimir Kosov, are both engineers. But Kozhemyakin is not at all envious. "Does the diploma matter that much?" he asks. "Everything in life is relative." Nevertheless, he took his entrance exams this year at the factory's technical institute. His hoped-for major: engineering.

There are a good many meetings in Kozhemyakin's life, and some cut into his dating time with his fiancée Alla. He says her tact is a good influence—she has never told him, "It's your work or me."



He worked on construction sites, in the fields, invented things, taught others and studied too. He did this voluntarily, without direct financial return. He simply felt the need to help out, use his energy productively. A restless man.

* * *

The factory has its own printed newspaper, *Ilyichovets*. Picking up a file, I saw a number of Kozhemyakin's articles, which appeared in his column, "Factory Journalist." I wondered whether journalism was a hobby for him, like his collection of picture postcards and albums of paintings. Showing me his good-sized personal library and a number of albums with reproductions of paintings, he said:

"I like art. I go to museums and exhibitions. But that isn't always possible. When I come home tired from work and pick up an album, I relax right away."

Journalism is not recreation for Alexander, I decided, simply another manifestation of his energy. The questions he raises are important. An article in his column, for example, started a discussion on what a foreman should be like. The paper received dozens of reactions from readers. It sometimes happens, they recognized, that a foreman knuckles under to management and loses his independence. But he is closer to the workers than anybody in management, and if he relinquishes authority, the work suffers. The article by this productively restless man encouraged foremen to be more than figureheads.

THE DECISIVE GAME

Continued from page 17

that up to the sixteenth move the given game had repeated one of Grandmaster Bruno Parma's early encounters.

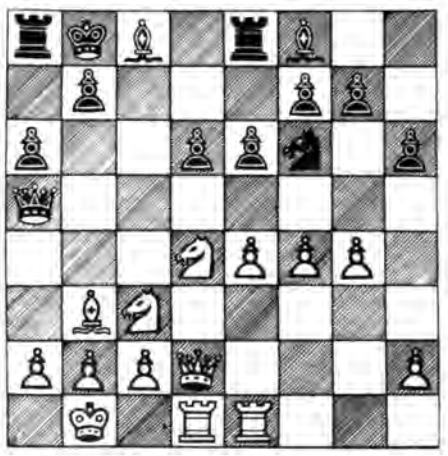
9. BxKt, KtxB 11. R(KR)-K1
10. O-O-O, P-K3

White enjoys a noticeable advantage in deployment, whereas Black has to be most careful to avoid landing in a critical position. The move I had in mind was 11. . . . P-QKt4. The variation of 12. B-QKt3, P-QKt5; 13. Kt-Q5, PxKt; 14. Kt-QB6, Q-QB4; 15. PxPch, K-Q2 did not seem so convincing to me—just the same as 12. B-Q5, PxB; 13. Kt-QB6, Q-QKt3; 14. PxPch, K-Q2.

In case of 11. . . . P-QKt4, I intended to continue with 12. P-K5, where White would be able to build up a strong attack following 12. . . . PxB; 13. PxKt, PxP; 14. Q-K2. In the event of 12. . . . PxP; 13. Kt(Q)xP, White would enjoy the advantage of offensive operations.

11. . . . B-K2 14. K-QKt1, B-KB1
12. P-KB4, 0-0 15. P-KKt4!
13. B-QKt3, R-K1

White's position is so strong that he can permit himself to indulge in sharp play. A stereotyped move of 15. P-K5 would also be quite dangerous for Black, and yet I chose 15. P-KKt4, which I saw as a more vigorous continuation than 15. P-K5. With his Pawn sacrifice, White opens the KKt file, with the subsequent use of his Rooks for the decisive advance.



15. . . . KtxP(KKt)

The threat of 16. P-KKt5 is most unpleasant, and still Black's best chance is to respond with vigorous play by means of 15. . . . P-K4. However, Petrosyan, as a matter of principle, avoids making moves that would weaken his position. Meanwhile, following the capture of the Pawn on KKt4, White has no concrete menacing replies.

16. Q-KKt2

I pondered over this move for 20 minutes and was duly scolded by my second, Grandmaster Igor Bondarevsky. Usually, when you make a sacrifice, you know exactly what you must do afterward. But my doubts arose after the reply of 15. . . . KtxP(KKt). What happened was that I began wondering what continuation to choose: 16. Q-KKt2 or R-KKt1. I first planned to play 16. R-KKt1, where, in the event of 16. . . . Kt-KB3, a reply of 17. P-KB5 would give White a strong attack. However, I rejected 16. R-KKt1 because I disliked a reply of 16. . . . Q-KR4, after which 17. Q-KKt2 would be bad because of 17. . . . Kt-K6.

16. . . . Kt-KB3

16. . . . Q-KR4 is not so good now owing to 17. R-Q3. It is wrong, for instance, to play 17. . . . P-K4, in view of 18. R-KR3, Kt-K6; 19. R(1)xKt, and so on.

17. R-KKt1!

This is the best move in the game, showing once again Black's helplessness in this situation. White calmly improves his position and gets ready to move his Rook, when the occasion arises, from Q1 to KKt3.

17. . . . B-Q2 18. P-KB5, K-KR1

Black is in a difficult position. The only chance to extricate himself is by looking for threatening possibilities. Such replies as 18. . . . R(QR)-QB1 or 18. . . . PxP would be far more unpleasant for me than that modest reply of 18. . . . K-KR1.

But one must take into account the already great possibility of making an error. Both players were worn out from seven weeks of struggle. No wonder both Petrosyan and I had spent almost two hours of our playing time on the first 17 moves of this game.

19. R(Q1)-KB1, Q-Q1

This reply enables White to make the decisive move. Only 19. . . . Q-K4 leaves some hope, even though after 20. Kt-KB3 Black is hardly able to defend his position.

20. PxP, PxP

There is also very little joy for Black in 20. . . . BxP. He does not see a single useful move after the continuation of 21. KtxB, PxKt; 22. P-K5!, PxP; 23. Q-KKt6.

21. P-K5!, PxP 22. Kt-K4, Kt-KR4

A reply of 22. . . . KtxKt would be bad because of 23. RxBch.

23. Q-KKt6, PxKt

The main variation on which I counted was 23. . . . Kt-KB5; 24. RxKt, PxR; 25. Kt-KB3!, and there is no satisfactory defense against the danger of 26. Kt-KKt5.

24. Kt-KKt5

Black resigns in view of 24. . . . PxKt; 25. QxKtch, K-KKt1; 26. Q-KB7ch, K-KR1; 27. R-KB3, which leads to a mate.

Before they graduate and get their diplomas . . .



Photographs by Lev Nosov

They Will Be



MOSCOW INSTITUTE OF FOREIGN LANGUAGES

. . . they have to go through five years of a lot of hard work.

thousand students are enrolled in the Translation Department. With the help of 150 instructors, they become proficient in foreign languages, a skill valued highly in these days of expanding international contacts.

The gadgets all help, but it's still not easy to learn a foreign language.





RECTOR:

"It's Up to the Students"



Our readers seem to be especially interested in student life in the Soviet Union. They often write in to ask about a particular university or institute. Among such letters there have been requests for information on where and how interpreters are trained.

The Moscow Institute of Foreign Languages has a student body of 7,000 and a teaching staff of 700. This interview is with the rector, Maria Borodulina.

QUESTION: How does your institute rank with other language institutes in the country and with schools of higher education generally?

ANSWER: The Moscow Institute of Foreign Languages is considered the leading institution of its kind in the Soviet Union. This is not merely a label but the actual state of affairs. For instance, the Central Methodology Council for the Study of Foreign Languages, the Higher Pedagogical Courses and the Department for Advanced Studies are part of our institute. Teachers of other colleges come to us for advanced training.

Since our institute is so well known, there are a great many applicants for enrollment from all over the country. But it is not easy to study here. Naturally, the higher the quality of instruction, the higher the demands made on the student.

QUESTION: Only a few institutes in the Soviet Union train interpreters, nor do many colleges in other countries offer that training. What is special about your institute in this regard?

ANSWER: Our training is not merely utili-



The latest news hot off the grapevine and bulletin board.

DEAN:

"Translating Is No Simple Skill"



The dean of the Translation Department of the Moscow Institute of Foreign Languages, Valentin Kuznetsov, describes the work of his division.

INTERNATIONAL CONTACTS these days expand rapidly, and with them the demand for translators. This profession is becoming increasingly useful and important, its functions more complex and varied. It requires a wide-ranging background of knowledge and considerable talent, since translating is a creative process.

Some people are of the opinion that translating is a simple skill and anyone who knows a foreign language can be a translator. In my opinion these notions are unfounded. A good translator must have

tarian. We give our students a higher philological education. They study theoretical linguistic subjects in depth, almost as they would at a university. Furthermore, both future teachers and interpreters acquaint themselves in detail with foreign literature. In short, our graduates are broadly educated people, not narrow specialists. The students of the Translation Department make a thorough study of the country whose language they are majoring in.

The diplomas they receive on graduating read: "Translator and Reader. High School and College Teacher." This shows best of all, I would say, the nature of our program. At the same time students of our Pedagogical Department get sufficient practical training in speech to work as interpreters also, should the occasion arise.

QUESTION: Does the study of foreign languages presume visits of students and faculty members to foreign countries?
ANSWER: Yes indeed. Our teachers usually take a four-month training course at universities abroad, for instance, at the Sorbonne. In exchange, teachers from abroad come here for training. This year, Professor Carl R. Proffer of the University of Indiana, a specialist in translating from Russian into English, spent several months at our institute.

There is also a student exchange. We send groups of 25 to England, the German Democratic Republic and France.

In addition, students of the Translation Department frequently go abroad for practice, and sometimes for quite a lengthy stay.

QUESTION: Our readers would probably like to know whether any aspects of the institute's activities relate to the United States.
ANSWER: Of course. For example, faculty member Alexander Shveitser recently defended his thesis for a doctor's degree on the theme "The American Variant of the English Language." As for American speech patterns, four dissertations for a master's degree were written on the subject this year.

By the way, phonetics instruction in our institute is based on the Oxford pronunciation, but students may also use the American pronunciation.

QUESTION: Another question which, judging by letters we receive, would also interest our readers. Your institute, like any other, has administrative bodies, such as the rector's office, the dean's office, etc. How is the student body represented?
ANSWER: Firstly, representatives of the students are members of the teachers and students councils. Secondly, the students have their own organs of self-government, such as the Student Council for the dormitories. But the main body is the Komsomol Committee at the institute. Since it embraces the large majority of students, the committee represents their interest. Actually, it guides the students' social activities. There is also a student trade union organization, which has its own powers, duties and funds.

Student initiative means a lot. For example, two languages are compulsory, but a student can study three, and even four, and they will all be recorded on his diploma. In general, we readily accede to the requests of our young people. We were asked to introduce the subject of international relations and world economics, and we did. We invite specialists from the Council for Mutual Economic Assistance Bank, the Ministry of Foreign Affairs and the Institute of International Relations to lecture. We introduced, again at the request of the students, days of independent work for fourth-year and fifth-year students, days when they do not have to attend any classes. We also turned over to them many functions that have to do with their daily lives. Now, for example, the students themselves distribute the trade union welfare funds to their needy college mates. In general, to repeat, it's up to the students, their initiative.

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mastered a special body of knowledge, acquired certain habits of mind in a thoroughgoing and well-planned course of professional training.

Eventually, the work of a translator becomes specialized. He does oral or written translating and works in one or more specific areas—fiction, technical matters, economics or the diplomatic service. Our course of study is organized with that in mind. Since we believe that a graduate of our institute must be roundly educated and have acquired the requisite professional habits, our curriculum is designed along two lines. The first aims to provide a general education, the second a professional education.

Approximately a third of the course of study is devoted to general subjects. They include political economy and philosophy, history, geography, the political and state structure of the country whose language is being studied, international and economic relations, Russian, Soviet and the corresponding national literature. Some of these subjects (the political and state structure of the country and its literature) are taught in the foreign language.

The major part of the course of study is professional—linguistic preparation. In the first two years the students are taught general linguistics, a foundation for a stable knowledge of the language, both written and oral.

The third stage is, in a sense, transitional to the next stage. Here students consolidate and perfect their knowledge of the language. Theoretical (summarizing) courses are given in the form of lectures on the history of the language, lexicology, grammar and phonetics. Simultaneously they take a theoretical (preliminary) course on the theory of translating.

The fourth and fifth years are devoted to practical preparation. Here the students study (with teachers and independently) all aspects of translation: written and oral, from a foreign language into Russian and from Russian into a foreign language. In the fifth year the student chooses one of the areas of translation to specialize in. Studies end with state examinations and the presentation of an independent graduation translation.

This course of study was developed gradually, and after much experimenting. But our teaching staff now feels that it guarantees the thorough training of highly qualified translators for the most varied kind of work.

The Translation Department has 1,000 students and 150 teachers. Depending on the language with which teaching begins (foreign language of the first specialty), the department is divided into five sections: English, French, Spanish, German and Italian (the sections are listed here according to the number of students).

However, our students must know two foreign languages. They begin learning a second foreign language a year and a half after they enter the institute. Our foreign languages of the "second specialty" are: in the English section—French, Spanish, German, Italian, Swedish, Danish, Portuguese and Arabic; in the French section—English and sometimes German and Spanish; in the Spanish section—English and more rarely French; in the German section—English, and in rare cases French; and in the Italian section—English as a rule. Consequently, up to from 85 to 90 per cent of the students of our department study English either as the first language (50 per cent of all the students) or as the second (35-40 per cent). The ratio reflects current needs.

Apart from the two obligatory languages, capable students may take, optionally, a third and even a fourth, which have the legal status of a foreign language of the second specialty and are so entered on the student's diploma. In recent years many of our graduates received diplomas listing three and four foreign languages.

When a student graduates from our institute, he has a job waiting for him. And that is true not only for graduates of our department. Last year all the higher schools in the country graduated approximately 500,000 specialists. But more specialists were needed than the higher schools were able to train. The same applies to translators. Year after year the demand exceeds the supply, and we are not able to satisfy all the requests for our graduates.

Demand is one thing, but we, of course, are far from indifferent as to where our graduates will work. Every university and institute has an assignment committee that considers Help Wanted requests and assigns jobs. The personal interests of the student are, of course, taken into consideration, but only within certain limits. Perhaps this sounds somewhat arbitrary, but that is the legal requirement. Everyone who graduates from a school of higher education (where his tuition is free) must work for at least three years wherever the committee assigns him. After that he is absolutely free to make his own choice. However, I repeat, the committee does try to take into account the personal wishes and inclinations of the graduate, but compromises are not always possible. For instance, last year two graduates of our department, very gifted young men with evident inclinations for independent research, wanted very much to join the graduate school of the institute and devote themselves to research or teaching. Nevertheless, we had to assign them to jobs where they did practical translating because of the great demand for specialists in their field.

The students' practical work begins long before they receive their diplomas. Beginning with the third year, they do practice translation during summer vacations and after classes. There are ample opportunities at conferences, congresses, symposiums, seminars, exhibitions in Moscow and other Soviet cities. Work at the Mir and Progress publishing houses, the Telegraph Agency of the Soviet Union and the Novosti Press Agency provides the students with a good opportunity to practice written translation, and the Intourist Travel Agency and the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries give them the opportunity for oral practice. By the way, they are paid for their

work—two or three times their stipends (during their practice period they also receive their stipends).

Most beneficial are trips abroad. For many years now we have been carrying on a very fruitful exchange of students with the Leipzig Institute of Translators. In 1968 we established contact with Birmingham University in England. This year, at the suggestion of the English, the exchange contingent was increased from 20 to 25. We send students to France and are host to students from that country—25 from each side. Apart from the language practice, these trips are important because the students are able to acquaint themselves with the life, customs and culture of the people whose language they are learning.

I have, perhaps, overstressed the academic side. I'd like to add that we try to do more than educate our students. We try to foster attitudes of civic responsibility and independence. Student self-government is the general practice.

How does student self-government manifest itself concretely? Well, first of all, the Academic Council of the department, which decides various organizational and curricular questions, includes a representative of the student body. Further, the Student Council, which is chosen by the students themselves and is given wide powers, has certain important areas of decision—assignment of dormitory accommodations, allocation of stipends, etc.

In each course there is a teachers and students council which concerns itself with the progress and discipline in the given course. The council may, for example, recommend that I, as dean of the department, give awards to students who have distinguished themselves, or, on the contrary, expel a hopeless idler and shirker whose behavior has tried everyone's patience.

Between teacher and student there is constant, businesslike contact, and this makes it possible for us to feel the "pulse" of the students and to consider their opinion.

It is not only inside the institute that students are active. Some of them, for instance, do volunteer work at the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries and at the Institute of Soviet-American Relations.

Our students have organized here in Moscow a so-called Komsomol Institute of Foreign Languages. It is attended by Komsomol activists, and our students are the teachers. They get no pay for the work; it is purely voluntary, a way of developing their organizational talents.

The graduates of our department, which has been in existence since 1942, are welcome everywhere. They hold very responsible posts, including some in the UN secretariat. Many of the country's leading translators and interpreters have graduated from our institute. Am I boasting? But who does not hold the reputation of the trademark of his "firm" dear?

Language laboratory.



interpreter

has to be

a well-educated

person

who knows

what is going on

all over

the world.







Reasons for enrolling range from wanting to read favorite authors in the original to hoping to get jobs that will help them see the world.



The memorial to institute students who lost their lives in the war.

STUDENT:

Don't Be Self-Satisfied



We asked Nikolai Dolgopolov, a fourth-year student in the Translation Department (English section), to tell us about student life.

THIS REGION of Moscow is an area of ancient, respectable mansions. Many of them are linked with the names of men who have glorified themselves in some way during their lifetimes, and the memorial plaques on the walls of the buildings tell us about them. There is one such plaque on the wall of our institute, too; it says that in 1820 the famous Russian historian Sergei Solovyov was born in this house.

These details seem to put the particulars of present-day Moscow off into the depths of the hoary past, and one somehow comes to believe that inside these walls everything must be silent and decorous, as in a museum. However, the door is thrown open every other minute, and each time bursts of laughter and a steady, many-voiced din come pouring out. Even if one should happen to be here late at night, when the institute empties, one could get a full picture of its life, packed as it is with all sorts of events.

This picture is drawn by the numerous placards and announcements that cover the walls of the student lounge. Written in fancy letters or typed (most of them in a foreign language), they invite one to "visit," to "see," to "hear," to "take part." In this dense forest of announcements a person new to the place might feel lost at first and involuntarily think: But when do they manage to study? From the point of view of a student, however, the more joint affairs and activities that crop up, the easier it is—strange as it might seem—to study, and the more interesting does life at the institute become.

I shall try to explain at least some of the announcements put up on the walls. They will tell you something about the Moscow Institute of Foreign Languages in general, and about the Translation Department, where I study, in particular.

There is a little note informing anyone whom it might concern of the next meeting of the *starostat*, *i.e.*, of the *starostas* (monitors) of each group. What they are meeting for this time no one as yet knows. Should a student with a conscience clouded by a "tail" (that's what we call a subject in which we failed the exams) catch sight of the announcement, he will immediately begin silently rehearsing a speech for the defense. There's very little joy in being summoned to a meeting of the *starostat*. Oh, of course, he once elected his *starosta* himself, from among the members of his group, and perhaps the *starosta* is even his best friend, but why on earth should he be obliged to listen to him moralizing now? Besides every *starosta*, as a rule, acts on the ancients' principle: "Plato is my friend, but truth is dearer."

But perhaps this time the *starostas* will engage in discussion, not with their comrades, but with the dean's office. For instance, on changes in the lecture schedule. The administration, as everyone knows, has its own ideas; the students, naturally, have their own, too. They, for example, are dissatisfied with long breaks between lectures, and the *starostat* insists on a revision of the schedule.

In other words, the *starostas* are a sort of intermediary between the dean's office and us. They pass on the students' wishes to the administration, and the administration's orders to the students.

And here's another announcement. This one is usually put up twice a year, after the winter and the spring examination sessions. It reads: "The Stipend Committee of the Translation Department will meet today." That is an extremely exciting sentence for every student, I should say. Some read it and have an immediate fit of dejection: Flunk an exam and good-by stipend! Others feel a surge of joy: Excellent for every exam means a higher stipend. Still others are lost in conjecture: What will the committee's decision be?

The stipends are granted by a committee of students, and we haven't yet had reason for complaint. Their judgment is always objective. They know perfectly well how each one of us lives. Those who fail their exams can't very well complain. After all, it's their own fault. And the rest understand that their comrades will not go out of their way to stick spokes in their wheels. Our rule is: Students who are well provided for (meaning their parents' wages) receive stipends only if they get nothing but Good and Excellent on exams. But the committee may "relent" if it feels that a single Fair wormed its way into a report card by sheer chance (anything can happen in life, can't it?). Perhaps a student got Fair because he was much too engrossed in extracurricular activity—was rehearsing for a play, or preparing the next issue of the student newspaper. All right, let's not be too hard on him.

One might come across an announcement of the Student Council of the dormitories, too. Quite a lot of boys and girls from various towns besides Moscow study in the Translation Department, and our dormitories are rather densely populated. They are managed by the so-called Student Council, a body elected from among the students of the department. What are its functions?

The main one is to make sure that everyone who is in need of dormitory space gets it. Second, care for the leisure time of its inhabitants. A student, of course, does not have too much leisure, but that only makes the practical usefulness of the council more important than ever. For instance, the kids would like to go to a popular play but don't have time to stand in line for tickets. A member of the council in charge of theaters, excursions, and exhibitions will help them get tickets.

Besides, there are endless everyday problems that keep cropping up. The Student Council settles them together with the Bursar's Office.Another important thing is the rules and regulations of the dormitories. Different kinds of people live there, each one with his own habits and customs. Someone might be sitting up half the night studying at the exact time that somebody else has decided to celebrate. And so the council is obliged to establish, within reasonable limits, of course, certain regulations (they are worked out at general meetings). Some time ago the chief boss here was the administration, *i.e.*, the superintendent. He was a middle-aged man who loved to grumble at the lightheadedness (from his point of view) of young people nowadays. He had a formula for "upholding morals": Prohibit everything. Things are different now, but out-and-out infringers of the rules hardly find things easier. The students themselves don't want to put up with them.

In spring our lounge is usually plastered with posters announcing the summer locations of student construction teams. The future translators and interpreters (first-year and second-year students who do not yet have summer practical training) work in the steppes of Kazakhstan, in the Siberian taiga, in the town of Kashira, near Moscow, even in Hungary. True, this summer our kids gave up their usual work—instead of building, they went to Astrakhan (a town in the estuary of the Volga) to harvest watermelons.

The leaders, or commanders, of the teams are students who have worked especially well on former construction sites—a usual thing in any institute. The team lives on the principles of a commune: All money earned is divided equally among its members.

Members of the construction teams are chosen strictly and critically—preference being given to the strong and hardy. And I must say that most of our students satisfy the strictest judges. The Institute of Foreign Languages is certainly not a grenadier regiment, but our sports sections do work extremely well. A student is free to enter any one of them, but most popular are the basketball, light gymnastics, table tennis, and sambo wrestling (something like judo) sections.

By the way, this latter sport is especially necessary for students who are members of the squads of volunteers who assist the militia in keeping order in city streets, parks, etc. The Translation Department squad usually patrols the old Moscow lanes and streets adjoining the institute. There have been cases of students arresting criminals. But only students who really know the elementary methods of self-defense are allowed to take part in such operations.

Now about the department's intellectual life, which is closely linked with our numerous clubs, hobby groups, societies, associations. Take, for example, the Student Scientific Society (SSS). It is a voluntary society of students who have decided to

Continued on page 57

They're happy today—the exam was yesterday.



REVOLUTION AND PHILOSOPHY

By Professor Dmitri Yermolenko

NOWADAYS revolutionary changes are a generally accepted theme. A hundred years ago they were spoken of in undertones and called for a certain courage at that. Things have certainly changed.

Not without reason, a UNESCO special committee recently pointed out that for the first time in world history no doctrine is advocated now as antidemocratic.

By social revolution, Marxist-Leninist philosophy understands a radical qualitative change in the social system. Prepared by quantitative changes, that radical qualitative change signifies a sharp turn, an acceleration of development, a leap.

The leap can take place either smoothly or steeply. It may be a slight acceleration in comparison with a preceding period, or, on the contrary, may express a dramatic speedup in the tempo of development. Its character is determined both by internal contradictions in the place where the leap occurs and by external conditions.

In a social revolution, socioeconomic relations and the social system that unites them are replaced by a new system and new relations. Such revolutions have taken place prior to the twentieth century, too. Thus, the French Revolution of 1789 was a qualitative social change which replaced French feudalism with capitalism. That revolution provided impetus to a number of others in Europe. However, mankind's road led further, so that the twentieth century saw a new social revolution—the socialist revolution—become the order of the day.

Man reflects this immense process in every form of social consciousness. Each person perceives it according to his class—according to his understanding of "progress," "humanism," "freedom" and "democracy." Naturally, an acute struggle is in progress today between the forces interested in human advancement and the forces of regression. Its theme is: What attitude should man take toward this problem, *i.e.*, which road of development should he choose?

Philosophy and Practice

Weltanschauung, man's philosophical view of the world, holds a special place in the system of social consciousness. Philosophy's laws and categories reflect the broad problems of man's attitude toward the world and his place in it. This science, especially, addresses itself to the practice of life—by striving to explain the world around us, and by basing its conclusions on phenomena provided by that world. How, then, can philosophers' consciousness stand aloof while man determines his attitude toward a cardinal problem like revolution?

In the history of philosophy there have been many trends that regarded revolution as a strictly practical question and philosophy as pure consciousness, which cannot go beyond explaining the world and, therefore, cannot deal with practical problems. Such notions exist today as well.

Karl Marx and Friedrich Engels, the founders of Marxist philosophy, came out categorically for a link between philosophy and practice. They emphasized that cognition of the world around us is first and foremost a problem of practice. Can objective truth be attributed to human thinking? The question, they argued, is not a theoretical but a practical one. Man must prove the truth, that is, the reality and power—the materiality—of his thinking. A dispute over the reality or nonreality of thinking, when it is isolated from practice, becomes purely scholastic. Marx and Engels stated bluntly that philosophers should not only interpret the world—they should actively change it. Proceeding from this stand, they began to evolve their system as the theoretical basis for revolutionary change of the world, eradication of social injustice, and establishment of a society no longer divided into rich and poor, oppressors and oppressed, exploiters and exploited.

The philosophical system of Marx and Engels outlined a highly humanistic program by which the practical revolutionary could reshape the world. However, it was to their pupil, Vladimir Lenin, that the task of accomplishing this program fell. In developing the theory of Marxism, Lenin organized a political party which answered pressing human needs. This party pioneered the construction of a new and classless society in a vast country.

Lenin attached great importance to philosophy. He was the author of such profound philosophical works as *Materialism and Empiriocriticism*, "On the Significance of Militant Materialism," "On Dialectics," and the like.

In these writings he defended the materialist understanding of the development of nature and society. He showed that the world exists objectively, outside and independent of our consciousness. Man can and must penetrate the secrets of this external world—must understand the objective laws of its development. During World War I, Lenin analyzed the contradictions of capitalism in its last stage—imperialism—and looked for a way out of the calamities this epoch had brought.

Some people have expressed surprise that Lenin, while engaged in a long, serious analysis of the contradictions of capitalist society, made a thorough study of the works of Aristotle, Feuerbach, Hegel and other prominent thinkers of the past. But without a knowledge of the legacy of human thought, it would have been impossible to develop Marxist philosophy further—to apply it to the new situations of the twentieth century. For this, he had to study not only Marx and Engels, but also the outstanding representatives of pre-Marxist philosophy. Lenin drew a major scientific conclusion from these readings: He formulated the law of the uneven economic and political development of countries under imperialism.

Capitalism, it was once believed, developed more or less smoothly, and the revolutionary transition to socialism should be carried out in most countries simultaneously. And that was true a hundred years ago. Lenin showed, however, that mankind had entered a new period of its development, characterized by sharply increased contradictions in the capitalist world. Some countries had shown rapid economic growth, while others developed more slowly. This unevenness led to attempts by individual countries or groups of countries to change the alignment of political forces (including territorial changes). An explosion of these contradictions led to wars for the repartition of the world, for example, World War I.

The uneven development in various countries led to uneven maturing of the conditions necessary for the socialist revolution. Thus, in a particular capitalist country, all the system's contradictions could appear in their most acute form and lead to a social explosion, the socialist revolution.

But contradictions between states, also (over foreign markets, spheres of capital investment, and the like), were engendered by uneven individual development. And these contradictions hampered the unification of the imperialist powers in order to crush proletarian revolution in any one country. Thus, external conditions, too, were favorable for the triumph of the socialist revolution in one country first.

Lenin formulated this principle in his work "The United States of Europe Slogan" (1915). "Uneven economic and political development," he asserted, "is an absolute law of capitalism. Hence, the victory of socialism is possible first in several or even only one capitalist country."

Which particular country would be the forerunner of socialism? Reasoning both from general theory and a profound study of recent events, Lenin was able to reply concretely to that question. He named Russia, basing his prognosis on an analysis of the situation in the capitalist world and in Russia itself—on his knowledge of the philosophical laws of social development. Lenin's theory of revolution passed a practical test in Russia.

In this country, by the early 1900s, all the contradictions of the times had come to a head. Many survivals of feudalism still existed.

Vladimir Lenin
1870-1970

True, serfdom had been abolished by law as recently as 1861, but that had brought no relief from the peasants' economic enslavement and forced labor. The rapid advance of capitalism carried brutal exploitation, and the plundering of workers and craftsmen, in its train. Russia was groaning under a heavy political yoke; national oppression crushed millions of people representing the most varied nationalities.

There had developed in the country a unity of the objective and the subjective factors which lead to the reshaping of society.

Objective and Subjective Necessity

Applying philosophy to life, the Leninist doctrine demonstrated the objective necessity of the socialist revolution and the subjective factors which would transform the possibility into reality.

What are those objective factors—those elements of reality which indicate, independently of man's will and consciousness, that conditions have matured sufficiently for revolutionary changes?

According to Marxist-Leninist philosophy, society's development is based chiefly on its economic system. Society's productive forces (the means of production, and the working people who put those means into operation through their working skills and accumulated experience) are intimately bound up with the relations of production. The latter come into being objectively and include a whole range of factors, the kingpin of which is the form of ownership of the means of production. It is this mode of ownership which determines how the material wealth is distributed among the population.

The greater the degree in which production relations correspond to society's productive forces, the more rapidly that society develops. Conversely, the less production relations are in keeping with society's productive forces and the sharper the contradictions between them, the more uneven and unstable is the development of society. If these contradictions become particularly acute, then a conflict arises between the productive forces and production relations.

As a rule, it is the productive forces that are in the lead. Rapid technological progress concentrates and enlarges production. The workers' labor becomes more social in character, while the form of its appropriation under capitalism remains private. If there is no change in the forms of production relations, then an acute conflict develops between them and the productive forces. This conflict becomes the economic basis for an acute class struggle, dictating the necessity for social revolution. On the one hand there are the workers, who create material wealth, and on the other the capitalists, who appropriate that wealth. The resultant class collision—the social revolution—acts as a means of eliminating collisions and conflicts. At a certain level of their development, as Marx pointed out, the material productive forces of society clash with the existing production relations, that is with the property relations among which they have hitherto developed. From a form of the development of the productive forces, these relations turn into their fetters. Social revolution follows.

Thus, the bourgeois revolutions in France, Germany and elsewhere in the late eighteenth and early nineteenth centuries opened the way to the growth of the productive forces by removing feudal production relations.

In its turn, the 1917 Socialist Revolution in Russia smashed the old capitalist production relations and the survivals of semifeudal relations, making possible the rapid advance of the forces of production.

A revolution can be bourgeois, socialist or otherwise, depending on the objective contradictions it resolves and the objective tasks it accomplishes.

The people active in such a conflict—classes, social groups—determine what the social change will be. Marxist-Leninist theory has called them the motive forces of revolution. It is they who determine which class or classes the revolution will bring to power.

The motive forces are objective—the result of the objective conflict between the productive forces and the relations of production. But it is human subjective factors that determine how intensely they operate, the nature and success of their methods:

How high is the oppressed classes' level of consciousness? How well organized are they? Are they prepared for revolutionary action? Is there a vanguard—a revolutionary party? If so, what are its organization, its leadership like? How strongly are the opposing forces resisting? How good is their organization?

As the October Socialist Revolution showed, favorable objective conditions are not enough for the overthrow of the old system: Preparation and organization are essential.

The vanguard of the working class in Russia—the Bolshevik Party—provided the resources for this preparation. From the dialectics of Marxism-Leninism, it drew fresh solutions for new situations and consolidated the alliance between the working class and the working peasantry. That alliance proved a firm foundation for the Revolution as well as for the new government.

Life not only engenders philosophical concepts; it also verifies them. The theory of revolution, especially, requires such validation.

What Is a Revolutionary Situation?

Outwardly, a revolution is carried out with the purpose of seizing power. The forces seeking to replace the old regime are guided by the strategy and tactics of the revolutionary struggle: What social changes are desired? When does the need for a revolutionary upheaval become inescapable? Does such a situation exist? Many times a revolution that has achieved maturity has been crushed because revolutionary action was begun too early or too late. Thus, the Revolution of 1848 and the Paris Commune of 1871 failed, as Friedrich Engels saw it, because Europe's economy had not matured enough for the elimination of the capitalist mode of production. Besides, the working class was still largely unorganized and disunited.

One of the greatest services Lenin rendered was to evolve the theory of a revolutionary situation, and to apply it in practice. Plans based on this theory have proved amazingly flexible as conditions changed.

According to Lenin, a revolutionary situation must contain the following basic features:

First, "the impossibility of the ruling classes' preserving their rule unchanged." For a revolution to come about, a crisis in these classes, in their policies, must create a crevice through which the dissatisfaction and indignation of the oppressed classes find an outlet. It is usually insufficient that the masses are unwilling to go on in the old way; the rulers must also be incapable of living in the old way.

Second, a greater than usual aggravation in the poverty and privation of the masses.

Third, a considerable increase, for the reasons given above, in the activity of the masses, who are drawn into independent historical action both by the conditions of crisis and by the actions of the rulers.

Without these objective changes, Lenin said, revolution as a general rule is impossible.

Marx called social revolutions the locomotives of history. As they occur, the pace of life becomes faster and the people who carry them out are transformed. The energy of the masses is awakened.

However, a revolutionary situation alone does not ensure success. Revolution is composed of numerous elements, and their unification in a single stream tests the maturity of the party that has prepared for the confrontation. Lenin and the Bolsheviks were able, in 1917, to unite all the revolutionary forces around them for the overthrow of the exploiters. The struggle of the working class for socialism and of the peasantry for land, the liberation movement of the oppressed national minorities, and the demand for an end to the war—all merged to overthrow czarist rule.

Continued on page 44

A VISIT TO LENIN

By Alexander Serafimovich

Writer Alexander Serafimovich (1863-1949) met Lenin's elder brother, Alexander Ulyanov, at St. Petersburg University in 1883. There, too, he became interested in Marxism. He was exiled by the czarist government for a long period. All Serafimovich's literary work was deeply revolutionary. His novels and other writings won him a large audience in the USSR and abroad.

I OFTEN HEARD Lenin speak at congresses and conferences, and it always struck me that he took less time to make his point than those who preceded or came after him. But the impact of what he said was tremendous.

I met Lenin personally only once, at his home. Of this visit I shall now speak.

My doorbell rang late one afternoon and a man said, "Comrade Lenin sent a car for you."

In about five minutes I was in the Kremlin. A young Red Army man took me to Lenin's top floor apartment.

Ushered into a small dimly lit hall, I started taking off my coat when I heard quick, light footsteps. Lenin came forward to meet me. He gave me one swift glance and heartily shook my hand.

"Do come in," he said cordially.

He led me into the small but unusually tidy and intimate dining room with simple furniture that had seen better days; some of the workers' homes I visited were furnished far more sumptuously Clearly it was Lenin's principle not to live better than the masses did.

Without taking his eyes off me, as though fearful that I might run away, Lenin began to question: "What is your life like? With what sort of people do you associate most? With workers or intellectuals?"

"A little with both," I replied, hesitant and somewhat abashed, not knowing what I could tell Lenin that he did not know already and that he might find interesting.

He sensed my uneasiness and to give me time to get over it, asked Nadezhda Konstantinovna to make us some tea.

I cannot think of another man in his position so utterly without vanity and with so consuming an interest in ordinary people.

On that memorable day I was able to get a picture of Lenin very different from the revolutionary leader and tribune who addressed congresses. Here was a new Lenin, companionable, jolly, keenly interested in the whole world, gentle and loving toward his fellow men.

"Are you doing any writing now?" he asked.

"There is little time to write; we're head over heels in organizational matters."

Lenin frowned.

"Yes, there's a great deal of organizational work to be done in our country today," he said. "You writers must bend every effort to draw workers into literature. Every story written by a worker should be welcomed with joy."

In these words rang faith in man and affection for the workers.

A samovar appeared on the table; it was dented and timeworn. The crockery was cheap and the spread was more than frugal.

Undemanding, burdened with the heavy cares of state, Lenin gave no thought to his own needs. We might have been in some faraway Russian village, for that was just how we sat around the steaming samovar, drinking the tea scorching hot and nibbling sparingly at the sugar.

Smiling, his eyes screwed up, Lenin waited for me to talk.

I must tell him about the workers, I thought. He invited me so that I could help him into the world from which he was so often cut off by his colossal labors.

"The other day I made a trip to Losiny Ostrov Station," I began, plucking up courage, "and saw the big armory in which more than a thousand workers are employed."

Lenin moved up and leaned toward me, listening eagerly. With characteristic animation and interest he plied me with questions about the armory workers, their earnings, work, schools, recreation. His canny, pointed questions showed his deep insight and understanding of working-class life. His speech was sparing of words but brimmed with thoughts.

Seeing how interested he was, I told him how the armory workers had fitted out a clubhouse with a theater for themselves. They had neither funds nor building materials, and the municipal authorities were in no position to help them. And so at a general meeting they passed a resolution to convert the local stable into a clubhouse.

Lenin was all ears. Creases spread from his temples to the corners of his eyes, and the eyes themselves held a merry twinkle.

"Wait a minute, how could they turn a stable into a club?" he asked eagerly.

"A rich landowner once lived in the area," I explained. "He kept first-class race horses and built a magnificent stable. And so the workers got busy making a theater out of the stable. They cleaned it up, whitewashed it, cut windows in the walls, laid floors, built a stage, knocked together furniture, put in electricity and when everything was ready, went to Moscow to invite actors. The actors gladly accepted and practically the whole settlement was present at the opening of the new theater. It was a very grand occasion."

Lenin was delighted and his eyes sparkled.

"Well?" he pressed me to go on.

It was a word he often used, investing it with different shades of meaning, from guarded doubt and irony to the kind of approval and encouragement that come from a keenly observant person familiar with life's adversities.

"And so you see," I went on, "the workers took a stable and turned it into a sort of fashionable high society club."

Lenin's eyes shone brighter than ever. He jumped up from the chair, a well-knit, stocky figure, and grasping the lapels of his jacket, burst into rippling boyish laughter. I have never met a man whose laughter was so infectious. It was odd to see this austere realist, this man who had made history, laugh like a little boy, until the tears came into his eyes. Choking with laughter and trying to stop, Lenin said:

"It takes workers to turn a stable into a high society club. Wait, give them time and you'll see what they'll build."

If I had never heard of Lenin, seen him or known what he thought of the working class, these words of his and his heartfelt laughter would have revealed to me the depth of his devotion, his faith and pride in the workers who are the makers and builders of the world.

Lenin's thoughts, like the needle of a compass, always swung to the side where the interests of the working people lay.

Brushing away tears of laughter, seriously now and with great emphasis he said in a low voice:

"The workers paid a heavy price for the right to govern their lives, but in the long run they will win out. That is the will of history."

There were footsteps in the hall. Nadezhda Konstantinovna listened and hastily went out. When she came back, she whispered something to Lenin.

A dark shadow crossed his face. An unwavering, coldly derisive look, firm and unyielding, came into his eyes. He had changed from the amiable interlocutor into the leader of the working class and general of its armies.

"Excuse me," said Lenin, "but I've just received a message that the White Guards have driven our troops out of Rostov. I must get back to work."

Our little chat had come to an end. As I said good-by, I could hardly tear my eyes away from Lenin's face.

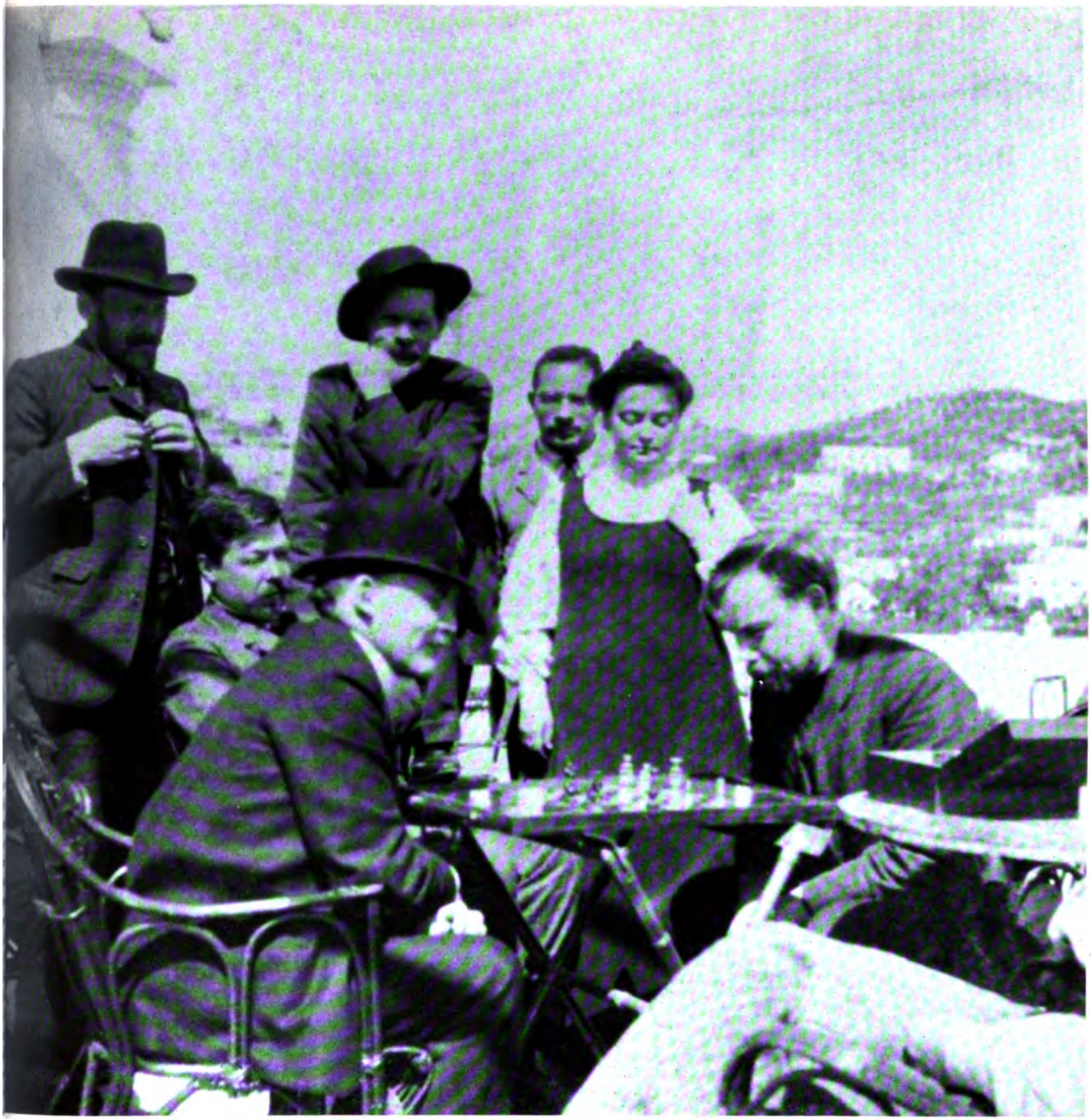
Two days later news came that the White Guards had been routed from Rostov. They were fleeing from the Red Army to Novorossiysk. In another few days we learned that the White Guard hordes had been driven into the sea.



This snapshot of Lenin is out of focus—the tell-tale sign of an amateur photographer. It is one of a series taken at Maxim Gorky's villa on Capri by Yuri Zhelyabuzhsky, later a famous film director. The pictures show Lenin engaged in a game of chess with Proletkult theoretician Alexander Bogdanov. Watching, from left to right, are Vladimir Bazarov, philosopher and economist; Ivan Ladyzhnikov, a publisher of Marxist literature; Gorky; Zinovi Peshkov, a relative of Gorky's, and Bogdanov's wife.

A GAME OF CHESS ON CAPRI

By Andrei Petrov
Historian



AN INTERESTING SERIES of amateur snapshots, showing Vladimir Lenin on the island of Capri, Italy, in April 1908, has been preserved until now. The photos depict a chess game between Lenin and Alexander Bogdanov, his constant opponent on questions of philosophy. Lenin criticized Bogdanov's ideas in his well-known work Materialism and Empiriocriticism. *The scene is the verandah of the Blesus de Maria Villa, where writer Maxim Gorky lived at the time.*

During this period Lenin was in emigration. Though far from Russia, which was living through the years of reaction following the defeat of the 1905 Revolution, he went on rallying and strengthening the Bolsheviks. He headed a party school in Longjumeau, near Paris, and contributed to the newspapers Sotsial-Demokrat *and* Proletary, *which were published by Russian revolutionary emigrants.*

Early in April 1908 he went to Capri as a guest of Maxim Gorky, his close friend. Lenin had been overworked in recent months, and the six days in Italy afforded rest and recreation. But the leader of the Russian Bolsheviks could not forego struggle completely. Overlooking his visitor's status, he immediately attacked the opinions of his host, whom, incidentally, he loved sincerely. At the time Gorky was carried away by the "God-building" ideas of Alexander Bogdanov and Anatoli Lunacharsky. (Lunacharsky later rejected these views, and after the Revolution he became a People's Commissar of Education.) Lenin, who opposed idealism of all kinds, tried to win Gorky over to his side. But such differences did not prevent their taking long strolls together across the island, angling, and visiting the mainland, where they climbed Vesuvius and toured Pompeii and the National Museum in Naples.

In Days with Lenin, *Gorky wrote: "I cannot imagine another man who, so far surpassing other people, could yet remain unaffected by ambitious cravings and retain a lively interest in simple folk. . . .*

"One old fisherman, Giovanni Spadaro, who saw Lenin on more than one occasion, said of him: 'Only an honest man could laugh like that.' "

Gorky describes further how Italian fishermen taught Lenin to angle, explaining that he should hook the fish when his finger felt the line vibrating.

" 'Cosi: drin, drin. Capisce?' *they explained.*

"*A second later he hooked a fish, drew in and cried out with child-like joy and a hunter's excitement* 'Drin, drin!'



"The fishermen roared with laughter, gay as children, and nicknamed the fisherman: 'Signor Drin-Drin.'

"After he had gone away, they continued to ask: 'How is Signor Drin-Drin getting on? The czar hasn't caught him yet?'"

Gorky recalled that Georgi Plekhanov (the first Marxist propagandist in Russia, who subsequently broke with the Bolsheviks) had once visited Capri. The Russian emigrants tried to talk with him, but he did not want to see anybody. A gifted, well-educated person and a keenly critical thinker, Plekhanov was also known for a certain arrogance and bitterness, an inclination to self-admiration. Lenin, on the contrary, was altogether free of these qualities; naturally the Russian emigrants made him one of their own.

* * *

This group of photographs, unfortunately, depicts only one episode in Lenin's six-day visit to Capri. Most of the snapshots (the one on page 41 is an exception) were discovered recently in the archives of the Gorky Museum; they consisted of prints without negatives.

Researchers believed originally that the pictures of Lenin at

As the game progressed, the audience grew. The photographer's mother Maria Andreyeva, joined the group. In the photograph on page 43 she is seated to the right. The man behind her is unidentified. The second woman is probably Mrs. Bogdanov, who has changed her clothes. Gorky's parrot Pepito, on his master's shoulder, is another addition. Yuri Zhelyabuzhsky evidently made these shots with a concealed camera.





the chessboard were taken by artist M. Botkina. Not long ago, archive documents and the testimony of contemporaries led to a discovery: The photographer was actually Yuri Zhelyabuzhsky, who later became famous as a film director and cameraman. Zhelyabuzhsky was the son of Maria Andreyeva, an actress at the Moscow Art Theater and close friend of Maxim Gorky. The youngster, who was known as Yura, had just become interested in photography. Incidentally, ten years after that meeting on Capri, he took pictures of Lenin in Moscow on the first anniversary of the October Revolution.

At Gorky's home on Capri, photography was everybody's hobby. The host himself thought up plots, Maria Andreyeva directed, and Yura Zhelyabuzhsky served as technician.

Yura kept clicking his new camera endlessly. Before Lenin's arrival, Gorky suggested to the boy that he take pictures of the visitor unnoticed. In those days the concealed camera was not usual among amateur photographers. So involuntarily, Gorky had provided quite a creative idea. In fact, he had simply feared that Lenin might object.

And, indeed, looking through the family album at Yuri's humorous photos, Lenin joked that it was risky to get within camera range at the villa. From now on, he announced, he would turn his back on the indomitable amateur.

Yet Zhelyabuzhsky managed to take Lenin's picture calmly from different angles. In only one photo the visitor has his back to the camera (above).

While Lenin was amused by the pictures at first, he finally asked Yura to put his camera away. Possibly he was afraid that the snapshots, in some mysterious way, might fall into the hands of the czarist okhranka *(the secret police) and that unwittingly he could jeopardize both his host and the other guests.*

The photos reproduced here show some technical flaws. If the negatives had been found, these defects could have been corrected. But so far their whereabouts are unknown.

Also, several of the details conflict. For instance, two snapshots show the same woman, Bogdanov's wife (see pages 41 and 43). But somehow during the chess game her dress has changed. In the first picture she wears a white blouse, while in the second her clothes are dark. There are also differences in the details of Maxim Gorky's clothes. It appears that the partners forgot about time in the heat of battle, and the game lasted so long that the villa residents managed to change for dinner.

REVOLUTION AND PHILOSOPHY

Continued from page 39

Lenin was 47 years old when, from the platform of the Second All-Russia Congress of Soviets, he proclaimed the triumph of the Socialist Revolution and the establishment of the dictatorship of the working class—the most democratic form of government. In an unforgettable leap forward for mankind, Lenin applied philosophical analysis to practice, showing that society could be refashioned by revolution, that a just social structure and a classless society were attainable.

Revolution and Our Times

Since the triumph of the Great October Socialist Revolution the world of socialism has expanded greatly. Increasingly, the Soviet experience is being used by peoples seeking to rid themselves of social inequality, of oppression and exploitation, and the horrors of war.

It has been argued that wars are essential to the spread of socialism. The example of the October Revolution and the emergence of socialist countries after World War II is cited. But the socialist revolution need not always be accompanied by the suffering of war. The two world wars, while they resulted in revolutions, were imposed on mankind by imperialism. Actually, the socialist ideals of the working class can be realized without any war, let alone a world war. Since their beginning the socialist countries have adhered to Lenin's principle that states with different social systems should coexist peacefully. While prepared to defend themselves if they are attacked, the socialist nations seek to prove their capabilities through peaceful competition.

The process of reshaping society according to philosophical principles is continuing. Following the example of the Soviet Union, a number of countries have begun the construction of socialism and communism. Through national liberation revolutions, many have rejected colonial oppression.

As the world experiences turbulent changes, the role of the working class, the main productive force of modern society, keeps growing. Increasingly, the peoples of the world are opposing imperialism and its aggressive actions, are building a movement for freedom, peace, national liberation, democracy, social progress and socialism.

Meanwhile, the accelerated progress of science and technology calls for more public management of production. And youth is becoming more and more active in public and social life.

Of course, this process is reflected in philosophical consciousness. To understand and explain it, one must approach the changes that have taken place honestly and objectively. When I recall my contacts with colleagues at the Fourteenth World Congress of Philosophy (September 1968), I still feel regret that not all philosophers apply such a cognition to the world around them. As Professor Kaplan of the U.S. pointed out ironically in 1961: If a philosopher writes a treatise on modesty, he will not forget to write his name on it. He can declare himself a solipsist, while at the same time calling upon his readers to agree with him. He may assert that time is unreal, while emphasizing that he has arrived at this truth after many years of meditation. . . . In short, the philosophical principles that man disseminates are often sharply different from those he lives by; and in our times, professional philosophy stands in ever greater danger of turning into demagogy.

In this sense, the philosopher's real usefulness to society is determined by his practical links with life, with the trends toward progress which abound in today's world.

The great English philosopher Francis Bacon once said that knowledge is power. Today scientific knowledge has become a special force, and unsurprisingly, modern man is concerned about whether he can put this force to good use. Shortly after World War II, U.S. General Omar Bradley remarked that our scientific achievements are quite definitely ahead of our ability to control them. Our world is one of nuclear giants and ethical dwarfs.

That is why, under today's conditions, something more than knowledge of the physical and natural sciences is needed. Philosophers have a special role; their knowledge enables us to apprehend the world in all its variety and change and, by seeing it clearly, to choose the right way.

In contrast with the positivist retreat to a narrow technicalism, the philosophy of Marxism-Leninism focuses on problems of ethics. It concerns itself with the full range of our continuously changing world. The humane ideals of this revolutionary philosophy call attention constantly to the need to improve this world.

LENIN'S THI

A SHIP from Copenhagen docked at one of the piers in New York. Among the passengers who hurried down the gangplank was a carpenter who had been hired in the Danish capital. He was a quiet, neatly dressed, unobtrusive man. From a couple of curt sentences he had spoken his workmates gathered that, judging from the accent, he had been born somewhere in Eastern Europe.

No one guessed that he was a messenger from Soviet Russia. No one suspected that the vessel's carpenter was delivering the text of the "Letter to the American Workers," which had been written on August 20, 1918, by Vladimir Lenin, head of the Soviet Government.

What had prompted the Soviet Premier, besieged as he was with thousands of internal problems, to address a letter to people in another country, bypassing official channels?

The October Revolution had started worldwide repercussions. It had even displaced news from the fronts of the First World War in newspaper columns. The stories describing the events in Petrograd and Moscow were far less objective than the war communiques. They reflected sheer lack of understanding, deliberate distortions and wanton fabrications.

The attitude of the Western governments to the first country in the world to be governed by factory workers and peasants was more than hostile. The Western nations had organized for armed intervention.

While a similar stand was taken by the United States, the policy was not approved unanimously. American workers and Socialists were holding meetings, staging demonstrations and collecting petitions in defense of the Russian Revolution. Undoubtedly, this meant moral support for the Soviets.

Americans had also sought to help materially by forming detachments of American Red Guards; their purpose was to defend the Bolsheviks from the German troops that had attacked the Soviet Republic in February 1918. The detachments were not allowed to cross the ocean, but the demands voiced by American workers to support the Russian Revolution, recall the troops from Soviet Russia, recognize the new government and render it assistance did not stop.

Lenin realized how difficult it was for Americans to understand what had been happening in a distant country on the other side of the world. He read Western newspapers and was aware of the tremendous flood of rumors and lies being circulated abroad about the Russian Revolution. It was not difficult for him to figure out what a picture the Bolsheviks presented in such biased accounts. Brutal fanatics and destructionists—nothing more.

On the other hand, Lenin knew from his talks with some foreigners that there were quite a few people in the West who refused to believe those rumors and were hungry for truthful information on the developments

"LETTER TO AMERICAN WORKERS"

By Pyotr Petrov
Historian

in Russia. For example, he had learned something of the reactions in the United States from Robert Minor, an American journalist and cartoonist who had visited Moscow. The Soviet Premier had a high regard for the revolutionary and democratic traditions of the American people. He decided he would try to tell them the truth about the Russian Revolution and the first steps taken toward establishing a socialist society.

Once written, Lenin's Letter posed a problem: How to get it to the American people? The Soviet Government had recently made several unreciprocated attempts to establish peaceful relations with the United States. Finally in October 1918 Georgi Chicherin, Soviet Russia's People's Commissar for Foreign Affairs, sent a note to President Woodrow Wilson requesting an end to the intervention and a beginning of peaceful negotiations. The Note, forwarded through diplomatic channels via the Norwegian Attaché in Moscow, remained unanswered and was kept from the public as well.

It was obviously impossible under such conditions to send the "Letter to the American Workers" through ordinary channels. The war was going on in Russia and Europe. Moscow was almost cut off from the outside world. In order to help the Letter reach its destination, it was necessary to find some other way of delivering it. It was therefore brought to New York in the fall of 1918 by Russian Bolshevik Pyotr Travin, who crossed the ocean as a carpenter on board the Danish vessel *Copenhagen*. He had returned shortly before from the United States, where he had lived in emigration. He listened to the appeal for help made by Mikhail Borodin, a party functionary, who had also lived in America for some time and had often told Lenin of his emigration experiences. In Stockholm Waclaw Vorovsky, Ambassador Plenipotentiary of the Soviet Republic in Scandinavia, and Borodin gave Travin three copies of the Letter, plus the Decrees on Peace and Land and texts of resolutions on public education, a copy of the Constitution of Soviet Russia, and other documents and printed matter.

In New York Travin found the address of a typesetter, Ivan Novikov, who worked for *Novy Mir (New World)*, a Russian-language workers' paper. Novikov helped him get the Letter and other materials to the famous journalist and leftwing Socialist John Reed, who visited Russia in 1917 and later wrote *Ten Days That Shook the World*, a book about the Russian Revolution. John Reed contributed to *Novy Mir* and was often seen at the editorial office. He consulted other leftwing Socialists on what could be done to get the documents published in leading papers.

Several copies of the Moscow newspapers *Pravda* and *Izvestia* had reached the United States by that time. They featured Chicherin's Note to President Wilson (mentioned above). John Reed decided to do everything to help acquaint as many Americans as possible with the Soviet Government's Note and Lenin's Letter.

Travin and John Reed went to Washington to arrange an interview with Hiram Johnson, Republican Senator from California. John Reed informed the Senator that the Administration had concealed the peaceful proposals made by the Soviet Republic even from Congress, and Johnson discussed it in a speech he made to the Senate.

After that the news spread like wildfire through the country and was given broad coverage in the press. The Letter and the Note were published in *The New York Times* and other leading papers, as well as in socialist and labor publications such as *The Revolutionary Age, The Class Struggle, The Liberator, New York Call* and *Novy Mir*. Lenin's Letter was also published separately as a pamphlet. All told, about five million copies of the Letter were circulated in the U.S.

The Letter was considered by Congress. On February 4, 1919, Republican Senator Frank Kellogg referred to a reprint of the message from Russia which had appeared in the January 23 *St. Louis Post-Dispatch*. He proposed filing with Congress, as official documents, the Constitution of Soviet Russia and the Decree on Land.

What was the essence of Lenin's Letter? Why was it circulated so broadly overseas?

The head of the Soviet Government was explaining the significance of the victory scored by the October Revolution and its role in the progress of mankind. He was defending the proletarian government from its attackers. Firstly, he refuted the Entente* powers' unfair accusation that in concluding the Treaty of Brest-Litovsk, the Soviets had struck a deal with the Germans and betrayed the interests of Russia's allies in the First World War. Lenin justified the measure. The Soviet Government had proposed that all belligerent countries should conclude peace without annexations or indemnities. All had ignored Russia's appeal. Exhausted by war and just emerged from czarist rule, the country found itself in a precarious position. The newly established government was threatened with overthrow in its turn. In order to save the Socialist Revolution, it was necessary to sacrifice a portion of Russia's territory. "There are agreements and agreements," Lenin wrote, recalling that when the Americans waged their war of liberation, they had taken advantage of the strife among three European nations, all of whom threatened the freedom of the American people. In its war against the British, America enlisted the help of France and Spain. Then why should anybody blame Soviet Russia, Lenin asked, for concluding an agreement in order to preserve its independence?

Lenin denied the accusations that the Bolsheviks had caused chaos and destruction in Russia. "The class struggle," he wrote, "has always, inevitably, and in every country, assumed the form of *civil* war, and civil war is inconceivable without the severest destruction." "If we only take into consideration," he asserted, "the 'destruction' of some branches of industry and of the national economy, America in 1870 was *behind* 1860. But what a pedant, what an idiot would he be who, on *these* grounds, were to deny the immense . . . revolutionary significance of the American Civil War of 1863-65!"

He also replied to opponents' charges of "needless terror." Revolution, he said, is unthinkable without the resistance of the exploiters; it cannot be victorious, therefore, unless the resistance is crushed. Lenin cited the bourgeois revolutionists in Britain and France, who resorted to terror against the royalists, hanging or guillotining noblemen and aristocrats. The victorious bourgeoisie, he pointed out, looked back on their methods as just and legitimate. Equally just and legitimate, Lenin insisted, was the force employed by the working class against its many enemies.

These enemies, incidentally, were far from fastidious and resorted to the most brutal methods in their turn. One of their victims was Lenin himself—ten days after he completed "Letter to the American Workers," he was dangerously wounded by several shots fired by a Socialist-Revolutionary terrorist, Fanny Kaplan. Thus he found the talk of "Bolshevik violence" increasingly hypocritical, coming from a world bourgeoisie which had slaughtered ten million men and maimed twenty million in its "war . . . to decide [which] vultures are to rule the world."

In the Letter Lenin wrote with respect about America, a country that had taken first place in the world in the development of productive forces and the introduction of machinery and modern techniques. He spoke with sympathy of the American people, who "have a revolutionary tradition. . . . That tradition is the war of liberation. . . ."

The circulation of the letter from Russia brought immediate response from American workers, in the form of large demonstrations against the intervention and in defense of the Soviet Republic. Petitions were sent to Congress, and shippers of arms to the countries fighting against Russia were faced with refusals to load their cargoes. Progressive publications launched a campaign for the withdrawal of American troops, under the slogan "Hands Off Soviet Russia!" With the end of World War I, attempts had increased to crush the Soviet Republic by armed force and, correspondingly, opposition to the intervention was growing. The message brought by a ship's carpenter was one of the largest single factors in stirring support in America for the new socialist regime.

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* The Triple Entente was a bloc formed by France, Britain and Russia before the First World War to oppose the Triple Alliance of Germany, Austria-Hungary and Italy in the struggle for a redivision of the world.

"MATTER HA

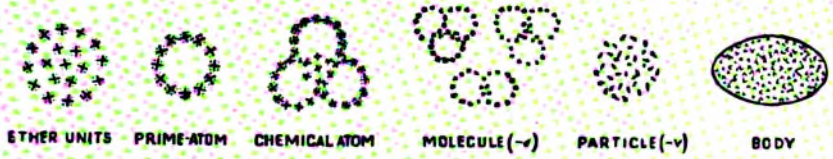
V. I. Lenin's main philosophical work is the book* Materialism and Empiriocriticism, *written between February and October 1908 and first published in May 1909. The main content of the book is the further development of Marxist dialectical materialism in the light of the latest findings in the natural sciences. At the same time Lenin criticizes the revisionists in philosophy, the men who tried in that period to revive philosophical idealism, using the so-called "crisis in physics." The following is a reprint of Section 2 of Chapter Five of Lenin's book. The title is the author's, the footnotes are the Editor's. Lenin's footnotes are given in parentheses.

THE VERY EXPRESSION "matter has disappeared" may be found in the description given by modern physicists of the latest discoveries. For example, Houllevigue, in his book *L'evolution des sciences,* entitles his chapter on the new theories of matter: "Does Matter Exist?" He says: "The atom dematerializes, matter disappears." (L. Houllevigue: *L'evolution des sciences,* Paris, 1908, pp. 63, 87,88; *Cf.* his article: "Les idées des physiciens sur la matière," in *Année psychologique,* 1908) [1] To see how easily the fundamental philosophical conclusions are drawn from this by the Machians,[2] let us take Valentinov.[3] He writes:

"The statement that the scientific explanation of the world can find a firm foundation *"only* in materialism" is nothing but a fiction, and an absurd fiction at that" (p. 67). As the destroyer of this absurd fiction they point to the well-known Italian physicist Augusto Righi, who says that the theory of electrons "is not so much a theory of electricity as of matter; the new system merely puts electricity in the place of matter." (Augusto Righi. *Die moderne Theorie der physikalischen Erscheinungen,* Leipzig, 1905, p. 131.) Having quoted these words (p. 64), Mr. Valentinov exclaims:

"Why did Righi permit himself to commit this offense against sacred matter? Is it perhaps because he is a solipsist, an idealist, a bourgeois criticist, an empiriomonist, or even something worse?"

This remark, which seems to Mr. Valentinov to annihilate the materialists, only discloses his virgin innocence on the subject of philosophical materialism. Mr. Valentinov does not understand at all the *real* connection between philosophical idealism and the "disappearance of matter." And *this* "disappearance of matter," which he repeats in imitation of modern physicists, has no relation to the epistemological distinction between materialism and idealism. To clarify this, let us take one of the most consistent and clear Machians, Karl Pearson.[4] For him the physical universe consists of groups of sense impressions. He illustrates "our conceptual model of the physical universe" by the following diagram, explaining, however, that it does not take into account the relation of sizes (*The Grammar of Science,* p. 282):



To simplify his diagram, Pearson entirely omits the question of the relation between ether and electricity, or positive electrons and negative electrons. But that is not important. What is important is that from Pearson's idealist viewpoint "bodies" are regarded as sense perceptions; whereupon the constitution of these bodies out of particles, particles out of molecules and so forth affects the changes in the model of the physical world, but in no way affects the question of whether bodies are symbols of perceptions, or perceptions the images of bodies. Materialism and idealism differ in their respective answers to the question of *the source* of our knowledge and of the relation of knowledge (and of the "psychical" in general) to the *physical* world; while the question of the structure of matter, of atoms and electrons, is a question that concerns only this "physical world." When the physicists say that "matter is disappearing," they mean that hitherto science reduced its investigations of the physical world to three ultimate concepts: matter, electricity and ether; whereas now *only* the last two remain, for they have finally succeeded in reducing matter to electricity. The atom is explained as resembling an infinitely small solar system, within which negative electrons [5] move around a positive electron [6] with a definite (and, as we have seen, enormously large) velocity. It is consequently possible to reduce the physical world from scores of elements to two or three elements (inasmuch as positive and negative electrons constitute "two essentially distinct kinds of matter," as the physicist Pellat says (Rey, *loc. cit.,* pp. 294-95).[7] Hence, natural sciences lead to the "unity of matter" *(ibid.)* (*Cf.* Oliver Lodge: *Sur les electrons,* Paris, 1906, p. 159: "The electrical theory of matter," the recognition of electricity as the "fundamental substance," is "an approximate accomplishment of that to what the philosophers strove always, that is, the unity of matter"; *Cf.* Righi: *Uber die Struktur der Materie,* Leipzig, 1908; J. J. Thomson: *The Corpuscular Theory of Matter,* London, 1907; P. Langevin: *La physique des electrons* in the *Revue générale des sciences,* 1905, pp. 257-276); this is the real meaning of the statement regarding the disappearance of matter, of its change into electricity, etc., which baffles so many people. "Matter is disappearing" means that the limit within which we have hitherto known matter is vanishing and that our knowledge is penetrating deeper; properties of matter are disappearing which formerly seemed absolute, immutable, and primary (impenetrability, inertia, mass, etc.) [8] and are now revealed to be relative and characteristic only of certain states of matter. For the *sole* "property" of matter—with whose recognition philosophical materialism is vitally connected —is the property *of being objective reality,* of existing outside of our cognition.

The error of Machism in general, and the Machian new physics in particular, is that it ignores this basis of philosophical materialism and the distinction between metaphysical materialism and dialectical materialism. The recognition of immutable elements, "of the immutable substance of things," and so forth, is not materialism, but *metaphysical, i.e.,* antidialectical, materialism. That is why Dietzgen [9] emphasized that the "subject matter of every science is endless," that not only the infinite, but the "smallest atom" is immeasurable, unknowable to the end, *inex-*

[1] Louis Houllevigue (1863-1944), French physicist who became a professor at Marseilles University in 1905. The book quoted was published by A. Collin publishers.

[2] Machian, Machism, from Ernst Mach (1838-1916), an Austrian physicist and philosopher, one of the founders of the philosophical current of empiriocriticism. Lenin offers extensive criticism of Mach's views in this book.

[3] N. Valentinov (N. V. Volsky, b. 1879, year of death unknown), Russian philosopher advocating idealism. In Soviet times he was assistant editor of *Torgovo-Promyshlennaya Gazeta* in Moscow. He subsequently worked at the Soviet trade mission in Paris. Emigrated in 1930. Lenin quotes his book *Philosophical Structures in Marxism* (1908).

[4] Karl Pearson (1857-1936), British mathematician, biologist and philosopher advocating idealism. He became a professor at London University in 1884. The book quoted was published in 1892.

[5] The idea of the intricate structure of the atom appeared at the end of the nineteenth century as the result of some major scientific discoveries, including Dmitri Mendeleyev's periodic system, the electromagnetic nature of light, the electron, and radioactivity phenomena. Several models of the atom were offered. Lenin regarded the planetary as the most likely. The idea was expressed as a supposition at the end of the nineteenth century. In subsequent works of Ernest Rutherford (1911) and Niels Bohr (1913) this assumption was on the whole confirmed. The further development of physics enriched the conception of the structure of the atom. Very important in this respect was the forecast made by Louis de Broglie of the wave motion of particles and the subsequent development of quantum mechanics by Erwin Schrödinger, Werner Heisenberg and others. According to modern theory, the atom nucleus is surrounded by a cloud of electrons moving at various orbits (corresponding to definite magnitudes of energy) and forming a single system with the nucleus.

In the further development of physics it was discovered that the atom nucleus consists of "elementary" particles—nucleons (protons and neutrons). Besides the mass and charge, already known at the beginning of the twentieth century, new properties were discovered in the electron and its capacity for transformation into other particles. In addition to the electron some new particles were discovered (photons, protons, neutrons, neutrino, various types of mesons and hyperons) and also the so-called antiparticles.

The process of cognition of the structure of matter resulted in the mastery of nuclear processes and in the utilization of nuclear energy. This heralds a new stage in the industrial revolution (as were steam and electricity in the past), which may have very great importance for the future of mankind.

[6] In the physics of the turn of the twentieth century the particle carrying an elementary charge of positive electricity was called positive electron. The existence of the positive electron in the modern meaning of the word (positron) was predicted in 1928 by British physicist Paul Dirac; in 1932, U.S. physicist Carl Anderson discovered positrons in cosmic rays.

[7] Abel Rey (1873-1940)—French philosopher positivist, who became a professor at the Sorbonne in 1919. What is meant here is his book *La théorie physique chez les physiciens contemporains,* Paris, 1907.

[8] What is meant apparently is the mechanical mass which in classical physics is regarded as matter's eternal and unchanging property.

[9] Joseph Dietzgen (1828-1888), the famous German philosopher, who came from a worker's family. He developed the fundamentals of dialectical materialism at the same time as Marx.

DISAPPEARED"

BY VLADIMIR I. LENIN

haustible, for "nature in all her parts has no beginning and no end" (*Kleinere philosophischen Schriften,* pp. 229-30). That is why Engels gave the example of the discovery of alizarin in coal tar and criticized *mechanistic* materialism. In order to present the question in the only correct way, that is, from the dialectical materialist standpoint, we must ask: Do electrons, ether, *and so on* exist as objective realities outside the human mind? The scientists must answer this question without hesitation, and the answer must be an *affirmative one,* for they recognize without hesitation the existence of nature prior to man and prior to organic matter. Thus, the question is decided in favor of materialism, for the concept of matter, as we already stated, epistemologically implies *nothing but* objective reality existing independently of the human mind and reflected by it.

But dialectical materialism insists on the approximate, relative character of every scientific theory on the structure of matter and its properties; it insists on the absence of absolute boundaries in nature, on the transformation of moving matter from one state to another, which is to us apparently irreconcilable, and so forth. As amazing, from the standpoint of "common sense," as the transformation of imponderable ether into ponderable matter, and vice versa, may appear; as "strange" as the absence of any other kind of mass in the electron save electromagnetic mass may seem; as extraordinary as the fact that the mechanical laws of motion are limited to only one sphere of natural phenomena and are subordinated to the more profound laws of electromagnetic phenomena may be, and so forth—all this is only another *corroboration* of the truth of dialectical materialism. It is mainly because the physicists did not know dialectics that the new physics strayed into idealism. They combated metaphysical (in Engels' sense of the word, and not the positivist, *i.e.,* Humean)[10] materialism and its one-sided "mechanism," and in so doing threw the baby out with the bath water. By denying the immutability of the elements and the properties of matter known hitherto, they ended in denying matter, *i.e.,* the objective reality of the physical world. By denying the absolute character of some of the most important and basic laws, they ended in denying every objective law in nature and in declaring natural law a mere convention, "a limit of expectancy," "a logical necessity," and so forth. By insisting on the approximate and relative character of our knowledge, they ended in denying that the object exists independently of cognition and is reflected approximately correctly and relatively truthfully by the mind. And so on, and so forth, without end.

The opinions expressed by Bogdanov[11] in 1899 regarding "the immutable essence of things," the opinions of Valentinov and Yushkevich[12] regarding "substance," and so forth—are similar fruits of the ignorance of dialectics. From Engels' point of view, only one thing is immutable—the reflection by the human mind (when the human mind exists) of an external world existing and developing independently of the mind. No other "immutability," no other "essence," no other "absolute substance," in the sense in which these concepts were depicted by the empty professorial philosophy, existed for Marx and Engels. The "essence" of things, or "substance," is *also* relative; it expresses only the degree of profundity of man's knowledge of objects; and while yesterday the profundity of this knowledge did not go beyond the atom and today does not go beyond the electron and ether, dialectical materialism insists on the temporary, relative, approximate character of all these milestones in the knowledge of nature gained by the progressing science of man. The electron is as *inexhaustible* as the atom, nature is infinite, but it *exists* infinitely. And it is this sole categorical, this sole unconditional recognition of nature's existence outside the consciousness and perceptions of man that distinguishes dialectical materialism from relativist agnosticism and idealism.

Let us cite two examples of the way in which the new physics vacillates unconsciously and instinctively between dialectical materialism, which remains unknown to the bourgeois scientists, and "phenomenalism," with its inevitable subjectivist (and, subsequently, directly fideist) deductions.

This same Augusto Righi, from whom Mr. Valentinov was *unable* to get a reply to the question which interested him, about materialism, writes in the introduction to his book:

"What the electrons, or electrical atoms, really are remains even now a mystery; but in spite of this, the new theory is perhaps destined in time to achieve no small philosophical significance, since it is arriving at entirely new hypotheses regarding the structure of ponderable matter and is striving to reduce all phenomena of the external world to one common origin.

"For the positivist and utilitarian tendencies of our time such an advantage may be of small consequence, and theory is perhaps regarded primarily as a means of conveniently ordering and summarizing facts and as a guide in the search for further phenomena. But while in former times perhaps too much confidence was placed in the faculties of the human mind, and it was considered too easy to grasp the ultimate causes of all things, there is nowadays a tendency to fall into the opposite error" (*loc. cit.* p. 3).

Why does Righi dissociate himself here from the positivist and utilitarian tendencies? Because, while apparently he has no definite philosophical viewpoint, he instinctively clings to the reality of the external world and to the recognition that the new theory is not only a "convenience" (Poincaré),[13] not only an "empiriosymbol" (Yushkevich), not only a "harmonizing of experience" (Bogdanov), or whatever else they call such subjectivist subterfuges, but a further step in the cognition of objective reality. Had this physicist been acquainted with *dialectical* materialism, his opinion of the error which is the opposite of the old metaphysical materialism might perhaps have become the starting point of a correct philosophy. But the entire environment in which these people live estranges them from Marx and Engels and casts them into the arms of the vulgar official philosophy.

Rey, too, is entirely unfamiliar with dialectics. But he, too, was compelled to state that among the modern physicists there are those who continue the traditions of "mechanism" *(i.e.,* materialism). The path of "mechanism," says he, is pursued not only by Kirchhoff, Hertz, Boltzmann, Maxwell, Helmholts and Lord Kelvin.

"Pure mechanists, and in some respects more mechanist than anybody else, and representing the culmination *(l'aboutissant)* of mechanism, are those who follow Lorentz and Larmor in formulating an electric theory of matter and arrive at a denial of the constancy of mass, declaring it to be a function of motion. *They are all mechanists because they take real motion as their starting point"* (Rey's italics, pp. 290-291).

"... If, for example, the hypotheses of Lorentz, Larmor and Langevin were confirmed, thanks to certain experimental concordance, and were to attain a sufficiently stable basis for the systematization of physics, it is certain that the laws of present-day mechanics would be nothing but a corollary of the laws of electromagnetism; they would only constitute a special case within well-defined limits. The constancy of mass and the principle of inertia would be valid only for average velocities of bodies, the term "average" being taken in relation to our senses and to the phenomena which constitute our general experience. A general recasting of mechanics would result, and hence also a general recasting of the systematization of physics."

"Would this imply the abandonment of mechanism? By no means. The purely mechanist tradition would continue to persevere, and mechanism would follow its normal course of development" (p. 295).

"Electronic physics, which should be ranked among the theories of a generally mechanist spirit, tends at present to impose its systematization on physics. Although the fundamental principles of electronic physics are not furnished by mechanics but by experimental data on the theory of electricity, its spirit is mechanistic, because:

"1) It employs *figurative (figurés), material* elements to represent physical properties and their laws; it expresses itself in terms of perception.

"2) While it no longer regards physical phenomena as particular cases of mechanical phenomena, it regards mechanical phe-

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[10] After David Hume (1711-1766), British agnostic philosopher and advocate of subjective idealism. Lenin's book offers a detailed analysis of the views of Hume and his followers.

[11] A. Bogdanov (A. A. Malinovsky, 1873-1928), a Russian philosopher and Social Democrat who majored in medicine. In philosophy he tried to develop his own system, the so-called empiriomonism (a variety of *Machism).* In Soviet times he was director of the Blood Transfusion Institute, which he founded.

[12] P. S. Yushkevich (1873-1945), a Russian Social-Democrat who was affiliated with the Mensheviks, author of several books on philosophy. He advocated "empiriosymbolism" (a variety of Machism). In Soviet times he left the political arena and was a translator of philosophical literature.

[13] Henri Poincaré (1854-1912), French mathematician and physicist, who became a professor at the Sorbonne in 1886. In his philosophical views he was close to Machism.

QUERIES FROM READERS

QUESTION: I would like to read more about Russia's solution of her problem with the national minorities (Mrs. Marion Mueller, Westwood, New Jersey)

ANSWER: Since its founding, the Soviet Union has followed a policy of respect for all the national minorities, large or small, within its borders. It recognized their equal rights in such early acts as the "Declaration of Rights of the Peoples of Russia," the appeal "To All Working Moslems of Russia and the East" and in the 1918, 1924 and 1936 Constitutions.

All nations, nationalities and ethnic groups have equal rights and are federated on a purely voluntary basis. This was no simple achievement for a country inhabited by more than 100 nationalities, with carry-overs of distrust and national discord from czarist times, when the non-Russian nationalities were brutally oppressed and exploited. This distrust was broken down gradually by a policy of true national equality.

To end discrimination, the Soviet state buttressed the declaration of equality for all nations and nationalities with tangible provisions for exercising the rights it implied. As a matter of fact, many of the national minorities were rescued from the extinction to which czarism had doomed them.

With the assistance of the more developed nations, the once backward peoples built up modern agricultural and industrial economies. Education through the university and professional level was made freely available to hitherto benighted nationalities. Suffice it to say that written alphabets were created for some 50 nationalities.

The various nationalities set up their own national states within the federation. That sovereignty is expressed in the 15 union republics, the 20 autonomous republics, the 8 autonomous regions and the 10 national areas. All are represented, on an equal footing, in the Soviet of Nationalities, one of the two chambers of the Soviet parliament.

State policy is not to assimilate the various nations and nationalities but to provide them with the widest opportunity for economic and cultural growth. Developing as nations, they at the same time move ahead as new socialist peoples, helping one another so that all can make progress.

See the article "Federation and Nation" in the September issue for more detail on the nationalities policy.

QUESTION: I was born in Mogilyov 83 years ago and have a nostalgic feeling to see it again. Could you inform me of this city? Is it on the foreign tourist list? (S. G. Nelson, Paterson, New Jersey)

ANSWER: Mogilyov, like many other cities in the country, has changed greatly. With a population of 160,000, it is Byelorussia's fourth largest city, after Minsk, Gomel and Vitebsk.

It manufactures various engineering items and synthetic fibers. The Electrodvigatel Plant, for instance, makes electric motors used in machine tools and farm equipment. The Kirov Works makes electric bridge cranes, the Kuibyshev Factory synthetic fibers. The city has garment factories, tanneries, glue factories, etc. Its colleges and technical schools train teachers and engineers. There is a museum of folk art and handicrafts, a music school, libraries and a TV center. The Nazis damaged Mogilyov badly, but its architectural relics have been restored. The city has grown a great deal. New residential districts have been added and the old ones rebuilt.

Mogilyov is not on the Intourist list, but you can get what is called a guest visa. See or write Intourist's New York office at 45 East 49th Street, New York, N.Y. 10017, for information.

QUESTION: Is there some information on housing cooperatives (if there are such in the Soviet Union), cooperatives in agriculture and in retail sales? Also, do you have a credit union? (Mrs. Catherine Simonds, Chicago, Illinois; Miss Ruth Shirck, Pekin, Illinos)

ANSWER: Housing cooperatives were first formed in our country in the 1920s. The state helps the movement in every way. Cooperatives to build apartment houses are formed by people, mostly from the cities, usually at their place of work. These organizations build 65 million square feet of housing every year. The land is provided free, and construction is financed by long-term loans from the USSR Stroibank, especially founded for the purpose. The prospective tenant contributes 40 per cent of the total cost as a down payment and pays out the remainder over a 10- to 15-year period. The price ranges from 15 to 22 rubles per square foot, depending on the type of house: brick is more expensive than prefabricated sections.

Our farm cooperatives are known as collective farms, kolkhozes. Members joined voluntarily, pooling their land and farm implements. Buildings, tools and livestock are the property of the collective, not the state. But the state gives the farms considerable assistance. In 1967, for instance, it gave them long-term loans totaling nearly two billion rubles at rates of interest ranging from 0.75 to 2 per cent.

Also widespread in the countryside are consumer cooperatives, which retail manufactured consumer items and buy surplus produce from farmers for urban sale. They handle a large fraction of the commodity exchange between town and country, accounting for about 30 per cent of the entire retail trade turnover. This figure is steadily increasing, which signifies that the purchasing power of the village population is on the rise. Before the war, for instance, five times more trade was done in the urban areas than in the countryside; today it is under three times more.

The consumer cooperatives have more than 55 million shareholders. The size of the share is determined at a general meeting and is the same for each member. Each year shareholders receive dividends. However, in many of these cooperatives the shareholders use the dividends to build kindergartens, laundries, canteens and the like—in other words, to meet priority community needs.

As for credit unions, we have none now. But the State Bank grants long-term loans to rural people for private home-building. For installment buying the trade unions maintain mutual benefit funds, which extend short-term cash loans.

"MATTER HAS DISAPPEARED"

nomena as particular cases of physical phenomena. The laws of mechanics thus retain their *direct connection* with the laws of physics; and the mechanist concepts remain concepts of the same order as physicochemical concepts. In traditional mechanism these concepts were copies *(calqués)* of *relatively slow* motions, which, since they alone were known and most directly observable, were taken . . . as types of all possible motions. *Recent experiments,* on the contrary, show that it is necessary to *extend* our conception of all possible motions. Traditional mechanics remains entirely intact, but it now applies only to relatively slow motions. . . . In relation to great velocities, the laws of motion are different. Matter appears to be reduced to electrical particles, the ultimate element of the atom. . . .

"3) Motion, as displacement in space, remains the only figurative *(figuré)* element in physical theory.

"4) Finally, what from the standpoint of the general spirit of physics comes before every other consideration—the conception of physics, its methods, its theories, and their relation to experience remains *absolutely identical* with the conception of mechanism, with the conception of physics held since the Renaissance" (pp. 46-47).

I have given this long quotation from Rey in full because owing to his perpetual anxiety to avoid "materialist metaphysics," it would have been impossible to expound his statements in any other way. But however much both Rey and the physicists of whom he speaks abjure materialism, it is nevertheless beyond question that traditional mechanics was a copy of real motions of moderate velocity, while the new physics is "a copy" of real motions of enormous velocity. The recognition of the theory as a copy, as an approximate reflection of objective reality, is materialism. When Rey says that among modern physicists there is "a reaction against the conceptual (Machian) and energetics school," and when he ranks the physicists of the electron theory among the representatives of this reaction (p. 46) we could desire no better corroboration of the fact that the struggle is essentially between the materialist and the idealist tendencies. But we must not forget that, apart from the prejudices against materialism common to all educated philistines, the most outstanding theoreticians exhibit a complete ignorance of dialectics.

WHEN GRANDFATHER FROST ARRIVES





By Marina Khachaturova

Photographs by Nikolai Rakhmanov

FOR SOVIET CHILDREN the New Year holidays are always brimful of happy expectations. At the stroke of twelve, when the grownups raise their traditional glasses of champagne to toast the New Year in, the children are fast asleep in their beds, dreaming of the gifts Grandfather Frost has brought them. Of course, in our cosmic era even the five-year-old no longer believes in Grandfather Frost, but he likes to perpetuate the illusion, especially since the gifts do arrive every New Year!

WHEN GRANDFATHER FROST ARRIVES



The winter season with its sleighing, ice skating, skiing, snowball throwing, ice-fort building and snowman making is a great time for children. Among all these pleasures the gaily decorated fir tree, with Grandfather Frost and Snow Maiden in attendance, is not the least. New Year trees are set up everywhere—in homes, streets and yards. The school holiday runs from December 28 to January 10, during which time all the parks, clubs and entertainment facilities are turned over to the children. In spite of the frost they go to the parks to ride in horse-driven sleighs. Grandfather Frost and Snow Maiden, surrounded by little animals, play games with them and present shows on the open stages. During the holiday more children's movies are shown, children's theaters play to capacity, and the theaters for grownups feature their complete juvenile repertoires.

* * *

There was a time when our children looked in their shoes or stockings for their New Year presents. Not these days!











Stockings don't hold enough. On New Year's Eve they push chairs or little tables up to their beds so that they can see the presents piled up the moment they open their eyes in the morning. Or they race to the decorated New Year tree for dolls that shut their eyes and say Mamma, cars that run by themselves and blink their headlights, puzzles, books, paints and whatnot.

For them New Year's Day is as wonderful as their birthdays. And more fun, what with Daddy dressing up as Grandfather Frost and handing out the gifts.

* * *

New Year tree parties are held all through the holidays at schools, parents' places of work and clubs. Parties are so numerous that parents have to try to keep the children from attending too many so they don't get overtired.

New Year tree shows are also held in such big auditoriums as Moscow's Sports Palace, where thousands of children can see the picturesque pageant. After the show gifts are distributed. There are too many children here to dance around the tree, but at the Actors Club, where the pageant is not as sumptuous, the children do dance and sing to their hearts' content.

In the Moscow Kremlin a traditional New Year tree party is given in the Grand Georgiyevsky Hall. Children of high school age look forward to this party, which is staged especially for them through the joint effort of composers, poets, playwrights and actors.

CHILDREN'S CORNER



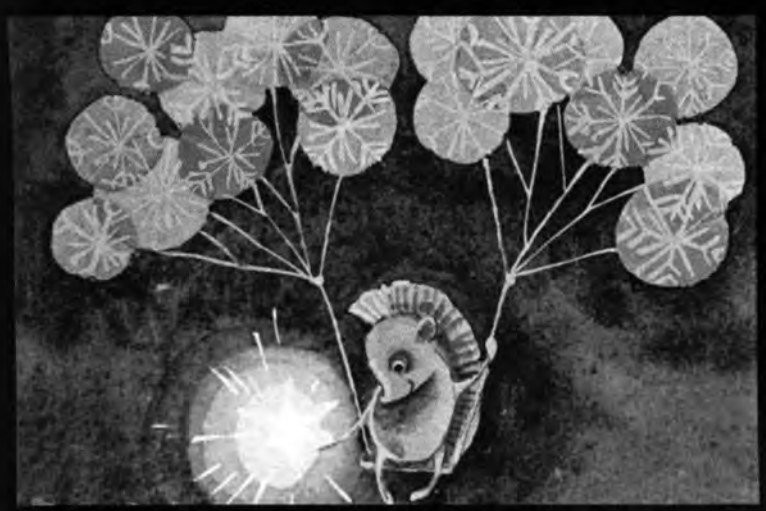


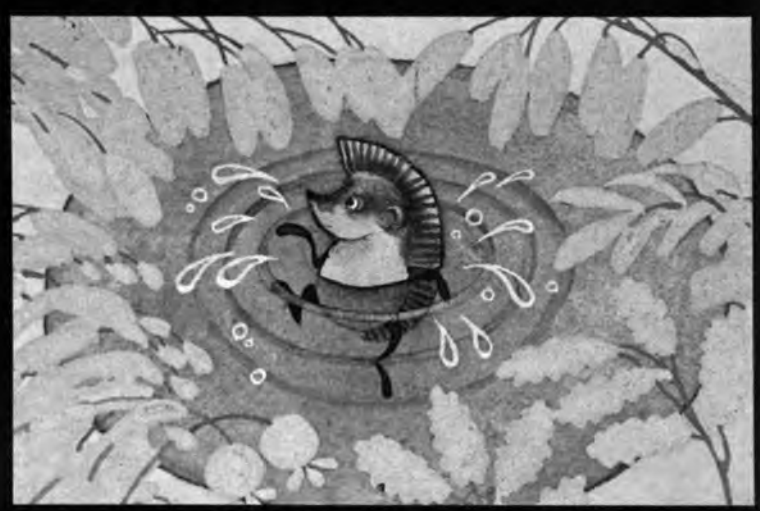
ONE DAY the little hedgehog was walking in the woods. He was eagerly looking forward to midnight, when he would meet the little donkey and the bear cub in the big clearing under the fir tree.



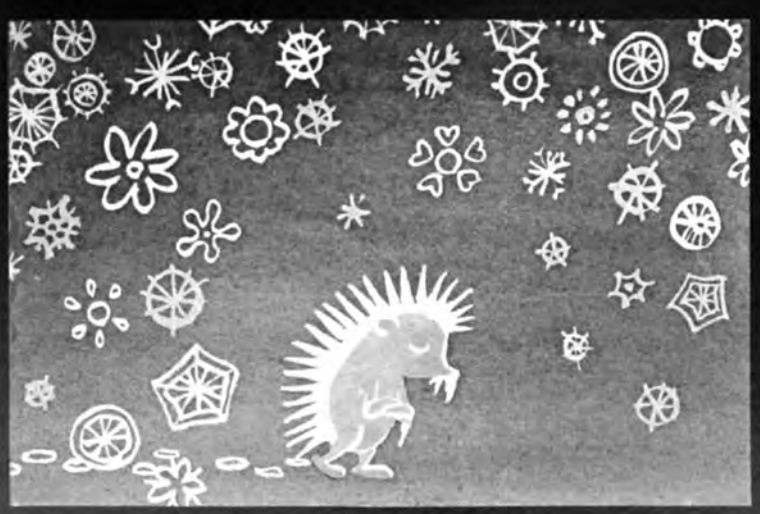


"How wonderful it will be," the little hedgehog thought. "The hares will come and we'll dance. And if the wolf turns up, I'll scratch him. The bear cub will hit him with his paw, and the little donkey will strike him with his hoof."





Meanwhile the snow kept falling. It was so nice in the woods that suddenly the little hedgehog wanted to do something extraordinary, to climb up to the sky and bring down a star.





And so the little hedgehog began to imagine that he could come to the clearing with the star and present it to the little donkey and the bear cub. Then everybody would be happy and laugh and dance.

Continued on page 60

DOSTOYEVSKY'S THE BROTHERS KARAMAZOV

IVAN PYRYEV'S LAST FILM



Ivan Pyryev

By Tatyana Ivanova

Film Critic

HE KNEW how to get what he wanted. In short order he screened three of Dostoyevsky's novels one after another: part of *The Idiot, White Nights* and *The Brothers Karamazov.* He did not finish the last picture. The critics' praise and condemnation, and the viewers' applause and displeasure were posthumous. The unfinished scenes were filmed under the direction of Mikhail Ulyanov and Kirill Lavrov, who played Dmitri and Ivan Karamazov in the film.

Pyryev was one of the most thriving and respected Soviet filmmakers when he suddenly made a turn in the middle fifties to Dostoyevsky. The turnabout was even more paradoxical since Pyryev was the progenitor and principal of a whole trend in Soviet movies. Such popular Pyryev films as *The Pig Tender and the Shepherd, Tractor Drivers, Kuban Cossacks* and others were essentially the movie equivalent of operettas. Saturated with bright colors and optimistic tunes and crowded with upstanding, invariably successful and cheerful heroes, they pictured a simplified and conventionalized world.

Some people were enthusiastic about his pictures; others treated them with a touch of scorn. He was such a conspicuous movie figure and had such appeal and vitality that the fierce arguments between his admirers and critics raged for decades. But the thing they all agreed on was that he had talent.

It is difficult to imagine more polar opposites than the playful optimism of Pyryev's musicial comedies and Dostoyevsky's intense and tragic drama of uncontrollable passions, vices and aspirations. Nevertheless Pyryev decided to screen Dostoyevsky.

The Idiot was followed by *White Nights.* Then, with an interval of eight years and nearly a year after the director's sudden death, a large three-picture serial, *The Brothers Karamazov,* was released. Pyryev seemed to have anticipated that this film was to be his ultimate effort, and he made preparations for it with special care. He hesitated to start shooting even when his right to classical productions had been vindicated and his loyalty to Dostoyevsky, his persistent return to that great Russian writer, had silenced all skeptical voices.

He knew and could freely quote essays and studies on Dostoyevsky. The pages of his copy of *The Brothers Karamazov* could well belong to a professional student of literature. He may have had superiors in literary scholarship but not in his knowledge and perception of Dostoyevsky for cinema purposes. His sense of the "way Dostoyevsky should be staged" must have been vast in his third screening of that writer. Having finally started, he directed the rehearsals and shooting with certainty and artistry. But one question continued to bother him: How should Dostoyevsky be filmed today?

In an interview he gave when he started shooting, he said: "Maxim Gorky once wrote that Dostoyevsky's talent can, perhaps, be matched only by Shakespeare's. Now, how should we play Shakespeare today? How should we play Dostoyevsky? How should an actor read these seemingly careless, stumbling lines pulsating with passion? A theatrical reading is out of the question. However, the naturalistic mutter, the actor's "speech abandon" accepted in the movies today is, perhaps, as or even more inappropriate. The right answer is to aim at the most difficult: to fuse the natural rhythm of dialogue and the music of actor's speech."

Pyryev knew how his Western colleagues had screened Dostoyevsky, for example, Luchino Visconti's *Le Notti Bianche (White Nights)* with Marcello Mastroianni and Maria Schell and *The Brothers Karamazov* directed by Richard Brooks and starring Yul Brynner and Maria Schell again. But while giving full credit to the Italian and American productions, and with particularly high regard for Yul Brynner's Dmitri Karamazov, Pyryev could hardly find his answers in the experience of these directors. Neither Visconti's fastidious modernization of Dostoyevsky, nor the "exotic emphasis" on "fatal drama" which he saw in the film directed by Brooks could solve his problems.

The fact is that Pyryev had "his own" Dostoyevsky just as every theater producer or artist has "his" Shakespeare, "his" Balzac or "his" Goethe.

The script of Pyryev's *The Brothers Karamazov* is composed of four parts of the sophisticated psychological novel. Deletions and condensations were apparently unavoidable. But in his screen version, Pyryev did his utmost to convey the novel as comprehensively as possible. Consequently it expresses not only the spirit but also the letter of the book. It was obviously done by a person finely tuned to Dostoyevsky, anxious to preserve all the uniqueness of dialogue and style. To avoid simplification was, perhaps, what most concerned Pyryev throughout.

Right at the outset he abandoned the idea of reinterpreting or modernizing. A



"He was only twenty, his brother Ivan was in his twenty-fourth year at the time, while their elder brother Dmitri was twenty-seven. First of all, I must explain that this young man, Alyosha, was not a fanatic, and, in my opinion, at least, was not even a mystic. . . . He was simply an early lover of humanity, and that he adopted the monastic life was simply because at that time it struck him, so to say, as the ideal escape for his soul struggling from the darkness of worldly wickedness to the light of love."

Andrei Myagkov as Alyosha

"It is impossible to picture to oneself the shame and moral degradation to which the jealous man can descend without a qualm of conscience. And yet it's not as though the jealous were all vulgar and base souls. On the contrary, a man of lofty feelings, whose love is pure and full of self-sacrifice, may yet hide under tables, bribe the vilest people, and be familiar with the lowest ignominy of spying and eavesdropping."

Mikhail Ulyanov as Dmitri



"Yes, and you too perhaps quite misunderstand me, dear young lady. Maybe I'm not so good as I seem to you. I've a bad heart; I will have my own way. I fascinated poor Dmitri Fyodorovitch that day simply for fun."

Lionella Pyryeva as Grushenka



Dmitri Karamazov: *"I accept the torture of accusation, and my public shame, I want to suffer and by suffering I shall be purified. Perhaps I shall be purified, gentlemen? But listen, for the last time, I am not guilty of my father's blood."*





". . . Fyodor Pavlovitch Karamazov, a landowner well known in our district in his own day, and still remembered among us owing to his gloomy and tragic death, which happened thirteen years ago, and which I shall describe in its proper place. For the present I will only say that this 'landowner'—for so we used to call him, although he hardly spent a day of his life on his own estate—was a strange type, yet one pretty frequently to be met with, a type abject and vicious and at the same time senseless. But he was one of those senseless persons who are very well capable of looking after their worldly affairs, and, apparently, after nothing else. . . ."

Mark Prudkin as Fyodor

"There was, in fact, something surprising in the illogicality and incoherence of some of his desires, accidentally betrayed and always vaguely expressed. Smerdyakov was always inquiring, putting certain indirect but obviously premeditated questions, but what his object was he did not explain, and usually at the most important moment he would break off and relapse into silence or pass to another subject."

Valentin Nikulin as Smerdyakov, Kirill Lavrov as Ivan

production which could be entitled *The Brothers Karamazov, 1968* did not tempt him. He was even less attracted by an academic picture which would illustrate a venerable "classical work." What did he want then?

The answer could be a discourse on the abiding values of a great novel. A classic writer is classic just because his work is meaningful long after he is dead. But a generalization like this will move the artist only when he has found his particular "nerve" or "clue," a deeply personal approach to a classic. "I don't know about other people, but for me the most vital part of Dostoyevsky is his indestructible and inexhaustible yearning for life." This is how Pyryev defined his personal attitude toward *The Brothers Karamazov*. It applies to the film he made.

Pyryev's last picture is full of a vitality based on deep, rich, powerful contrasts. Like Dostoyevsky's novel, the picture is permeated with a feeling of justice, perjured and betrayed, refusing to live any longer in the old way, clamoring for a new organic integrity for man, seeking to resurrect every human personality deadened by the inhuman pressures of the past.

The picture was indeed born of Pyryev's mature love of life. Life erring, permeated with passions and steeped in vices, but groping for truth, goodness and beauty. Life attached to simple flesh but dreaming of spiritual purity.

It is that very love of life, thirst for life, almost shameful but irresistible, of which Ivan Karamazov repents in his conversation with his brother Alexei. In this sense Pyryev follows the novel faithfully, sensitive to one of Dostoyevsky's innermost motivations.

The very first shots of the film introduce the feverish, almost nightmarish atmosphere. Having decided to film *The Brothers Karamazov* in color, the director, together with artist Stalen Volkov and cameraman Sergei Vronsky, confined the acting to interiors. They filmed outdoors only occasionally and rather than a defect of the picture. No film treatment could stand comparison with the book.

For all that, Pyryev's film does convey Dostoyevsky's fundamental ethical overtones. What is the ultimate guarantee of spiritual resurrection from the "abyss"? asks Pyryev. Certainly not the wallowing in lust of Karamazov senior. Nor is it Ivan Karamazov's cold, abstract, searching ratiocination. The human heart remains for Pyryev the only unalterable value—Dmitri Karamazov's living heart, tormented by love, hate, rage, yearning for the ideal, bleeding and yet pulsating. Accordingly, the forces and stresses of the film are arranged in depth. Mitya Karamazov is Pyryev's protagonist, and Dmitri and Grushenka are in the foreground.

Dostoyevsky gave the title "The Confession of the Ardent Heart" to several chapters of his novel. It is "The Confession of the Ardent Heart" that Mikhail Ulyanov as Dmitri Karamazov acts out. His character is complex, contradictory and evolves on many planes. A libertine, a duelist, a person who could not even get through school, a former officer, a man of uncontrolled passions . . . and yet a nature agonizingly sensitive, generous, kind, chivalrous. At the same time, a suspicious almost maniacal character aggravated by serious hereditary defects. Ulyanov acts with authentic emotional intensity as he moves from one dramatic climax to another. However, his best moment is in that very demanding scene when Grushenka does not meet him as they had arranged. Almost insane with jealousy, he grabs a copper pestle and rushes to his father's house. Then he returns, his hands bloody, and learns from a maid's grandniece the whole truth about Grushenka. She had waited all day for a mysterious letter, received it and left him for her former lover, a Polish officer. Ulyanov's is the face of a man who has just been condemned—shocked but strangely calm, already removed from everything he has experienced. His voice is not agitated, it is lifeless, so low that we hardly make out the words: "Mitya won't ruin anyone anymore. And please don't cry, please. I won't meddle with Grushenka. I'll remove myself forever."



Mark Prudkin of the Moscow Art Theater plays Fyodor Karamazov, the same part he played in the stage version for years. Incidentally this was his screen debut at the age of 70. Other fine performances are given by Kirill Lavrov as Ivan Karamazov, Andrei Myagkov as Alexei Karamazov, Lionella Pyryeva as Grushenka, Svetlana Korkoshko as Katerina Ivanovna and Valentin Nikulin as Smerdyakov. "We have good actors," Pyryev said about those he selected for the film from dozens of candidates from various theaters and cities.

In his last work the director was after a special depth and concentration of performance. He coined his own working term "eye-to-eye play" to describe the kind of acting he wanted. He would not tolerate the slightest inaccuracy in the rhythm of a line. He

used mostly closeups, relentlessly cutting anything less than the perfection he aimed at. He was never tired of repeating: "The eyes sometimes say more than the dialogue. In our film the actor's eyes must be the basic expressive way of revealing feelings and relationships."

Ivan Karamazov is Dmitri Karamazov's opposite in the film. Ivan Karamazov personifies the capricious, audacious and strange complex of philosophical and ethical attitudes that preoccupied Dostoyevsky at that time. Does God exist? If He does, why is the world so unjust and so imperfect? But if God does not exist, then everything is permitted; then there are no ethical laws for a man. This is what torments Lavrov as Ivan Karamazov: "No, it is not God that I cannot accept; it is the world He has created, God's world that I cannot accept and cannot agree with at all."

The opposition of Dmitri and Ivan Karamazov gives the film a dynamic equilibrium of dramatic contrasts. But, as we have said,



"It was my fault! Mine! My wickedness! . . . He did it through me. I tortured him and drove him to it. I tortured that poor old man that's dead, too, in my wickedness and brought him to this! . . . Judge us together. Punish us together. I will go with him now, if it's to death!"

"The elder Zossima was sixty-five. He came of a family of landowners, had been in the army in early youth and served in the Caucasus as an officer. He had, no doubt, impressed Alyosha by some peculiar quality of his soul."

Pavel Pavlenko as the elder Zossima

the drama of spiritual confrontation recedes to the background on the screen; the drama of passions, the drama of Dmitri Karamazov, becomes the foreground. Therefore, it is not through any fault of the actor but because of the director's over-all concept that Ivan Karamazov's intellectual probing looks somewhat bleached, like a dry point etching over a red-hot riot of scarlet, of suffocating browns and ominously purple splashes.

What is the verdict? The film's extraordinary emotional intensity has been the subject of much controversy. Granted the impossibility of putting the whole novel into a film, there is this judgment: Among the pictures made in recent years, this one, for its drama, passion, and personal vision, joins the high company of Sergei Bondarchuk's *War and Peace*, Alexander Zarkhi's *Anna Karenina* and Iosif Kheifitz's *The Lady with the Dog*. In Pyryev's production everything is in spiritual extremes, "in fever and synthesis," as Dostoyevsky himself said about his novel.

STUDENT:

Don't Be Self-Satisfied

Continued from page 37

do scientific research even while at the Institute. Their activities are headed by highly qualified teachers. The students write scientific papers which are the result of research much broader and deeper, naturally, than the work provided for by the curriculum. From time to time they make reports at special conferences called by the SSS.

In our department we have set up, on a voluntary basis, a kind of local university of social sciences. Its rector, the deans and students are students from our department, while lectures are delivered by our professors and instructors. There the kids study, in their spare time, philosophy, international affairs, ethics, esthetics (elements of these subjects are included in the regular curriculum, but here they are given much more thoroughly).

We have a book club—Photon—for those who want to try their hand at writing and doing literary translations, and a film-lovers club, which organizes debates and reviews of films, including long-forgotten ones.

Several years ago the students set up a club called Open Forum. It holds regular meetings at which scientists, actors, composers, sportsmen, well-known journalists and international affairs commentators speak and perform.

In general, we have meetings and parties very often. As a rule, they are held in the institute dining hall, which also serves as an evening café. We call it Lingua. And there are always notices in the lounge announcing some sort of event there. So far as I know from my friends—students at different Moscow institutes—our parties are always very popular among young Muscovites, and it is not easy to get an invitation to one.

The reason for this is, evidently, that we try to make the program of each party unlike any of the previous ones, try not to limit ourselves to the one standard form of entertainment—dancing (though our jazz bands and beat groups are sufficient bait in themselves). The students write and perform satirical reviews or, as we call them in this country, *kapustniki*. Their content is usually based on local material, but their humorous points are easily understandable to any student or even to an outsider. We often organize amateur concerts and either perform in them ourselves or invite students from dramatic institutes.

All these activities are coordinated by the Komsomol (Young Communist League) Committee of the institute and the department Komsomol Bureau. The student Komsomol and trade union organizations are gradually being given greater rights. This gradual "transfer of power" diversifies our social life, but at the same time it places increasing responsibility on the student, for himself and for his comrades. And please don't forget that the kids in our department are mostly young in comparison with other institutes. Almost all our students came here directly from school, while in many institutes there are a great number of students who have either worked for several years first or served in the army.

Naturally, even in our department one can come across someone who prefers to be passive, to keep to himself, and who reasons more or less as follows: Why get excited? I've entered the institute, I receive a stipend, my professors are highly qualified, so all I have to do is study hard and become a good specialist. From their point of view, they are quite right. True, nothing can stop you from studying as hard as you like, and you needn't really worry about anything else. But to me this is a parasitical outlook. If at our young age a person is self-satisfied, feels snug inside his own little shell, what on earth will happen to him later?



the SEA LION

Continued from page 21

but she could not tell her father to go away, so at such times she picked up a piece of chamois and polished the ivory.

"Why a sea lion and not an idol?" her father asked with a puzzled sigh. "Idols fetch a better price."

He moved away, but it was some time before Emul recovered her former mood, her sense of excitement, when the chisel painstakingly pared away whatever was superfluous and unnecessary, whatever prevented the graceful sea lion from at last emerging from his ivory prison. The sea lion was now in a position from which he would be in the air in a second or two. The most interesting thing was that Emul had not made him like that; he had been like that all along. She only needed to clear away everything that prevented him from preparing to leap.

Sometimes, to revive the keenness of her vision and her ability to discern the finest details, Emul would take out Grandfather's precious tusk and study it intently. Keener vision brought excitement and impatience.

Meanwhile, time was growing short. The ship was approaching the shores of Chukotka full speed ahead. Prokhorov, who had predicted an improvement in the weather, now walked around as though he himself had tamed the wind and swept the clouds from the sky. Within the next few days nature would gather strength for the final assault against the remnants of the brief northern summer.

The evening before the ship arrived Emul worked all night. Finally she carefully rubbed the finished sculpture with a scrap of chamois and placed it on the edge of the table.

The candles crackled softly. Outside the window lay silence mixed with the thick, cold darkness of the autumn night. Only by listening intently could she hear the faint lapping of the waves and the drowsy breathing of the weary ocean.

The sea lion stood poised to leap into his native ocean depths. But Emul's heart was not filled with joy. She felt strangely empty and sad. She felt as though she had pulled the sea lion out of her heart and placed it on the table, and all the days spent carving it from the walrus tusk had been days spent in anguish, tearing an image of beauty out of her soul.

But then she recalled Gennadi's eyes and imagined how they would light up with joy and excitement, and her heart grew lighter.

She examined the sea lion critically. At first glance there was nothing special about the piece of darkened walrus tusk. You could make out the rock and the sea lion poised to dive. But you had to look closely to see that unique line Emul had succeeded in conveying as she carved it. That line held everything—a tender song, a gentle hint and unspoken affection. But you had to look.

With a sigh of regret Emul wrapped the sea lion in a piece of chamois and laid it in the box she had prepared for it.

The next morning she threw a raincoat over her shoulders and cautiously slipped out of the house into the cold grayness of the approaching day. The smell of freezing water struck her nostrils. A beam from the lighthouse played over the quiet sea in search of a rendezvous with the ship. As Emul walked along the shore of the silent, cold ocean, she felt that she herself was that bright beam of light, alone with the vast, dark expanse of water.

From the shore she walked up the slope to the village and the silent street. Dogs that had spent the night outside lifted their muzzles and looked at the solitary girl in surprise. Emul reached the house where the archeological expedition was staying, stood beneath the dark windows, and then slowly walked down the street on the side closest to the sea.

She walked slowly, very slowly, but soon reached her home all the same. She did not want to go inside and turned back to the sea.

A low sun was dispelling the darkness over the sea. Suddenly Emul saw a ship approaching the shore. The ship advanced in silence as if on invisible wings. It sparkled with lights that played on the water. Emul ran back to the archeologists' house and rapped loudly on the window.

"The ship's come! The ship's come!"

The collective farm power generator started up at that moment, and dozens of electric lights flashed on in the village. "From the sea the village must look as handsome and majestic as the ship approaching the shore," Emul thought proudly. The ship gave a rich, deep hoot, and then its anchor chain rattled.

Emul hurried home to dress for work. It would be a busy day, with many people to feed. Whenever a ship put in, all the inhabitants—from the village chiefs to teenagers—turned into stevedores. Since the women helped too, there was no one to prepare meals at home and everyone ate at the restaurant.

People were already waiting for the restaurant to open as Emul approached, among them Gennadi Barashev and his comrades. He greeted Emul like an old friend.

"How goes it?" he asked.

"All done," Emul replied. "I'll bring it to you this evening."

"Good for you, Emma!"

The day passed in a turmoil of running back and forth. Although extra people had been hired to help in the kitchen, diners complained about the slow service, and the waitresses were run off their feet.

Supper time finally arrived, and the stevedores trooped in, smeared with coal dust, leaving black footprints on the floor. There had been no time to change. Prokhorov brought the news that a storm was moving in toward the shore. The ship had to be unloaded before the weather broke.

The archeologists also trooped in for supper. Gennadi Barashev approached Emul to remind her that he was expecting her at his place after she finished work.

"We've started loading," said Gennadi.

"I'll be there," Emul promised.

After work she ran home. The house was empty. Her father and mother were down at the shore helping unload the ship. Emul combed her hair carefully before the big mirror and touched her mouth with lipstick. She put on her new woolen sweater and her new red Japanese boots.

People stared as she walked down the street, for no one was dressed up that day. Emul reached the house and hesitated in front of the door. She could hear excited voices inside. Heavy cases scraped along the floor and bottles clinked. She had to knock several times before someone called for her to enter.

"Emma!" Gennadi Barashev exclaimed joyfully. "At last you've come!"

Suitcases were being packed. The beds were strewn with underwear, cameras, shoes, bead-embroidered slippers and an enormous number of idols. Each archeologist was carrying away at least a dozen.

Emul noticed that almost all the idols had been made hurriedly. Some were not even properly polished.

"Have you brought it?" Gennadi asked impatiently.

"Yes," Emul said in a low voice. She started removing the cloth in which the little wooden box was wrapped.

Barashev's friends dropped what they were doing and crowded around. Emul would have preferred to present the sea lion to Gennadi when they were alone, without anyone watching, but that was obviously impossible.

"Oh-ho! A whole box!" one of the archeologists exclaimed.

Emul took off the cover and handed the box to Gennadi. Puzzled, Gennadi thrust in his hand and drew out the sea lion.

Emul watched him. First his face expressed curiosity and a certain puzzlement. But then what Emul saw dismayed and distressed her. Barashev was obviously very disappointed. He turned the sea lion round and round as if looking for something special about it. But there was nothing other than that single line which expressed everything! The line was not easily discerned. It could not be seen at close range in such a bright light.

Gennadi Barashev was still young, and his face had not yet coarsened. He could not hide his disappointment with a smile.

"Yes, it's wonderful, of course," he said slowly in a tone of forced heartiness. "Except that idols are the fashion nowadays. How will I be able to show my face in Leningrad without any?"

Emul turned and fled. She heard Barashev call and thought he started after her, but she did not turn around. She fled from the house and the ship, through the village and out into the tundra, beyond the lighthouse, where the hillside rises higher and higher until it touches the clouds.

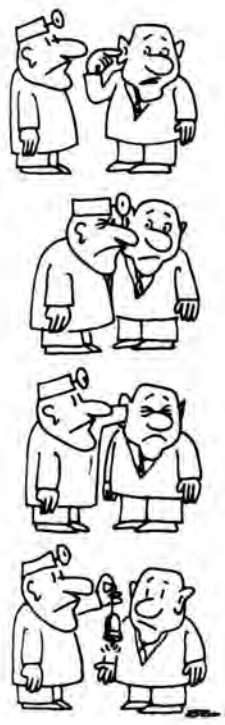
She sat down on a rock on the hill facing the sea and stayed there until late in the evening. Tears of resentment and bitterness kept welling up. From below she could hear the creak of the ship winches.

The sun went down and it grew chilly.

Emul wiped away her tears and rose. The ship was weighing anchor. It gave a long farewell hoot.

She slowly descended the hill to the village and her home.

Emul looked about her with tear-washed eyes, and her heart lifted in joy. The gift she had thought forever lost had been restored to her. She again saw each blade of grass and each pebble. The horizon was a distinct line, and the blue of the sea was a thick black, and the clouds in the sky had substance, and her reflections were no longer sad. There remained only the faint melancholy and the unrealized tenderness that the big ship was carrying away.



OLEG TESLER:

He has them laughing



By Mikhail Andrasha

THESE DAYS ex-physicians, -architects, -engineers and -teachers, rather than professional artists, seem to be supplying Soviet magazines with humor illustrations and cartoons.

Oleg Tesler (born 1938), who has become popular in recent years, is typical of the breed. He got to be known as an artist-humorist when he was working on a big electronic computer in a railway control center. The computer prepared the input data for compiling new timetables and freight flow diagrams. Tesler was well trained for his profession—he had studied at the Moscow Institute of Railroad Transportation Engineers.

But one day, as he tells it, he decided that "the machine was smarter than man." In self-defense he became a humorist.

When a Moscow magazine offered him a job as a staff artist, he left—without too much regret—the electronic robot that carried out his orders with such breath-taking speed. But Oleg Tesler has not forsaken his old love. Computers decorated with hundreds of dials keep popping into his humorous drawings. "Are robots really smarter than we are?" the former computer engineer seems to be saying.

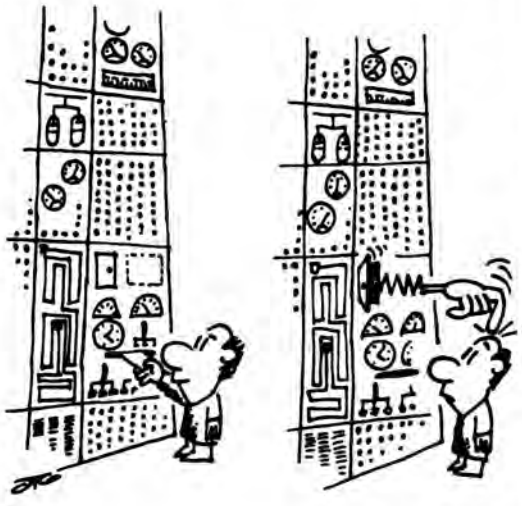
Moscow publications are glad to print his drawings. Foreign publications are, too.

Some time ago Literaturnaya Gazeta reprinted a cartoon from a Berlin newspaper. Tesler rang up the editors to ask why his name had not been listed under the drawing.

"Was that your cartoon? Then you'd better phone Berlin," they told him.

"It's not worth calling such a long distance for a drawing. Especially since they'll probably pass the buck to some newspaper at the end of the Earth. Cartoons travel all over the world. Sometimes they come home again, but without a signature," says Oleg Tesler.









USSR: A PHOTO STORY

A BIG Soviet photo show will tour Washington, New York, Chicago, San Francisco, San Antonio and New Orleans from mid-February to late September next year.

It is part of the USA-USSR program for cultural exchange. Since the program is a two-way street, an American exhibition, Public Education-USA, began a year's tour of the Soviet Union last July. Scheduled to visit six cities, it has been drawing large crowds.

The keynote of the Soviet photo show is people at work, study and play. The locales pictured range from Russia's big metropolitan centers to the Arctic tundra, sunny Black Sea beaches, the Siberian taiga, the Kazakh steppes, snow-capped Caucasian peaks and Central Asian deserts. Dramatic photos will show the architecture of ancient Samarkand, Bukhara, Novgorod, Suzdal and Moscow as well as of the new Soviet cities.

Documentary photographs will trace the country's success in building a new society. Since the show coincides with the centennial of Vladimir Lenin (1870-1924), it will feature the contributions of the founding father of the first socialist state.

A total of 1,200 pictures—black and white and color—will be displayed. They are the work of more than 350 photographers: leading professionals in Moscow, Kiev, Tallinn, Vilnius and other cities, and members of amateur photo clubs in Novosibirsk, Ryazan, Tbilisi and Vologda, who responded to the request of Novosti Press Agency, the sponsor.

Among the exhibitors are camera veterans of the New York show of 1939—Max Alpert, Yakov Khalip and Galina Sanko of Moscow and Boris Kudoyarov of Leningrad.

The impressive group of photographers exhibiting includes Gennadi Koposov, whose specialty is the North, portraitist Vasili Malyshev and landscape photographer Alexei Bushkin—all gold medal winners at international photo shows. Represented also is the work of traveler Vadim Gippenreiter, sports correspondents Lev Borodulin of Moscow and Valentina Dedova of Kiev, landscape photoartist Alexei Perevoshchikov of the Northern Urals, ballet photographer Yevgeni Umnov and many others.

A variety of styles and printing methods promises to make the show an artistic landmark.

SCHEDULE

Washington, D.C., Sheraton Park Hotel, February 13 to March 1

New York, New York, Gallery of Modern Art, March 14 to April 5

Chicago, Illinois, Museum of Science and Industry, April 20 to May 18

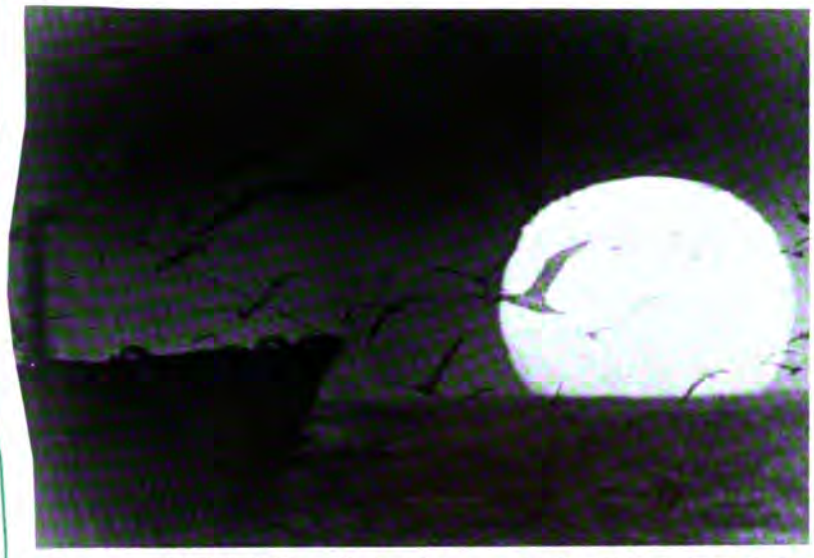
San Francisco, California, Masonic Auditorium, June 4 to July 2

San Antonio, Texas, Convention Center, July 19 to August 13

New Orleans, Louisiana, Municipal Auditorium, August 29 to September 25

Admission free everywhere.

NEXT ISSUE



Some scientists believe that we know more about the surface of the Moon than we do about the ocean. While interest in the Moon is by no means diminishing, still man is looking more and more to the ocean in his search for a solution to the problem of providing the Earth's growing population with sufficient food. In this quest he is finding that the ocean holds tremendous resources of food and minerals, too. Academician Lev Zenkevich, a leading Soviet authority in oceanographic research, discusses present trends in his field and projects for the future. An article about the ocean's resources predicts that just as the transition from hunting to farming on land played an enormous role in the evolution of man, so will the changeover from "hunting" to "farming" the ocean play a decisive role in feeding man. Besides staving off the threatening food shortage, the ocean may also hold the solution to another problem—the replenishment of the world's swiftly diminishing mineral resources.



Over the past few centuries Russian oceanographers have filled in many blank spots in the map of the world ocean. They helped in the investigation of Asia's Pacific coast, Antarctica and the southern seas. An article describes their courageous explorations. Another article tells about the special effort now being made to explore the Arctic Ocean. A major aspect of the program is a study of its depths and bed by means of research stations, the first of which was established in June 1937. At that time it was thought the ice in the vicinity of the North Pole was stationary. Nine months later scientists found that the station had drifted almost 1600 miles. In 1950, when the second station was established, it was called a "drifting" research station. To date 18 such Soviet stations (and American stations, at the rate of one or two a year since the middle fifties) have been set up. Their findings make a fascinating article. There are also articles on abyssal life, typhoons, meteorology and pollution. But they all add up to the fact that the ocean, like outer space, belongs to all humanity, and all countries must cooperate in investigating and exploiting it for the benefit of man.

The material about Lenin includes letters from Lenin to his mother, and an excerpt from a book of reminiscences by Lenin's secretary.

An article on the history of Russian songs—from folk music to pop tunes, with notes and words as well as English translations for several of them.

The Angara River Valley program.

SNOWFLAKE

Continued from page 52

"What a lovely thing it would be," the little hedgehog thought, "if I could find a flower called the flower-that-makes-everybody-happy. I would pluck it out from under the snow and set it up right in the middle of the clearing."

As if in answer to the hedgehog's thoughts, the old fir tree said: "I know where that flower grows, little hedgehog. Two hundred fir trees away at a frosted tree stump you will find the spring that never freezes, and there is your flower on the very bottom."

Off raced the little hedgehog, ticking off the fir trees till he found the frosted stump and the spring that never freezes. He bent over and yelled out in surprise to see the magic flower spread its petals so near.

"I know what I'll do," said the little hedgehog. "I'll jump into the water and gently pick the flower out."

So the little hedgehog jumped into the spring, but when he opened his eyes underwater, he couldn't see the flower any longer.

"Where can it be?" the little hedgehog wondered and climbed up the bank. Again at the bottom he could see the magic flower.

"Now what's the matter?" the little hedgehog sniffled. Again he jumped into the water but again saw nothing.

Shivering to the tip of his last needle, the little hedgehog raced home through the woods.

"What's the matter with me?" he cried, not noticing that as he ran, he was turning into a snowflake flower, as white as the snow.

All of a sudden the little hedgehog heard gay music and saw the clearing with the fir tree in the middle and his friends, the bear cub, the little donkey and the hares, dancing.

"Look!" the little donkey exclaimed. "What a pretty flower!"

And all the animals began to dance around the little hedgehog.

"How happy we all are!" cried the bear cub. "What a pretty flower! What a pity the little hedgehog isn't here!"

"But I am here!" the little hedgehog said, shivering.

But he was so cold that his voice was just a squeak. His friends could not hear him.

When the animals had finished dancing, they stood in a circle around the beautiful flower. Inside the circle it was very hot. The little hedgehog could feel the cold, snow-white flower that covered him getting warmer and warmer. One by one, the petals of the snowflake fell to the ground.

The bear cub, the donkey and the hares looked very closely, till they could see the little hedgehog again. Then they knew that it was really their friend, who had changed himself into the flower of happiness, just for them.

WEATHER CHANGERS

U.S. METEOROLOGISTS TOUR SOVIET UNION



Professor Louis J. Battan of the University of Arizona with a young Soviet colleague, senior radar engineer Boris Tkhamokov (right), whose special field of interest is the Doppler effect in cloud study.



Left to right: Benito Kiziria of the Soviet Hydrometeorological Service, Professor Georgi Sulakvelidze and Ivan Burtsev of the Alpine Geophysical Institute and Archie M. Kahan of the Bureau of Reclamation.



il prevention field rip. Dr. George S. enton, director of the research laboratories of the Environmental Science Services Administration at oulder, Colorado, tour leader, plans day's agenda with American and oviet colleagues.



Continuous discussion, even en route to the dining room. Left to right: Benito Kiziria; Dr. Helmut K. Weickman, ESSA research laboratories; Professor Georgi Sulakvelidze; Dr. Fred D. White of the National Science Foundation.

SEVEN American meteorologists recently spent a month in the USSR studying Soviet weather modification research. Their tour was part of the scientific and cultural exchange program. A group of Soviet scientists was scheduled to make a return visit to the United States.

The Americans stopped briefly in Moscow and then got right into the vortex of their professional interests—the Eighth USSR Conference on the Physics of Clouds and Weather Modification in Tbilisi, the capital of Georgia. Two of the visitors reported on their work. Dr. Joanne Simpson of the Atmospheric Physics Laboratories in Florida spoke of modification experiments with tropical cumuli. Dr. Simpson and her colleagues had planted in the clouds a special reagent that doubled the precipitation. Dr. Helmut K. Weickmann of the Environmental Science Services Administration in Boulder, Colorado, reported on a study of hailstorms he did using three planes, radar and infrared devices.

Opinions were exchanged on modifying cloud structure—either destroying clouds or hastening their growth to induce precipitation at the right time and place—and on preventing rainstorms and hail. A good deal of hail research is being done in the Soviet Union, and after the conference the American scientists went to see an antihail system in operation in Georgia—rockets shooting at hail clouds in the Alazan Valley.

From there the guests went north, crossing the Caucasus in a bus to the terrain of the Alpine Geophysical Institute. Their first stop was at the institute's research center for snow and avalanches at the foot of Mount Elbrus, the highest peak of the Caucasus and of Europe (18,480 feet). The visitors were taken through the laboratories and around the countryside. They saw the sparkling snow-capped summits and the rocky gorges overgrown with birch and spruce. It reminded some of them of home —especially Archie M. Kahan of the Bureau of Reclamation in Boulder, Colorado.

The meteorologists, from Colorado, Arizona and the East Coast, commented repeatedly on Soviet cordiality and hospitality. "This is what pleased us most of all," said Dr. Kahan, summing up his impressions. Cordiality and frankness prevailed at meetings in laboratories, on expeditions and, of course, at table. The American scientists will probably best remember the supper in the cold Elbrus area where the hosts, led by Hussein Zalikhanov, deputy director of the institute, and the guests teamed up for some mutual drinking to each other's good health.

The visitors were particularly interested in the hail fighting methods being studied in the Kuban area, Northern Caucasus. The researchers are scientists of the Alpine Geophysical Institute under Professor Georgi Sulakvelidze. Their antihail techniques, now past the experimental stage, are in use by agricultural agencies. All told, about 7,400,000 acres of Soviet cropland are covered by hail protection.

Dr. George S. Benton, director of the research laboratories of ESSA at Boulder, was impressed with the weather modification projects, especially the antihail project: The Soviet Union, he said, is ahead of the United States in this field. Dr. Benton noted that for the USA other problems were more pressing than hail, for instance, combating water shortages—the creation of rainfall. For the Kuban wheat belt precipitation is also important, but less so than the hail danger. Before the antihail system, as much as 20 per cent of the crops on great stretches of territory were destroyed. Where the hail was particularly heavy, livestock were killed and people were hurt. Hail damage in the protected areas is now negligible.

It was working weather for the staff of the Krasnodar Antihail Expedition, and the American meteorologists saw the whole system in operation—from morning hail forecast to evening shelling of the clouds.

The institute's radars stand in the hills amidst the fields of the Kuban area. The hail forecast is made by radio sounding. When hail clouds enter the radar detection zone, the operator on duty gives orders to the artillerymen at one of the firing positions. A peaceful cannonade begins; shells charged with iodine compounds bombard the clouds.

The scientists had a busy itinerary. Besides the meteorological institutes in Georgia and the Kuban they inspected others in Moldavia and the Ukraine, as well as the Central Aerological Observatory, the Main Geophysical Observatory and the Institute of Experimental Meteorology in Obninsk near Moscow and, last but not least, the Main Administration of the Hydrometeorological Service of the USSR. This service ties in all the weather forecasting and modification work. At all these institutes opinions, data and literature were exchanged. Many of the scientists knew each other by correspondence and from their published papers.

Dr. Benton said the American delegation had spent the time in the Soviet Union with great pleasure and profit and had acquired a better understanding of Soviet research. Future contacts would serve the common goal, he said, and he would recommend more of them. He himself would be glad to repeat the trip because there had been too little time to see everything.

The general sentiment was expressed by Dr. Fred D. White of the National Science Foundation: "We saw your people and a lot of your country. We are delighted with your hospitality."



WHITE DEATH

By Professor Georgi Tushinsky
Doctor of Science (Geography)

Photographs by Mikhail Maltsev

SNOW avalanches rush down mountain slopes with the speed of express trains, destroying everything in their path—buildings, highways and railroad beds. Man knows their dangers, but eager to extract the mountains' mineral wealth, he must learn how to cope with them.

Among the problems we study at our laboratory are the geographical distribution of avalanches, their causes, and methods of prediction.

Snow avalanches in the mountains can be as unexpected as a volcanic eruption, like the lava slide from Mt. Vesuvius that destroyed Pompeii. In the thirteenth century the capital of Alan, a kingdom in the western part of the Caucasus, was wiped out by a massive movement of snow and ice. The city was discovered by glaciologists from our laboratory some years ago.

In the Alps, snow avalanches are called "white death." Accordingly, we named the capital of Alan "town of white death."

We established that the capital was built in the first millennium A. D., when the humidity of the Earth's climate was low. The annual

snowfall in the Northern Hemisphere had decreased, and with it the danger of snow avalanches.

This was the period when the North Atlantic became free of ice, the Normans settled in Iceland and Greenland, and Viking ships reached North America.

In the thirteenth and fourteenth centuries the humidity rose sharply, snowfall again increased, and the "age of frightful winters" set in. Greenland was blockaded by ice. The Norman colonies on the west coast of Greenland died out; links between Scandinavia and America were broken; the capital of Alan was buried under avalanches.

When Snow Is an Enemy

Ordinarily, snow is benign, helpful. It stores moisture for the summer and protects winter crops. But in mountain regions snow becomes man's bitterest enemy when it falls on steep slopes and rushes down into valleys to sweep away roads, crops and buildings. "When man comes to the mountains, he brings avalanches and landslides," researchers say. A paradox, but true.

The history of the "white death" in the mountains of America is much like that in the Soviet Union. Periods of avalanches coincided with the periods when mountain territories were being developed intensively: The building of railroads in the Caucasus; the gold rush in the American West, when thousands of prospectors streamed into the mountains; the building of transcontinental highways and railroads in the U.S., and the development of Siberian mountain regions in recent years.

Since 1960 the Soviet Union has experienced another "white death" period as mountain districts were developed for winter sports and holiday areas.

The "white death" reaches far and wide in our country. All the mountain regions of the sub-Arctic, including the Kola, Taimyr and Chukchi Peninsulas, the Urals, and the northeastern part of Siberia, are avalanche-prone. In the South the country is framed by an amphitheater of high ranges crowned most of the year by eternal snow and glaciers. There we have avalanches both winter and summer. The eastern seaboard—Kamchatka, the Kurile Islands and Sakhalin—is also an avalanche area.

Avalanches are set moving when the snow cover on a slope of 15 degrees or more reaches a thickness of 20 inches, or when a crust of ice forms on snow and newly fallen snow slides along the crust. They can be triggered by a strong wind, a sudden thaw, a rifle shot or even a loud shout.

Some are the result of changes in the crystalline structure of the snow cover. Called delayed-action avalanches, they are as unexpected as a flash of lightning.

Let us trace the evolution of the innocent hexagonal snowflake.

The glittering crystals that make up the snow cover do not last long. Matter from the crystal rays shifts to the flat surface of the flake and gradually turns it into something like a sphere. The snow cover, a fine heat insulator, has a much higher temperature inside than on the surface. Evaporation in the warmer layers loosens the snow horizontally. A layer is created in which the crystals are shaped like grains of rice or buckshot. It is over this stratum that the top layer of snow slides, starting an avalanche.

Avalanches can be forecast by studying the snow cover's visible connection with weather changes and by checking each layer.

When a dangerous layer is "ripe," road traffic can be halted in the danger zone and an avalanche set off by a trench mortar or artillery fire, thus preventing accidents.

Danger Signs

A great deal of attention is paid to avalanche danger in the Soviet Union. A network of meteorological stations in the mountains studies snowslides and forecasts their motion. Every industrial facility in the mountains has its own avalanche service responsible for the safety of its industrial and residential areas.

Our laboratory at Moscow University maintains several research stations, the largest at an altitude of 7,700 feet on Mt. Elbrus in the Caucasus.

Aerial photography is another way of discovering the routes "white death" takes. Filtered color photographs taken from aircraft show where an avalanche is most likely to descend. Instead of the usual shades of green in which forests photograph on ordinary film we get a sharp division of colors into orange, violet and green shades, depending on the species of trees. Since avalanches tear up shallow-rooted trees (firs, pines and other conifers), trees with strong root systems, such as birch, beech and mountain ash, survive and grow on avalanche routes. On the film, these strongly rooted forests differ noticeably in color from coniferous ones, thereby indicating the danger spots.

A sharp increase in the depth of the snow cover means an increase in avalanche danger. Formerly, snow depth was measured with rods. Now a method less hazardous to avalanche station personnel is used. Masts with a string of temperature sensors attached are set up on mountain slopes. The temperature inside snow changes slowly. Therefore, a sharp change registered by a sensor indicates that the snow has not yet reached the height at which the sensor is attached.

An avalanche slides over the granular stratum of snow as though along a conveyor belt. Formerly, growth of this dangerous layer was determined by sinking prospecting holes at various points on the mountain slope. Ultrasonic devices now cover large areas and spot dangerous strata from a distance. Thus places dangerous to climb to in winter can be studied.

Our laboratory has invented a device which determines the moisture content of snow by measuring its dielectrical properties from a distance. This shows the condition of the snow in inaccessible places. An increase in moisture content indicates an increase in avalanche danger.

The laboratory has also developed an installation which makes stereophotogrammetric records of moving avalanches. Two cameras taking pictures at intervals of two seconds give an exact picture of changes in the body of an avalanche while it is in motion.

Scientists on Ski Trails

Scientists help to sele sites in the mountains th are safe for building. But i many cases engineering pr tection is needed, as wel Such protection is provide by systems of structure which change the directio of snow streams, block sno from sliding down slopes, c change the route of an ava lanche.

Reinforced concrete ga leries are built along dange ous sections of railways c highways. They permit yea round traffic on the Georgia Military Road in the Cauca sus and the Frunze-Osh Roa in Central Asia.

A new safety problem ha arisen in recent years wit the construction of winte resorts in the mountains. Sk trails cannot be enclosed i galleries, and all the slope down which skiers move can not be banked.

Our laboratory is workin on the selection of safe sk runs and safe sites for win ter resorts.

Scientists are also work ing on ways of prolonging the ski season by shifting snow to cover ski runs in spring.









The avalanche research station of Moscow University is located on Mt. Elbrus in the Caucasus, at an elevation of 7,700 feet. Part of an avalanche forecasting network in mountain country, it determines potential danger spots. Staff members mark slopes considered risky for skiers and erect snowscreens to stop slides or change the direction of snowstreams. Sophisticated photography and ultrasonics are the working tools of the researchers. Bottom right: Yevgeni Zolotaryov adjusts a phototheodolyte to check changes in the size of a moving avalanche. Far right: A view of Mt. Elbrus from the station.

Dr. Georgi Tushinsky is head of the Laboratory for Basic Research on Snow Avalanches and Mud and Rock Torrents, Department of Geography, Moscow University.



SOVIET LIFE

ILLUSTRATED MONTHLY

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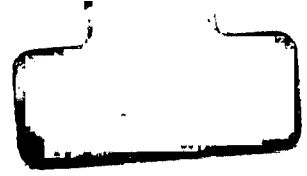
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A Russian forest in winter.



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