USSR

BERYOZKA DANCERS —NEW LIFE TO AN OLD ART

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No. 3—20 Cents [Oct. 1956]

NIGHT SCENE AT THE AGRICULTURAL EXHIBITION. *See Page 28.*

USSR

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"HOLD IT, PLEASE!" VISITING CAMERA FANS GET SET FOR A GOOD SHOT OF A STREET SCENE.

THESE AMERICAN CITIZENS ARE INTERESTED IN HOUSING CONSTRUCTION IN THE CITY OF MOSCOW.

FOREIGN VISITORS ARE WELCOME

Contacts of all types are growing broader between the Soviet Union and other countries. They are developing all over the world and bringing us statesmen and scientists, factory workers and athletes, farmers and students, in short people from every walk of life. They come to visit our towns and villages, to familiarize themselves with our art and science and to see how the Soviet people live.

In the five years from 1950 to 1954 inclusive, 1,733 delegations from 97 countries visited the USSR, and in 1955 more than 700 delegations from about 80 countries were greeted in our country. There were also many tourists from various countries, including the United States. They went to Transcaucasia, Central Asia, Siberia, Kazakhstan, the Ukraine and many other parts of the Soviet Union.

Last year some 200 groups of athletes from 34 countries performed in our stadiums or gymnasiums, while our stars took part in events in 29 countries. And in the field of the theater, more than 2,000 foreign artists appeared on the stages or in concert halls of the Soviet Union, while our artists performed in 42 countries.

This year the stream of visitors increased considerably, and six times as many tourists visited the USSR in the first quarter of 1956 as in the same period the year before. In the past summer our country has had visitors from the United States and Canada, Britain and France, China and India, Japan and Australia, Yugoslavia and Italy, Brazil and Norway, Iran and Israel. We welcomed American farmers and home builders, actors and musicians, scientists and businessmen, as we did the many visitors from other countries.

Our doors are wide open, and the latchstring is always out.

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Foreign Visitors Are Welcome

Continued from page 1

ELLSWORTH BUNKER, AMERICAN RED CROSS PRESIDENT, VISITS MOSCOW NURSES.

Philip E. Mosely, director of Studies of the Council of Foreign Relations and professor at Columbia University, is shown at the left being interviewed by a Moscow reporter. The Soviet press devotes much space to the travels of foreign visitors and comments favorably on the constant increase in their numbers.

Students from the United States, Sweden and Denmark stroll the streets of Moscow. These boys are visitors who came to the Soviet Union during their vacations. But many foreign students are enrolled in Soviet universities and colleges for regular studies. The student exchange program is increasing in size each year.

ARCHPRIEST K. RUZHITSKY, RECTOR, MOSCOW THEOLOGICAL ACADEMY, TELLS ITS HISTORY TO AMERICANS.

AMERICAN HOME BUILDERS DELEGATION INSPECTS CONSTRUCTION OF KAKHOVKA HYDRO-ELECTRIC STATION.

Dr. Robert P. Caudill, of Memphis, Tennessee, member of the World Baptist Alliance, preaches in the Moscow Baptist church. The inscription back of him reads, "God is Love."

American engineer George Morgan worked as a consultant to the Moscow subway construction project from 1933 to 1935. When he returned recently to the Soviet Union as a tourist, he was received by Nikita S. Khrushchev, member of the Presidium of the Supreme Soviet, who himself had taken part in the construction of the Moscow subway.

Fruit and vegetable vendors at Sochi stop and pose willingly for the American visitors.

DMITRI SHOSTAKOVICH WROTE HIS EIGHTH SYMPHONY IN THE IVANOVO COMPOSERS' REST HOME. THIS PICTURE, TAKEN IN 1943 BY HIS LATE WIFE, IS FROM HIS ALBUM.

Dmitri Shostakovich

AN INTIMATE SKETCH OF THE FAMOUS SOVIET COMPOSER

By Grigori Shneyerson

Music Critic

I spent the summer of 1943 at a resort in the country near Ivanovo. Dmitri Shostakovich was staying there with his family, as well as Sergei Prokofiev, Aram Khachaturyan, Dmitri Kabalevsky and Reinhold Gliere. Shostakovich was working on his Eighth Symphony that summer. For me, it was a rare opportunity to see a great composer at work in intimate surroundings.

He had none of the "temperament" so mistakenly associated with genius. When he worked, the door of his cottage was open so he could hear his two children playing outside in the garden. He liked having them there, he told me; he worked better when he could look out at them every so often.

That is a characteristic I found true of Shostakovich generally. He feels no need for seclusion. He likes people around him and is not disturbed by the normal noises of living.

He composed his Ninth Symphony later in that same rest home in Ivanovo, working in the garden at a rough-hewn table built for him by friends. The symphony was completed in 25 days, a phenomenally short time for a major work. Shostakovich works quickly, usually without piano. He notes his ideas directly on the score, with few changes or corrections for the finished work. He seems endowed with an extraordinary mental ear for music and plays out the whole composition in his mind in all its intricate harmonies, polyphony and orchestration long before the sounds take shape in written notes.

Shostakovich was 19 years old, a student at the Leningrad Conservatory, when he wrote his First Symphony. Performed for the first time in 1926 in the white-pillared hall of the Leningrad Philharmonic Society, it heralded the appearance of a new and brilliant talent.

A remarkably original production was this First Symphony, a wealth of feeling and passion, of gentle humor, of freshly imaginative improvisation. Even his later works—his Fifth, Seventh and Tenth Symphonies—more mature, perhaps more polished, in the opinion of some critics do not excel the First either in concept or virtuosity.

It won immediate world acclaim, and before the year was out it had been performed in Berlin by Bruno Walter, followed by performances in major concert cities in Europe and America. Arturo Toscanini, Serge Koussevitzky and Leopold Stokowski included the symphony in their repertory.

In the 30 years since then—an epoch in the history of modern music that saw many temporary luminaries shine momentarily and then fade out of the musical galaxy—Shostakovich has remained a star of the first magnitude. Between his First Symphony, listed as Opus 10, and his latest, Opus 99, the Concerto for Violin and Orchestra, performed recently in New York by David Oistrakh with the Philharmonic Orchestra conducted by Dimitri Mitropoulos, there stand grouped a whole

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A 1951 SNAPSHOT OF PROKOFIEV, SHOSTAKOVICH AND KHACHATURYAN (l. to r.).

SHOSTAKOVICH'S SON, MAXIM, ENJOYS A MUSICAL COMPOSITION WITH HIS FATHER.

Dmitri Shostakovich

An Intimate Sketch

Continued from page 4

library of varied and richly conceived compositions: the Fifth Symphony (Opus 47), the Sixth Symphony (Opus 54), the Quintet (Opus 57), the Seventh "Leningrad" Symphony (Opus 60), the Trio (Opus 67), the Oratorio "Song of the Forests" (Opus 81), 24 preludes and fugues for the pianoforte (Opus 87), the Tenth Symphony (Opus 93), the series of songs "From Jewish Folk Poetry" (Opus 95).

Each succeeding work has more than confirmed Shostakovich's stature. He has won a large and enthusiastic audience of music lovers on both sides of the Atlantic, and the applause of the world's great conductors. Americans will recall the exciting premiere in this country of his "Leningrad" symphony in 1942, conducted by Toscanini. Koussevitzky wrote of it: "The creator who understands his native land is fortunate. He is able to express its strength and its vital culture in his music. With such understanding folk art can live, grow and create new and powerful cultural values, even in the midst of war and destruction. Shostakovich symbolizes the Russian people and its creative forces, as inexhaustible as the earth itself. His music comes from the heart of the creator to touch the heart of the listener. In this lies his simplicity, and his wisdom."

And Koussevitzky might well have added his love for people and his deep concern for their well-being, apparent not alone in his music and his home life but in his work as legislator. He is Deputy from Leningrad to the Supreme Soviet of the Russian Federation. He gives his public responsibilities the same meticulous and studied care that he devotes to his compositions. His answers to the many hundreds of letters which arrive daily are marked by the same gentleness and simplicity that characterize his relations with his family and friends.

Shostakovich lives in a large, comfortable apartment on the Mozhaiskoye Road in Moscow with his daughter, Galina, and his son, Maxim. Galina, just turned 20, is a second-year student at Moscow University. Maxim, 18, is to be graduated this year from the Central Music School at the Moscow Conservatory. He is a promising pianist in his own right. His father recently composed a charming Concertina for Two Pianos for Maxim and his schoolmate Alla Maloletkova.

Mrs. Nina Shostakovich, a woman of great charm and talent, died suddenly last year. She was a physicist specializing in cosmic ray research. Mrs. Shostakovich, in spite of the demands of her own work, had been able to build a home atmosphere of love and devotion which must have been no small factor in Shostakovich's own development as a sensitive human being and, therefore, a perceptive artist.

Shostakovich's range of interests is varied. He reads voluminously, magazines, newspapers, novels. His favorite authors are Chekhov, Gogol, Saltykov-Shchedrin and de Maupassant. His musical tastes are just as wide, Bach, Mozart, Beethoven, Glinka, Moussorgsky, Saint-Saëns, Mahler and Prokofiev. He is greatly interested in Gershwin's "Porgy and Bess" music and the recent performance by the American Everyman Opera Company in Moscow won his warm commendation.

The circus, soccer football, chess and driving are among his other enthusiasms. He likes driving in the country around Moscow and Leningrad. Although Shostakovich has lived in Moscow for the past 12 years, he visits his native Leningrad frequently. It has become almost traditional for his major works to be performed first in Leningrad by the very excellent orchestra of the Leningrad Philharmonic Society conducted by his close friend, Yevgeni Mravinsky.

Shostakovich is now busy working on his Eleventh Symphony, its themes inspired by the 1905 Russian revolution. He plans to use song themes that grew out of that struggle.

When I told him that I was writing this article for *USSR*, Dmitri Shostakovich asked me to tell American readers that one of his fondest hopes was to see an increasing growth of cultural relations and exchange of artists between the United States and his country.

SHOSTAKOVICH VIEWS A MOSCOW SCENE FROM THE BALCONY OF HIS APARTMENT.

ANSWERING HIS HEAVY MAIL PERSONALLY IS PART OF THE DAILY ROUTINE.

THE WINDING OF THE FAMILY CLOCK IS NEVER ENTRUSTED TO ANYONE ELSE.

THE WHOLE HOUSE BECOMES QUIET AS BACH'S MUSIC IS HEARD OVER THE RADIO.

KHUKHRYANSKY: LANDSCAPER WITH AN IDEA.

THE FAMILY HELPED WITH HIS PROJECTS TO COMBAT EROSION. THE PHOTOS ARE FROM A FAMILY ALBUM.

MECHANIC PYOTR KHUKHRYANSKY

and His Personal Reforestation Project

Alatyr is a little town east of the Volga. It is growing fast, as are most Soviet towns, and its people are growing right along with the town.

Pyotr Khukhryansky moved to Aiatyr during the war. He came from the Ukraine. In Alatyr he met Galya. They married and settled down to raise a family.

He is a mechanic in the local farm machinery factory, and likes his trade. "If I didn't," he says, "I'd learn a different one." He likes photography, happy music, beekeeping, family bicycling, outings, building his own house and growing orchards in eroded gullies.

Last spring he sent an article to *Izvestia*, one of the most widely read papers in the Soviet Union, telling its readers what he had done about erosion in his home town of Alatyr. He was overwhelmed with a flood of letters from all parts of the country.

As Pyotr Khukhryansky tells about it, with the family beginning to increase, the children coming one after another—first his boy Yura, then Lidochka, and then Galina—he decided that his growing family needed room to expand. He applied to the city Soviet for a building plot. His trade union helped him get a long-term loan of 7,500 rubles that he needed to cover building costs. He then asked for leave from his job—that leave is always given to those who are going to put up their own houses—and he got to work.

Says Pyotr: "I planned the house and built it myself. Sasha Mokhov, a machinist who was building his own house close by, gave me a hand when I needed it. I returned the favor. Outside of that, I did all my own work with the help of Galya and even the kids. The factory where I work helped me out with materials and trucking. It wasn't easy work, but there's nothing like the thrill you get from building your own house from the ground up.

"There was that day when we finished the house. It was well into November, and there was a good, heavy snowfall. I had just about put the finishing touches on the heating unit I'd installed. It's a system I designed myself. I'd been racing the weather. We started the two stoves going and then the whole family ran out into the snow and watched the smoke coming out of the chimneys. The kids ran around yelling gleefully. Galya and I stood there holding hands like a couple of newlyweds and just looking at that beautiful smoke. It was quite a feeling."

With the house built, Pyotr had time to look around at the landscape. It wasn't what anybody would call beautiful, even by a long stretch of the imagination. The most prominent feature was a deeply eroded gully, about 15 yards from the brand-new house. It was not only a hazard for the young children, but an eyesore as well.

The Khukhryanskys did a lot of talking about what to do, and then they began doing it. They started to plant shrubs and young trees on the slopes of the gully. Before they were through, they had planted 600.

Those neighbors who used to laugh about the Khukhryanskys' personal reforestation project stopped laughing some time ago, and began their own projects. The Khukhryansky house is now surrounded by an eight-year-old growth of young woods and orchard. At the bottom of the gully, no longer bare now, stands a wall of trees.

The neighbors urged Pyotr to write his article for *Izvestia*. He described what he had done, and, in concluding his article, wrote: "We have an obligation to the future—to our children and theirs—not to operate by the idea 'after me the deluge.' All of us ought to work to reforest gullies, to preserve farm land from erosion and to look after our springs, rivers and our other irreplaceable natural resources."

As for the immediate personal return, Pyotr will tell you at the drop of a hat about his orchard of apple and cherry trees, and Galya likes to talk about the gooseberry and raspberry bushes that give her enough fruit to last through the winter, with liberal gifts to friends.

Pyotr will also tell you that his loan was paid off some time ago, and now that the house and the landscaping do not demand much time and attention, he has taken up photography. His big complaint at present is that his developing isn't up to par and that he doesn't have as much time to work on his hobby as he would like, because so many people drop in to ask what they can do about the gullies and eroded areas on their homesites. Since his article appeared in *Izvestia*, it has encouraged people throughout the country to develop their own reforestation projects, and these have begun to replace the naked brown areas of eroded land with green trees and flowering shrubs.

BIRTH OF NEW SEAS

By Leon Bagramov

Immense new bodies of water on a new map. These are man-made seas, vast reservoirs of channeled rivers barred by dams. On a calm day the water surfaces reflect the sun like giant mirrors. On a stormy day the winds raise waves the height of a man.

These majestic reservoirs were created to produce cheap electricity and to improve navigation, to irrigate fields, to supply water to towns and industrial areas, and to develop fisheries.

To create such seas would seem an insuperable, an awesome task. To clear the bottom alone so as to provide free water for navigation and fisheries means cutting forests, blasting rock, moving silt.

The population of the areas to be flooded is relocated in new villages and towns close to the reservoirs. The government completely finances the resettlement projects. It not only provides new houses but also grants state bonuses for planting gardens and orchards. Every expense of the move is met by the government.

The bigger and deeper the river, the larger sea it will make and the more electric power it will produce. But it is this very fact which makes the work more difficult. The large hydraulic engineering jobs would be altogether inconceivable without the huge excavators, the powerful cranes and the whole arsenal of modern building machinery that must be used to shift the countless tons of rock, earth and concrete.

Times Change

A year ago last summer, people who took the bus running northwest from Kuibyshev on the Volga were accustomed to hear the conductor call out the stop, "Kuibyshev Sea."

A stranger to the city would have thought it a joke. As far as his eye could see, there was nothing but steppe with its sparse, low shrubbery. But at the next stop, the conductor would call out, "Port Town," just as seriously. And the stranger, looking again, would see nothing more than a steep hill with a small industrial town perched on it, and beyond it, an expanse of sand reaching up to the green of the Zhiguli Mountains which face the Volga.

Had he visited Kuibyshev the day the steppe was flooded, he would have seen the great dam close in the river and the imprisoned Volga cover the withered steppe to form the Kuibyshev Sea. He would have seen river steamers tie up at "Port Town."

The Kuibyshev Sea is still growing. Its waters are now close to the Kama, a tributary of the Volga, more than 200 miles from the dam. A sizeable town, Stavropol, once stood on land now covered by water. Its people live in a new town with wide avenues and parks. Eventually the Kuibyshev Sea will cover an area of 2,200 square miles to become the world's largest man-made reservoir.

By then man will be repaid a hundred-fold for his labors. Each year the Kuibyshev Hydroelectric Station, whose first unit was put into operation late in 1955, will give the country 11 billion kilowatt-hours of electric power, six times as much as all the electric stations in Russia produced before the 1917 Revolution. Fields in the Volga region will be irrigated and scores of shallow rivers will become navigable. The new sea will become an important fishery to yield thousands of tons of perch, carp and white salmon.

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The Volga Cascade

The Kuibyshev Sea is only one of the links in a great chain of reservoirs into which the Volga is being converted.

The first link is the Moscow Sea, fashioned back in 1937, when the Volga channel and its floodlands were barred by a dam and dikes near what was then the small village of Ivankovo. That year the Volga was linked to the Moskva River by a special canal which permitted large ships to moor directly in the port of Moscow and insured a better water supply for the Soviet capital.

This was the beginning of the immense project, the Greater Volga plan. When completed, it will have changed the face of Europe's largest river.

Construction of the Ivankovo power station and the Moscow Sea was followed by two more hydroelectric projects on the Volga, one at the ancient Russian city of Uglich, the other at the city of Shcherbakov. The high Volga banks did not allow the Uglich Sea to spread very far, but the Shcherbakov Sea, or the Rybinsk Sea, as it is called more often, covers a territory of 1,800 square miles, eight times larger than Lake Geneva in Switzerland.

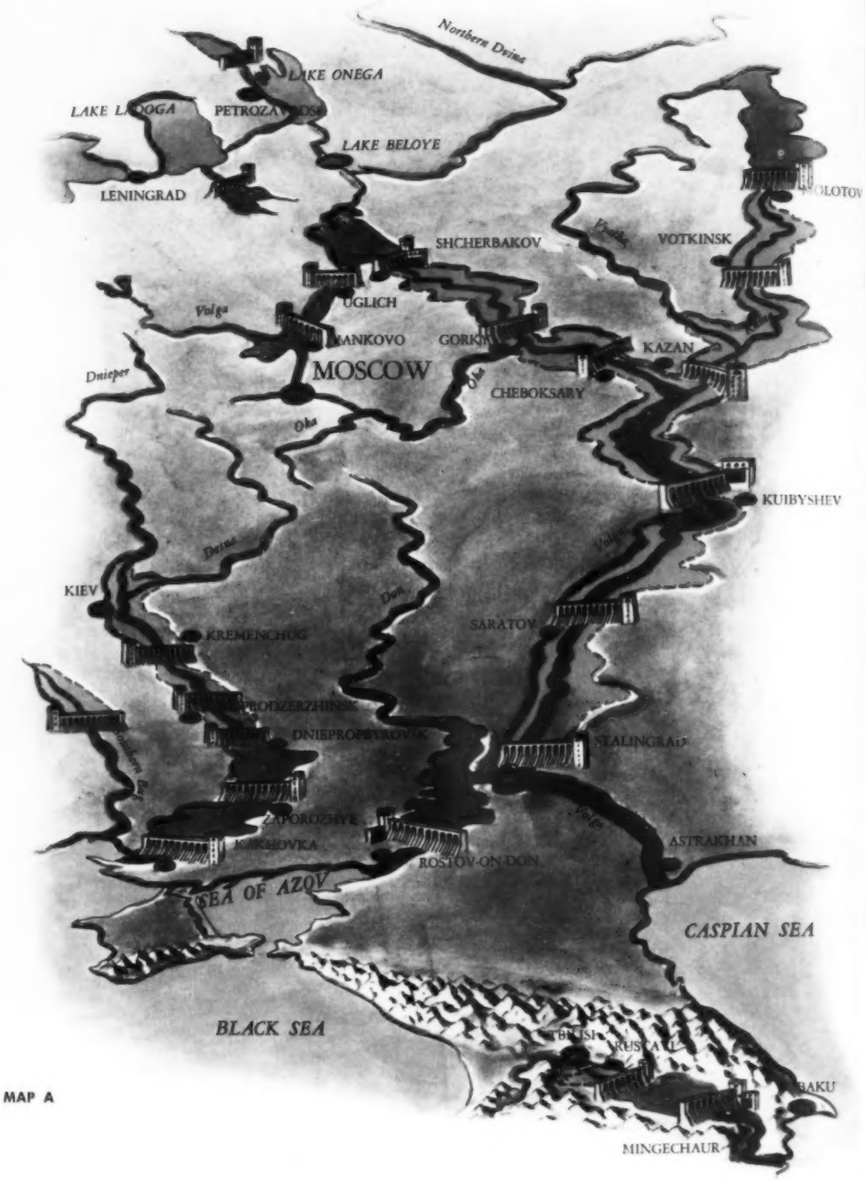
These three man-made seas have completely altered the character and the life of the Volga's upper reaches. Where cows once used to ford the river, there is a deep waterway for big ships. The Volga's former shallow tributaries are now navigable, giving the country additional hundreds of miles of waterways. The recurring spring floods which were so destructive in this region are now things of the past.

The fauna and flora of the new seas and their shores have changed also. Rushes sway gently in the water alongside tall pines whose bases are washed by the sea. Shoals of fish swim in the waters that cover old fields and woodland. In the Rybinsk Sea now spawn not only fish native to the Volga, but the mirror carp planted by fish breeders.

Immigrant fish have appeared in the new reservoirs, the sparling from the White Sea, the "ryapushka," a white fish from Lake Ladoga. They came through the canals dug a century and a half ago to connect the Volga with the Baltic and White Seas. Fisheries now provide an important part of the income of the "maritime" population.

The Rybinsk hydrotechnical development completed the reconstruction of the Upper Volga. Downstream are new steps in the Volga cascade, one near the city of Gorky, placed in operation last year, one near Cheboksary, and the one at Kuibyshev. New steps are to be constructed at Saratov and Stalingrad. Hydrotechnical projects are also under way on the Kama, one of the Volga's tributaries.

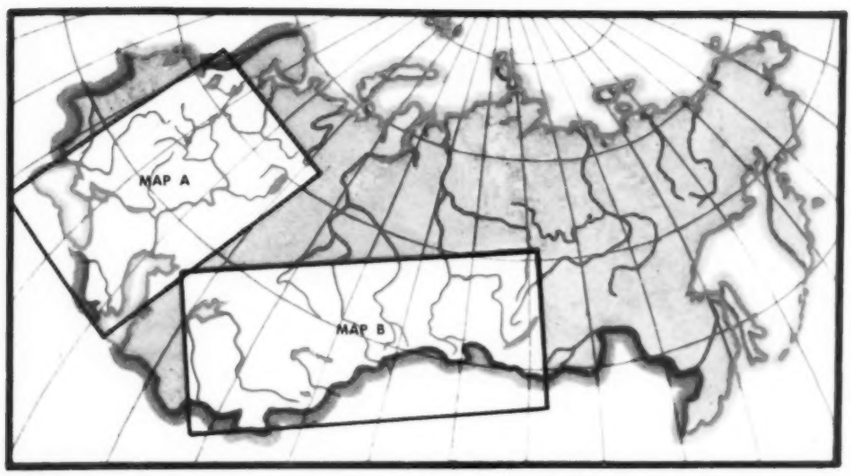
The result of all this will be to make the Volga a chain of great reservoirs with a surface area of tens of thousands of square miles. The river and its tributaries, harnessed, will supply 60 billion kilowatt-hours of electric power annually. Navigation will be greatly improved. Estimates are that the Volga's freight traffic capacity when the plan is completed will be equal to 40 trunk-line railroads. And when the lights of the Stalingrad Hydroelectric Station are turned on and the new



MAP A

THIS IS THE BIRTH OF THE KUIBYSHEV SEA, EVENTUALLY TO BE THE WORLD'S LARGEST MAN-MADE RESERVOIR.

MAP B



Stalingrad Sea washes at the walls of the city, the waters of the Volga will flow through canals to revive the arid parched Caspian land.

Transforming the Earth

Besides the Volga projects, reservoirs are being built in all parts of the Soviet Union, on the Dnieper, in the Crimea and Transcaucasia, in Central Asia and Siberia.

Talking about the new Tsimlyanskoye Sea, the local farmers say, "The water changed life here." Twelve thousand acres of fertile rice fields is just one of the Tsimlyanskoye Sea's gifts to this region. In the irrigated area, some 30 new wine-growing farms have already been set up. In the bays and inlets local fishermen are busy. Even the dry southeaster that once scourged the Don steppe has been cooled by the waters flowing in the canals from the sea.

In sunny Azerbaijan, Transcaucasia, a village called Mingechaur used to stand on the bank of the Kura, a mountain river. In Azerbaijan, "Mingechaur" means "Turn back, the road ends here!" And indeed there was no road beyond this point. The village had grown up near a gulch which the Kura River had cut through the mountain.

As it pounded through the rock gate, the swift river spilled with enormous force. It flooded the land, turned it into treacherous bog, carried away houses and orchards. Malarial mosquitoes hovered in clouds over the putrid marshes.

In 1954 a 285-foot earth dam, the highest in Europe, was built to bar the raging Kura. The Mingechaur Sea was formed and it changed the life of a vast region. The river which once ravaged the crops now helps grow the long-stapled cotton for which Azerbaijan is famous, besides wheat, tobacco, tea, citrus fruits, grapes.

Baku, a big oil-producing center, and other industrial areas in Azerbaijan, and towns and villages in neighboring Georgia, are getting cheap electricity. The malarial mosquito has vanished with the bogs, and the village of Mingechaur has become a good-sized town.

The Siberian Projects

Most of the reservoirs, up to a short while ago, were built in the European part of the Soviet Union. Engineers have now moved eastward and entered Siberia, a region of untold natural resources. Siberia has 70 per cent of the country's reserves of "white coal." There course the mightiest and deepest rivers of the Soviet Union, the Ob, the Yenisei and the Lena.

One of the tributaries of the Yenisei, the Angara, with its source in Lake Baikal, the world's deepest lake, has a greater electric-energy potential than all the rivers of the Volga basin put together.

Two hydraulic engineering projects are under way on the Angara, one at Irkutsk, and the other at Bratsk. The Bratsk Sea will be the largest reservoir on record, even bigger than the Kuibyshev Sea. To make room for its bed, close to a billion and a half cubic feet of lumber will have to be felled; 70,000 people will have to be resettled.

The Bratsk Sea will supply each year the immense quantity of 22 billion kilowatt-hours of electric power. Cheap electric power will transform Eastern Siberia and will develop the potential economy of that rich area. The Angara will become navigable for its whole length. Ships will come to Lake Baikal from the northern seas, and the Selenga River will become a waterway clear into Mongolia.

Perhaps Nikolai Chernyshevsky, the famous nineteenth century Russian writer, saw a vision of these great man-made seas when he wrote, "Our civilization is still only in its infancy, and it is beyond the conception of even the most fervid imagination to grasp what power it will give us over nature."

"I REMEMBER THE TIME WHEN THIS WAS DRY LAND."

BYELORUSSIA: A COUNTRY AND A PEOPLE TRANSFORMED

By Georgi Kovalevsky, Director of the Institute of Economics of the Byelorussian Academy of Sciences

Byelorussia is a big country, in area and in people. It covers a territory larger than Belgium, the Netherlands, Luxemburg, Switzerland and Portugal combined. Out of 39 European countries, only 17 have a greater population than Byelorussia with its eight millions. Eighty per cent are Byelorussians; the rest of the population are Russians, Ukrainians, Jews and Poles.

For centuries Byelorussia was a semi-colony of the Russian Empire. Before the 1917 Revolution Russia itself was an economically backward country, but its industrial production was five times greater than that of Byelorussia. One can imagine, then, what the living standards of the Byelorussians must have been.

On January 1, 1919, Byelorussia became a republic and is now one of the sovereign states that make up the USSR. It was only after the Revolution that the potential of the country and its people was able to develop.

One-fourth of the territory of Byelorussia is covered with forests. Bordering the Ukraine lies the Byelorussian sector of Polessye, a great swampy depression forming the basin of the slow-flowing Pripet River. Here there are many lakes and rivers with marshy banks.

VAST NATURAL RESOURCES

For many centuries Byelorussia had been considered lacking in natural resources. But when in Soviet times geologists began prospecting, they found rich stores of peat, which makes fuel for electric stations, fertilizer for farms, raw material for building. They also discovered deposits of potassium and salt. There is reason to believe that buried under the surface of the land are untapped stores of oil, coal and other minerals.

In the forests of Byelorussia, one of its major resources, firs and pines are mixed with oak, ash, maple, and a varied range of other trees. Forest reserves have been laid out to protect valuable woodland and preserve wildlife.

MADE IN BYELORUSSIA

The stamp "Made in Byelorussia" can be read on tractors, automobiles, turbines, machine tools, bearings, radio and television sets and other manufactured products too numerous to list. All of this industrial production has been created in Soviet Byelorussia.

Pre-revolutionary Byelorussia was principally an agricultural country, and it had only small and very primitive factories. The province of Minsk, for example, which took in almost half the territory of present-day Byelorussia, had some 500 enterprises employing 13,000 workers. Today, the Minsk Automobile Plant alone employs more workers than all the factories in Minsk province in 1913.

The rapid industrial development of Byelo-

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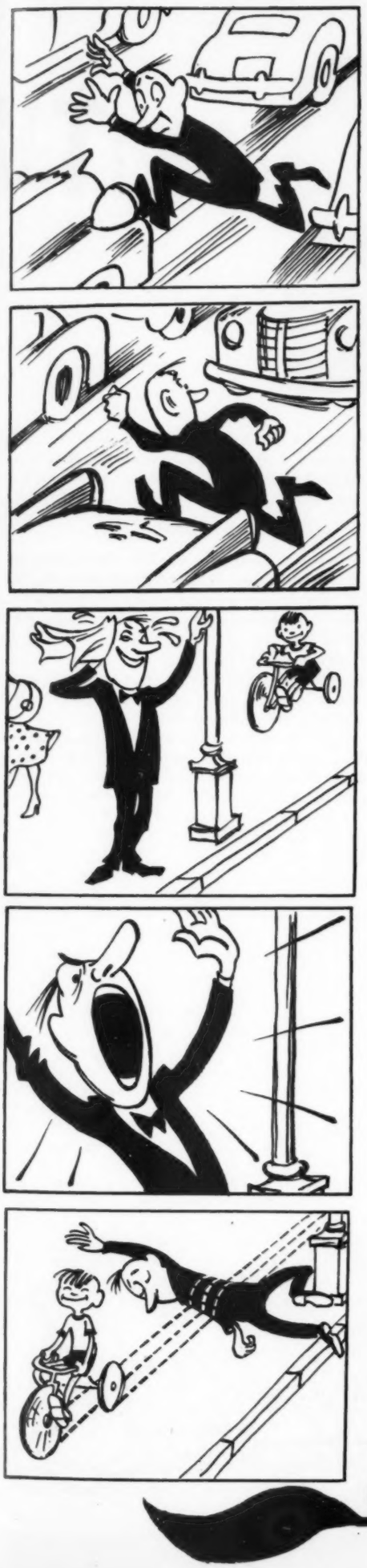


DMITRI KARA-DMITRIEV AND HIS PET.

HERE'S ONE FOR RIPLEY

By Dmitri Kara-Dmitriev,
Actor, Satire Theater, Moscow

"Yes," the traffic officer said, "she appears regularly at about one o'clock in the morning and disappears about as promptly just before daybreak."

That was enough to send me to the public park on Miusskaya Square, only a short distance from the heart of Moscow, an hour past midnight that same evening.

And sure enough, I spotted her soon afterward about 20 yards away. I didn't know how to address her properly, so I fell back on the common call: "Here kitty, nice kitty, come here kitty!"

The wary reddish animal with black ears and paws froze instantly and turned a pair of bright shining eyes on me.

I tossed her a chunk of raw meat. She pounced on my offering and carried it off into the bushes only to reappear a moment later. I threw another piece, a bit closer. The act was repeated. But not a third time. She refused to come too close to my feet.

To make a long story short, after a month and a half of nightly meetings, I trained that little fox to eat out of my hand. Once, when I reached the park a bit later than usual, she was waiting near the gate. It was a real pleasure to see her leap joyfully about me like a pet puppy.

The fox wore a collar that was so tight she sometimes had difficulty swallowing. I started asking people in the vicinity about her, and finally located her owner, a bus driver. He told me that the fox had run away some months previously when she was still a very small animal. That explained the collar. I cut it off, and she looked at me with grateful eyes. Today we are friends. The traffic officer will substantiate my story—and besides, here's a snapshot as further proof that it was not imagined.

TV

Every morning the postman brings a huge stack of fan mail to our children's TV studio in Moscow.

"What kind of fish live in the bottom of the ocean?" a budding naturalist wants to know. And we ask an oceanologist to bring his collection of pickled deep-sea dwellers to the studio.

"Tell us something about Jules Verne," another child writes. We work out a program called *World Traveler* built around that early science-fiction writer.

"I like the program on geysers. Are you going to have more nature programs?" We take our young viewers to the crater of a volcano.

"I want to be a ballet star," a little girl writes. We invite Galina Ulanova, premiere ballerina, to dance her *Swan Lake.*

Our audience is anything but indifferent. They comment, advise, plead, criticize, even live out our programs, inside and outside the studio.

"PIGEON STREET"

A car runs over a pigeon. The bird is rescued by a tow-haired twelve-year-old. He takes the pigeon home and nurses it back to health. The pigeon struts importantly around the boy's desk, occasionally pecking at invisible crumbs. The youngster tears a page out of his school notebook. He writes a very formal letter to the children's column of a newspaper, a demand that "Slow" signs be posted at those street corners where pigeons flock. The newspaper sends the letter to the local traffic police. Final shot: On the way home from school a few days later, the boy stops to point proudly to a new street sign. It reads, "Drive Slowly," and underneath it is a picture of a pigeon.

IN OFFICE "FOR TINIEST TV AUDIENCE," HEROES OF NEW PROGRAMS ARE DISCUSSED.

This is the script of *Pigeon Street,* a TV short. There was nothing we had to invent. Yura Winestein, the hero of our short, lives in Moscow. He wrote the letter to the newspaper, and he and his friends were the cast in our show.

CHILDREN'S THEATER

TV shorts are only one of the many types of broadcasting our studio does. We have close ties with the five children's theaters in Moscow and have televised all their best plays. For very young viewers, we presented Mikhalkov's *Conceited Hare,* Marshak's *Twelve Months,* Schwartz's *Little Red Riding Hood* and *Snow Queen,* based on Hans Christian Andersen's fairy tale.

Older children have seen *Uncle Tom's Cabin,* a stage version of the Harriet Beecher Stowe book, and *Two Friends,* based on Nosov's very popular *Vitya Maleyev at School and at Home.*

We have shown a gay vaudeville piece called *Dimka the Invisible,* by Korostylev and Lvovsky; Kaverin's *Two Captains; The Piper from Strakonice,* a play based on a story by the Czech writer, Tyl; Molière's *Le Boürgeois Gentilhomme;* Fonvisin's famous play, *The Minor;* Gogol's *Dead Souls* and Griboyedov's immortal *Wit Works Woe.*

Then there are all the wonderful plays for children that Sergei Obraztsov's puppet theater has shown on TV: *Cinderella, Puss in Boots, The Adventures of Pinocchio, Cat's House* and *As If by Magic.*

When we do theater plays on TV, we try to do more than merely transfer the production to the studio. Our TV cameras are not bound to the confines of the stage. We include sequences shot outside. We fabricate models of streets and towns. With trick shooting we get "miracle" effects in fairy tales. We use all the technical possibilities of TV production to make our plays alive and interesting.

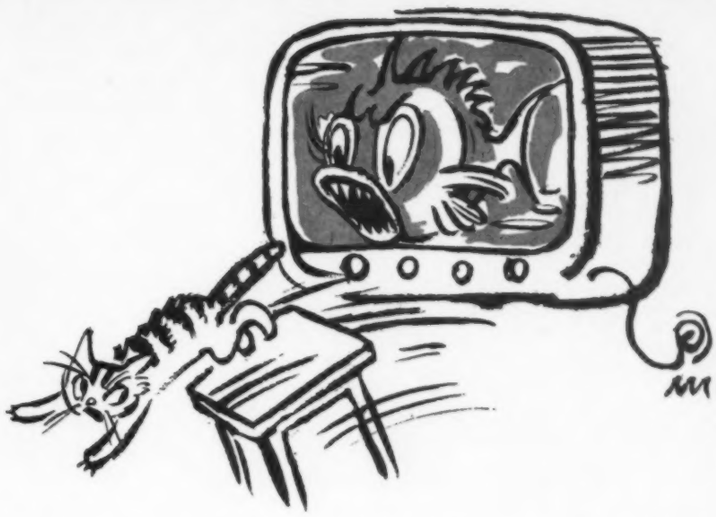
Not that we always succeed. Our directors sometimes lose sight of the fact that each play has its particular quality. Uninspired realistic treatment can turn a good play into a bad TV production.

Many of the regular theaters put on plays for children which we present on TV, *Happiness Is Not for the Faint-Hearted,* a Vakhtangov Theater production, and *Dr. Aiboleet,* one of the Stanislavsky and Nemirovich-Danchenko Theater ballets.

Then there are circus programs, riddles and the TV Do-it-Yourself

for Children

By Avenir Zak
Producer, Moscow TV Studio



Club for the very young fry. Operas and ballets from the Bolshoi Theater, and contests for young musicians are telecast by the studio. Teen-age forums on subjects like friendship, love and happiness have a large following.

NO "TALKING DOWN"

Our guiding principle is that all forms of entertainment are intrinsically good. The bad programs are the dull ones. If we do not interest the children, they will not look at our shows. The object of each show, what we aim to tell the children, must be clear.

In addition, we feel that the program must be wholesome. We do not show scenes of murder or violence. We are careful not to use the TV screen so that it glamorizes the shadier aspects of life. This does not mean that we avoid all such references, but we present them in such a way that the children looking on cannot fail to draw constructive conclusions. Two other rules that we follow very strictly when we talk to our young audience are not to be didactic and never to talk down.

TV CHARACTERS

Our most popular characters are those familiar to children from books, films and plays. Pinocchio, the wooden boy from the Obraztsov Puppet Theater appears on our programs regularly. His theme song is "I was a stick. Now I'm a boy, a wonderful lad." Children adore mischievous Pinocchio. He is forever in and out of trouble. Sometimes he comes crawling out of Karabas Barabas's enormous beard complaining that he "got lost in the forest."

We have Lazy Boy who saunters out alive from Fyodor Reshetnikov's famous painting for a stroll. He really wants to walk to the equator, but he is a poor geography student, so he lands at the North Pole.

In our New Year's Eve program we had Grandfather Frost—the Russian Santa Claus—climb into a magic kettle that made everything double. When two Grandfather Frosts climbed out of the kettle and began to argue about which was the real one, our audiences had a grand time.

Some of our studio doctrinaires were very upset about this one. They thought we had made a terrible psychological error. Children, they said, knew that there was only one Grandfather Frost. To have two of them climbing out of the kettle was likely to get the children al confused. This could cause all sorts of traumas.

The argument was unconvincing, of course, but the only way I could beat them down was to cite the authoritative testimony of my seven-year old daughter who had been to three parties during her winter vacation and had told me that "the Grandfather Frosts were all different." This goes to prove that seven-year-olds sometimes have more sense than child psychologists give them credit for.

SLEIGHT-OF-HAND

A trick I have used several times and have come to like is a TV within TV "sleight-of-hand" in which film stars step out of a motion picture to mingle with the other characters in a program. Here is one such sequence:

On their screens at home our young viewers see Grandfather Frost's office, with a snow-covered desk on which stand a hoar-frosted telephone and inkwell, and an ordinary TV set. Snow Maiden sits in front of the set, completely absorbed in the adventures of Vasya, hero of the film *Brave Men*. As Vasya speeds along on his trusty horse to catch up with the train, Snow Maiden says, "Oh, Grandpa, how I wish Vasya were standing here right this minute."

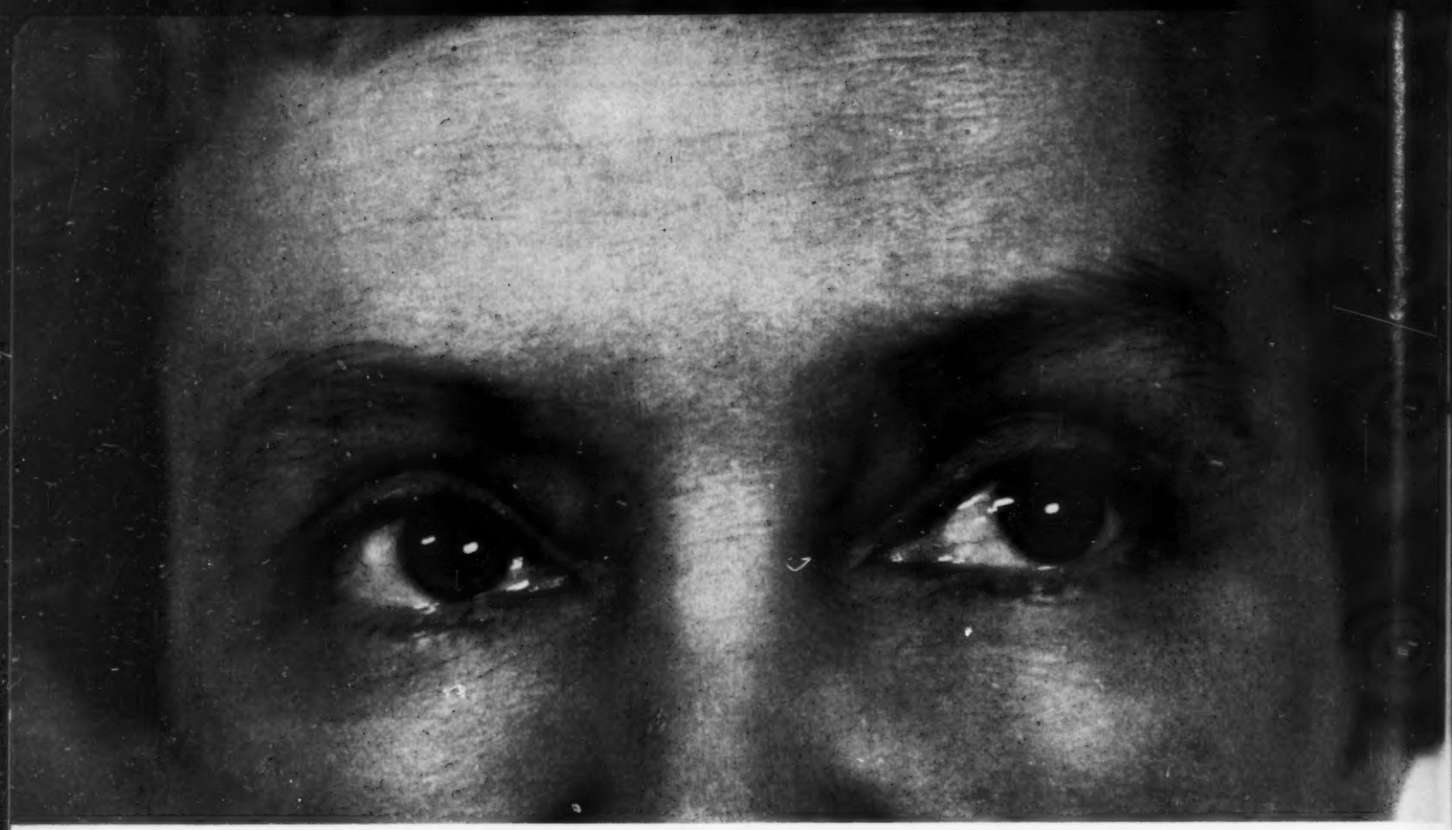
Grandfather Frost, as we all know, can do wonderful things. He faces the screen and calls out, "Hey, Vasya, Vasya!" The film star reins in his horse. "Is it me you're calling?" he asks from the screen. "Yes," replies Snow Maiden, enraptured.

The film star steps out of the screen of the TV set on the desk and walks over to Grandfather Frost and Snow Maiden. His horse neighs to him. "I'll be back in a minute, Buyan," Vasya says. After a short talk with Snow Maiden and the TV viewers he steps back into the TV screen and mounts his horse. "Good-by, Snow Maiden," he calls. Then the film sequence of Vasya chasing the train continues.

Sir Arthur Conan Doyle's popular heroes, Sherlock Holmes and Dr. Watson, came to life in our studio not long ago to solve the "mystery of the little dancing men." Sherlock Holmes and Dr. Watson started out by following the characters in Wells' *Invisible Man* and Captain Grant's children from a story by Jules Verne. Then they discovered Stevenson's "black arrow" and followed a character from a story by Alexei Tolstoy. That brought them to the Children's Books Publishing House, which has started putting out a big series of popular adventure stories. On the way they passed through a tunnel in which they found mysterious inscriptions on a stone, landed in a stalactite cave, made their way through a gigantic spider web, and opened an ancient sarcophagus.

Continued on page 52

THIS TEMPERAMENTAL "ACTOR" IS CAUSING MUCH TROUBLE IN THE STUDIO.



EYES FOR THE BLIND

By Minyena Yanovskaya

When Ivan Grusha came to the eye clinic in the Ukrainian city of Odessa in 1913, he was almost totally blind. One of his eyes was completely covered by a leucoma, a tumor of the cornea, and the other partially covered. The surgeons had no hope for the completely diseased eye, but they decided to create an artificial pupil in the eye which was partially affected.

Although the actual operation was successful, Grusha was so ill and his resistance so low that complications set in. The eye festered and had to be removed. Now the boy was hopelessly blind.

Professor Vladimir Filatov was on the clinic staff. He had been working on the problem of corneal transplant and had developed a surgical technique which he thought should work. But it was very much an experimental technique. Professor Filatov carefully weighed both the personal and medical aspects of the case.

On the one hand, if he did not try the corneal transplant, the patient would be blind for life. It was worth taking even a slim chance to give the lad his sight. On the other hand, Grusha was far from the ideal subject for so delicate an operation. His poor physical condition was certain to affect the result.

Professor Filatov decided to take the calculated risk. It was probably the most important decision of his life. And a decision that vitally affected the lives of that long list of people to whom he has restored the great gift of sight. Grusha was the first on that list, and has thereby achieved vicarious fame in the literature of medicine.

When Filatov reported his findings to a USSR conference of eye specialists 13 years after the first of his corneal transplants, he had performed about a dozen similar operations. The presence of Grusha at the conference as a living demonstration of the method had a dramatic quality. Doctors listened to the report, examined Grusha and carried word back to all parts of the country.

At the Odessa clinic more beds were allotted for transplantation patients. The government made a special grant for the expensive medical equipment. And from everywhere the blind flocked to the Odessa clinic.

But most of them had to be turned away for lack of the tissue for transplantation. In those days healthy cornea could be obtained only from patients who for one reason or another had to have their eyes removed, and such cases were far too few to ensure a sufficient supply.

In addition, the surgical instrument that Filatov used was heavy and clumsy. It needed an extraordinarily skillful hand to use it. The tiniest slip could lead to irreparable complications, and then the eye would have to be removed. Filatov was fortunate, his operations were uniformly successful. He had developed the technique and he was used to the instrument. But his clinic could not hope to handle all such operations. Every qualified eye surgeon should be able to transplant corneas.

Filatov set about designing a new instrument, a trepan, which any surgeon would be able to use. It was a complex instrument which needed the most delicate craftsmanship to fashion. He found a metal worker, Martsinkovsky, who had the necessary skill. Together, they worked out the trepan. They called it FM-1, from their two initials.

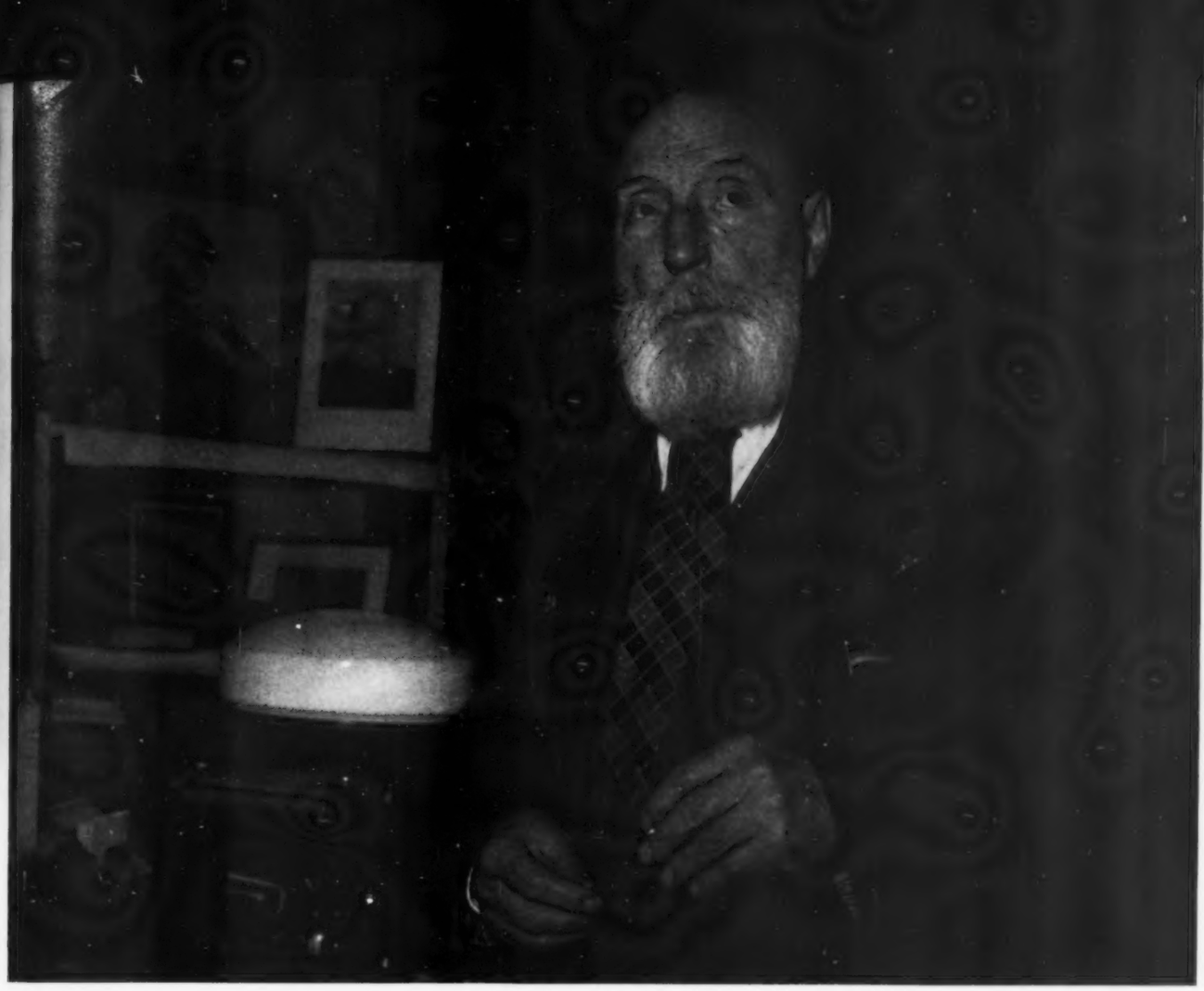
But there was still the problem of corneal tissue. Where was tissue to be obtained in large enough quantities for all the blind who were waiting?

Filatov found the answer. That was his great contribution to medicine and to mankind.

SURGEON'S VICTORY

For 18 years this man had been blind. He had lost his sight as a result of smallpox and resigned himself to groping in darkness until he learned of Dr. Filatov's work. The doctor made no promises after he had examined the young man. "We'll do what we can," he said.

Continued on page 18



PROFESSOR VLADIMIR FILATOV

THE OPERATION BEING PERFORMED BY PROFESSOR FILATOV IS THE TRANSPLANTING OF A CORNEA TO A BLIND PERSON'S EYE. THE PATIENT WILL BE ABLE TO SEE ONCE MORE.

THE PROFESSOR FINDS RELAXATION IN PAINTING, HIS FAVORITE SPARE-TIME ACTIVITY. DR. FILATOV IS NOW 80 YEARS OF AGE, BUT HE IS STILL ACTIVE AND ENERGETIC.

Continued from page 16

On the day the patient was admitted to the clinic a 70-year-old man had died of a kidney disease in another Odessa hospital. The eye of the dead man was removed and kept in a refrigerator for three days. Then a tiny disc was cut out of it. It was this disc which Dr. Filatov transplanted.

After the operation, the eye was bandaged. There was nothing left to do but wait, a long and anxious wait for both patient and doctor. When the bandage was taken off, Filatov found that the cornea from the dead man had grown normally. The patient could see.

That operation marked a historic day in ophthalmology. Surgeons before this had tried to transplant preserved corneas from dead people. But their experiments had been treated as "curious cases" and "medical wonders," to be forgotten after a short flurry of interest. The world owes a debt to Dr. Filatov for the far-reaching deductions he made when he ran across a description of one of these "wonders" in an old medical journal. Today, surgeons throughout the world use preserved tissue from dead people when they do a corneal transplant.

THE "FILATOV STALK"

During the war, soldiers with serious face wounds sometimes tried to commit suicide. There is the case of one such man, an officer, with his face almost shot away. Doctors and nurses barely convinced him that plastic surgery could give him a new face.

Months passed before surgeons began this operation. They waited until wounds were thoroughly healed. Meanwhile, they studied the patient's photographs.

When the time came to operate, the patient's right arm was raised to his face. A strip or "stalk" of skin, cut from his back, was stretched from his forearm to the site of his new nose. It was hermetically sutured to prevent infection. In this way, a new nose, lips and cheeks were "cut out" of the skin to give the man a new face.

That is the "Filatov Stalk," a new method of skin grafting that has many advantages over older procedures. First used by Filatov, it is now widespread. It is recognized as a basic method of plastic surgery for different kinds of injuries not only to the face, but also to arms, legs, digestive tract and other parts of the body.

TISSUE THERAPY

The Professor has been working on another idea which has no direct connection with his work as an eye surgeon. He came on it after a corneal transplant operation.

Filatov noticed that the eye on which he had not operated had brightened up. Other surgeons also had observed that the transplanted cornea sometimes had a strange effect on the surrounding area.

It set the Professor to thinking and to experimenting. First, he transplanted various specially treated tissues or tissue extracts to diseased eyes. Then he followed the same procedure in patients with lupus, tuberculosis of the lung, stomach ulcer, bronchial asthma, leprosy and other diseases. The results were astonishing. In almost every case, the disease retreated before some mysterious force embodied in the fragment of preserved tissue or tissue extract. This method has proved effective for 70 to 75 types of disease.

Filatov called the mysterious forces "biogenous stimulators" and the method "tissue therapy."

Further experimentation has shown that tissue therapy is not always successful and that certain factors must be studied more closely. Much more research will have to be done before Filatov's hypothesis concerning biogenous stimulators becomes fully accepted scientific theory. But the theory has great potential significance, and elements of tissue therapy are used by surgeons all over the world.

A CREATIVE OLD AGE

Dr. Filatov is 80 years old now, but he still walks energetically through the Ukrainian Experimental Institute of Eye Diseases. It was founded 20 years ago by the Ukrainian government and bears his name. He looks the patriarch in his black skull cap and short gray beard.

He still gets excited over new operative techniques that his students propose, and the bolder the operation, the greater his interest and excitement. The operating theater is always full of ophthalmologists who come from all parts of the country to watch Filatov or one of his students operate. There is scarcely a field in ophthalmology to which the Filatov clinic has not made original contributions.

One of the pioneering achievements of the Odessa school of eye surgeons was recently described by Dr. Vladimir Shevalov, a pupil of Professor Filatov.

Certain diseases affect the small but very important lachrymal gland. It stops producing tears. Then the eye rubs against the lid, ulcerates and causes blindness.

When the patient, Yevdokia Goncharova, came to the Filatov clinic, there was no cure for the disease. Dr. Shevalov reasoned that it should be possible to replace the diseased lachrymal gland with another gland. He took a duct of the parotid gland, which produces a fluid chemically similar to tears, and brought it to the outer corner of the eye. It began to bathe the affected eye, and the patient soon was well on the way to being healed.

Professor Filatov's gifted students now work as heads of clinics and hospitals throughout the Soviet Union. Many of them have evolved their own methods of treatment and surgical techniques. But they all continue to follow the work of their teacher. And with their work of healing, they offer reverent tribute to the grand old man of the Odessa eye clinic.

ALEXEI MANEVSKY SHOWS HIS YOUNG FRIENDS THE RARE "RED LEVANEVSKY" STAMP.

HIS STROKE OF LUCK

A Story of One Stamp Collection

By Yevgeni Kanevsky

To climax years of search with a real find after many false clues and some few disappointments gives one a sense of achievement although it is said that a person is never satisfied with what he has. But for the born stamp collector, there are moments when it seems the ultimate has been achieved.

If there is a seventh heaven, Alexei Manevsky, an assistant professor of history, was there that day. His cherished dream had come true: a little piece of adhesive-backed paper square was now safely in his album.

Manevsky's prize is a very rare stamp, sought by many stamp fans in the Soviet Union and the world over. To acquire it for one's own collection is regarded as a great piece of luck.

This stroke of luck came to Manevsky unexpectedly.

But first, let's go back to the year 1934. Newspapers were full of the feat of seven Soviet fliers who had rescued the shipwrecked crew and passengers of the icebreaker *Chelyuskin* from drifting ice. A few weeks later philatelists were adding a new series of stamps to their collections commemorating the event. They are known as the Chelyuskin series and one of the stamps had a photo of the Soviet flier Sigizmund Levanevsky, a Hero of the Soviet Union, in the upper left-hand corner.

On August 12, 1937, a silver-gray plane soared aloft from Moscow's Shcholkovo airport, circled the field in farewell and headed north. The plane carried mailbags containing several hundred first flight covers and postcards, and affixed neatly on all of them was the stamp on which appeared the photo of Levanevsky, the plane's pilot. But these stamps differed from the original series by having a red surcharge at the bottom: "Moscow—San Francisco Flight Via the North Pole." Only a very small quantity of these stamps were issued (Scott C-68).

The plane was lost without a trace in the ice wastes of the Arctic. And since then the stamp, known to philatelists as the "Red Levanevsky," has been a true rarity. Manevsky lacked only this stamp to be able to boast of a complete collection of USSR stamps. Every little square in his voluminous album was filled except for the "Red Levanevsky."

One day late last spring Manevsky was strolling in front of the Postage Stamp Store on Kuznetsky Most Street in Moscow. There you can always run across veteran collectors. Manevsky had made a good swap of several stamps and was preparing to leave, when someone tapped his shoulder.

"I beg your pardon, professor," the stranger said with a smile, "you see I am an ex-philatelist. Don't be surprised at the 'ex'—my collections were destroyed in Leningrad during the war. But stamps remain my weakness. I get a real kick out of a good collection. I've heard a lot about yours, and if it's no trouble . . ."

"Why, no . . . I'll be glad, indeed," Manevsky exclaimed.

Soon they were in Manevsky's apartment where, it seems, everywhere —on chairs, the couch and small table—lie albums, booklets and tiny notebooks in which collectors keep their duplicates. Manevsky showed his new friend his collections numbering some 70,000 stamps.

Here one may see the first adhesive postage stamp ever issued, the famous "Penny Black" which initiated the hobby during the reign of Queen Victoria in 1840.

It took Manevsky a good deal of time and effort to locate his copy of one of the first lithographed stamps, issued by the Austro-Hungarian government in 1871. He also has one of the most expensive stamps, an Austrian orange newspaper stamp, priced at 11,000 rubles in the Soviet catalog.

But what makes a collection valuable is not individual stamps, however rare. Collectors like to get all the stamps issued by a country or all the stamps of a given topic. Manevsky shows his albums with the pride of a man who has done a good job.

His bulky USSR album reflects the whole impetuous history of the young country. Literally on the very next day after the 1917 Revolution, while old money was still circulating, stamps had been overprinted with the five-pointed star, emblem of the new Soviet Republic.

And here is the pride of Soviet philately: the three Soviet series—USSR Spartakiad of 1935 (Scott 559-568), USSR Agricultural Exhibition (Scott 724-733), and the Eight Hundredth Anniversary of Moscow (Scott 1128-1146)—which were awarded gold medals at international philatelic exhibitions.

Time passed without either man noticing it. Their love of stamps, quickly made fast friends of two persons who had been utter strangers.

In the doorway Manevsky's visitor, clasping his host's small hands in his own large ones, said cordially:

"Thank you ever so much, and especially for the USSR collection. It's been a long time since I had occasion to see so complete a collection . . . the country complete."

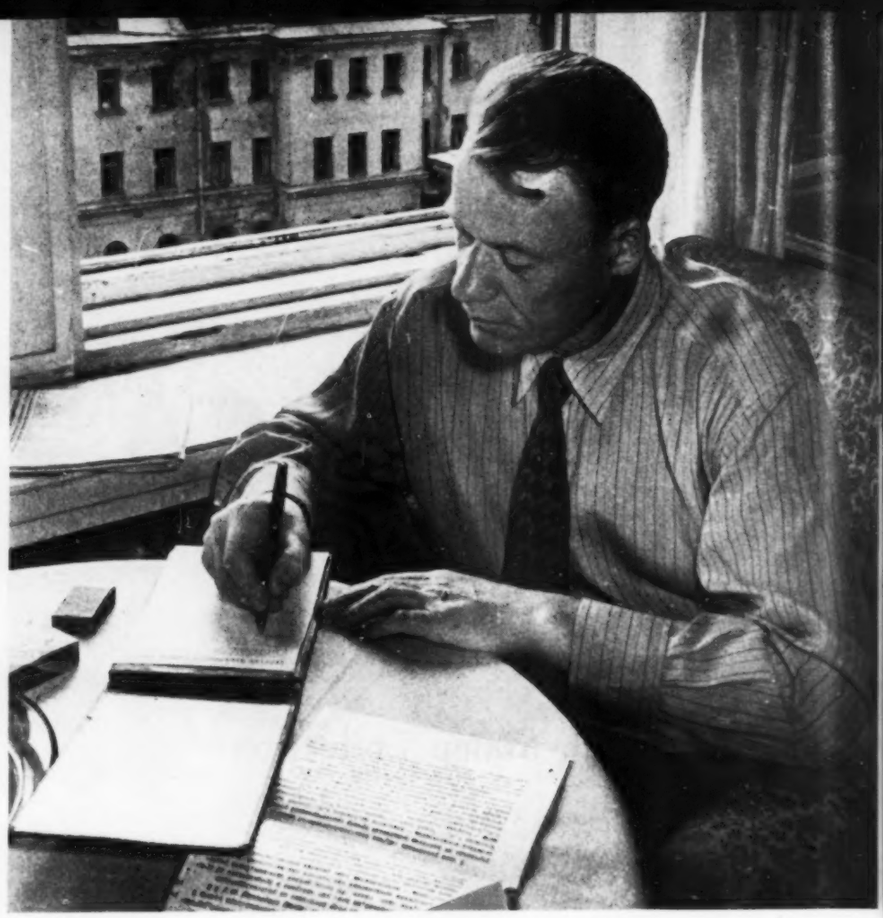
Manevsky, looking surprised, said:

"I beg your pardon. What do you mean 'complete?' I guess you didn't look carefully or you'd have seen I don't have a 'Red Levanevsky.'"

"You don't? I guess it is you who has not looked carefully," the visitor replied in his cool bass.

Manevsky ran to his album, turned several pages and was dumbfounded. There on the little square that had always been empty lay a bluish stamp. And at the bottom was the red surcharge: "Moscow—San Francisco Flight Via the North Pole."

Forgetting all else, and not trusting himself, he picked up the stamp in his trembling hands and lifted it to his eyes. And a few moments later he rushed to the door to find the stranger had disappeared.



VIKENTY NARBUTOVICH IS A DEPUTY TO THE USSR SUPREME SOVIET FROM THE BYELORUSSIAN CITY OF GOMEL.

HOW I BECAME A LEGISLATOR

By Vikenty Narbutovich

Vikenty Narbutovich is a member of the Soviet parliament from the Byelorussian city of Gomel. More formally, his title is Deputy to the Supreme Soviet of the USSR.

Like most of his fellow deputies, he is neither a lawyer nor professional politician. By trade he is a machinist. He is employed at the Gomel Agricultural Machinery Works, one of the largest of the farm machine plants in Byelorussia. In this article, he gives us an intimate glimpse into the background and day-to-day activities of a typical member of the Soviet legislative body.

People often ask me how I became a deputy to the Supreme Soviet. I find the question hard to answer because it happened so simply and naturally.

I have lived in Gomel all my life. I started work at 14—this was before the 1917 Revolution—as a bricklayer's helper on construction. After the Revolution I learned the trade of fitter. Then I became a boilermaker. Then I got a job as lathe hand at the Gomel Agricultural Machinery plant, and I stayed there.

When I began working in the plant, during the thirties, we were turning out seeders and graders. We thought then that they were terrific machines. But by comparison with the complex machinery our assembly line turns out these days—corn harvesters and beet-digging combines—those early machines look pretty primitive.

I became a machinist, then was promoted to foreman. Now I'm manager of the assembly shop. As a rank-and-file worker I learned the problems of the men and as I advanced in the plant, I kept their friendship and confidence.

All my life had passed before the eyes of my co-workers and fellow townsmen. In 1954 they nominated me as their candidate for deputy to the Supreme Soviet of the USSR, and I was elected by the voters of my district. That was all there was to it.

The job of deputy isn't a simple one. It means not only meeting people and listening to their problems, some of them very difficult to adjust, but getting enough facts and information to make sensible decisions on things I knew nothing about before I was elected. This takes time and energy.

Like most of our deputies, I combine my work as legislator with my job at the plant. I have a secretary, and the allowed thousand rubles a month for clerical help. But aside from that and a per diem allowance while the Supreme Soviet is in session in Moscow, deputies are not paid.

NARBUTOVICH COMBINES HIS WORK AS LEGISLATOR WITH HIS JOB AT THE PLANT; BY TRADE HE IS A MACHINIST.

The work of keeping in touch with my constituents is made somewhat easier by the fact that there is an office set aside at the plant for receiving visitors. Saturday is my official visiting day, but I frequently have to take time off during the week to talk to people who can't meet me on Saturday, or to travel to parts of my district where I'm needed.

The plant is in my district also. So that I have obligations there, too. I recently had to solve an interesting problem for a group of people in the shop who wanted to build their own homes.

The way it works is that the state bank will extend a long-term loan at two per cent interest to people who want to build their own homes. The city council—we call it the city Soviet—allocates plots of land for permanent use. Ordinarily, this is routine procedure. But this time there was a hitch.

When I talked to the chairman of the city Soviet, he objected on the ground that the plant had no real housing problem. The people who wanted to build already had apartments. And since the city was suffering from a shortage of building plots and the plant had already been allocated its full quota of housing

THE DEPUTY VISITS ONE OF THE CITY'S NURSERIES. HE HAS AN OFFICE AT THE PLANT FOR RECEPTION OF VISITORS.

land, he saw no reason for further grants.

I could see his point, but these were my constituents. They wanted to build homes, and it was my job to help them. We discussed all sorts of possibilities, looked over the whole territory and finally we came up with a reasonable solution.

There was an abandoned quarry not far from the plant. If the land could be graded, it would give building room to spare. It took some talking to persuade the city officials to grade the area. But we did it. We have 40 houses going up there now. I've been invited to two housewarmings already.

Something like this which involves purely local problems is naturally simpler to meet than those which involve larger areas. Gomel, for example, has been having difficulties with its electric-power supply. Although the local power station has doubled its prewar capacity, it still does not produce enough to meet the growing population and industrial needs.

Local people complained to me about restrictions in their use of electricity. They thought it was time something was done about giving Gomel more power.

When I came to Moscow, I went to the Ministry of Power Stations and registered the complaint of my constituents, incidentally putting in a couple of strong words myself. The Ministry promised to send a portable power station. When I got back home, the station had arrived and was waiting on a spur track in the Gomel yards. It hadn't solved the problem completely, but it will help until the big new power station is finished.

As I see it, the function of a deputy is to act as a sort of agent in behalf of the people he represents. If he does a responsible job there, he will be acting in behalf of all the people of the country at the same time. Take the question of pensions, for example. Like all other deputies, I have often had to deal with them in my district.

Our social security system is very broad and embraces all wage and salaried workers and their families. There are no premiums to pay, directly or indirectly. And the benefits are paid by the state. There are no "fine print" clauses containing unexpected exemptions. But still pension legislation needed some up-to-date revision.

For many years it was a whole hodge podge of laws and resolutions that had been passed at different times, and much of it was obsolete. The main trouble was that during the war and the period following it, discrepancies had developed between the wage levels, which were rising, and pensions, which had remained more or less static. Pensions granted to some occupational groups had not been revised since the early thirties and now were too low. Complaints about the pension setup were increasing. That's why a thorough reorganization of the whole system was needed.

It was a complicated problem which affected the national budget. During my two years as a deputy I had learned what balancing the budget meant. In this case it meant raising an additional 13 billion rubles over and above the budget figure of 25 billion rubles that had been allocated for pensions this year. And to accomplish this without increasing taxes at the same time would take some doing.

A solution was found and a new Pension Law was adopted by the Supreme Soviet last July. But it took a great deal of work and thinking, not only by the deputies and the government officials, but by the people generally.

Two months before the July session of the Supreme Soviet, a proposed draft of the new Pension Law was published in the press for discussion throughout the country. Everyone in my district debated the provisions, both at meetings and in conversation. There was general agreement, but, as usual, disagreement as to detail.

This must have been happening everywhere because when the Committees on Legislative Proposals of both houses of the Soviet parliament met, they were faced with 12,000 letters containing amendments and proposals for changes sent in by Soviet citizens. Many were finally adopted, with the result that an additional 500 million rubles had to be added to the budget.

The July session thoroughly discussed various aspects of the pension problem before the legislation was finally adopted.

I was glad to vote for the new Pension Law, a vast improvement over the old one. It guarantees all citizens old age pensions ranging from 50 to 100 per cent of their former earnings, at age 60 for men and 55 for women. For workers engaged in heavy and hazardous jobs, certain office and factory tasks, the age level is five years lower. The new law also provides for disability benefits, including those that arise from non-occupational ailments. Pensions are also paid to widows and children in event the husband dies.

Upon my return home after the session of the Supreme Soviet, I found my constituents pleased. Many of them told me the new law was exactly what they had suggested. This again showed me that when one meets the demands of his local people, he is also satisfying those of the whole country.

This session of the parliament also considered a number of important international questions. The resolution of the Supreme Soviet on disarmament directed to the parliaments of other countries was approved. The resolution of the Japanese parliament on the prohibition of atomic and hydrogen bomb tests was discussed and a statement adopted noting the unity of viewpoint of both the Japanese and the Soviet legislators on this question.

These are only some of the questions on which I have to speak and vote at sessions of the law-making body of my country, not simply as representative of the people who elected me, but as representative of the people of the whole country. I am one of them and their needs and interests are my own.

AT A SESSION OF THE USSR SUPREME SOVIET.

FACES FROM

RECONSTRUCTING PORTRAITS OF OUR ANCESTORS

SCILURUS, KING OF THE SCYTHS

On your visits to museums you may have seen pictured reproductions of primitive man, the Neanderthal or the Pithecanthropus. As you look at them, you wonder, did that primitive man, near descendent of the ape, really look like that? And these hunters, fishermen, craftsmen of the stone and bronze ages, how could the artist possibly reproduce the faces of men who lived so long ago that their very memory is lost in the mists of time?

Mikhail Gerasimov, the Soviet archaeologist, asked himself these questions a quarter of a century ago. Was it possible, he speculated, to reconstruct the appearance of our remote ancestors from pieces of skull found in excavation, not as imaginary, generalized reproductions, but as individualized and authentic portraits.

Cuvier, the French naturalist, had worked on this problem, but with extinct animals. McGregor, the American scientist, and the German scientists Martin, Solger and Eggeling had all molded generalized portraits of ancient man around his skull. But as for constructing a portrait of the individual ancient man whose skull it was, they considered that visionary. Many authorities categorically declared it impossible.

Gerasimov was not convinced. He was searching for a scientific foundation for the idea. There were cases in which the skull of a man who had died long ago was identified by his death mask. The skulls of Schiller, Goethe, Dante, Bach and Raphael had been identified in this way. Why not reverse the procedure? The basic principle would not be altered: identification based upon the relation between the bone foundation and the flesh of the human face.

Pavlov, the great physiologist, used to tell his students, "Facts are the scientist's air. Without them you will never be able to take flight." Gerasimov began by collecting facts, so that he could find the laws which governed them. There had been a little work done in the field, but in reality he had to begin from the beginning.

Thousands of measurements, made according to one system, for purposes of comparison. . . . A study of the most minute details of the structure of the face and skull. . . . Innumerable photographs and X-ray pictures to see the bone foundation beneath the living tissue of the human face. . . .

Gradually Gerasimov acquired a vast amount of data. He discovered certain laws and drew conclusions from them. He made tables and diagrams that could be used in practical work.

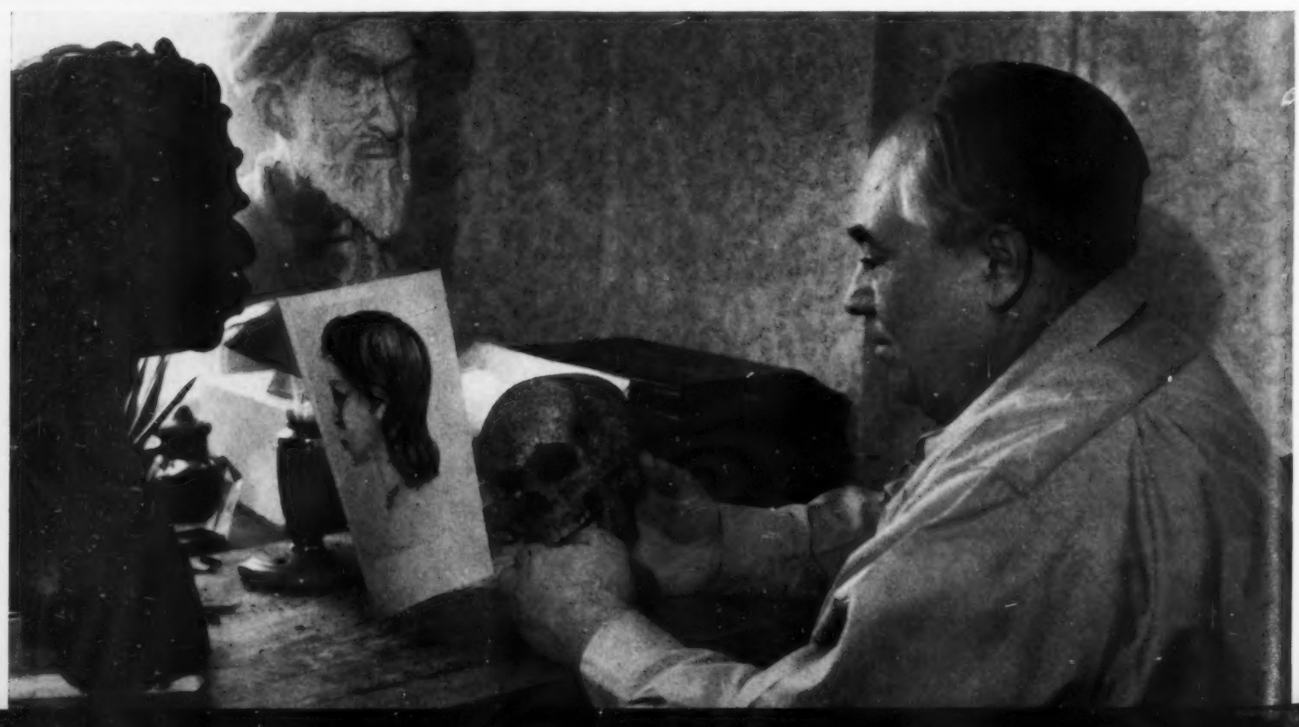
CLOTHING A SKULL

A skull lies on the table before Gerasimov. It is all he has to work from. Is it the skull of a man or woman? How old was the person at death? What was the shape of the nose, mouth, chin, forehead?

From a painstaking study of the peculiarities of the skull and the fine details of bone structure, sifted through the experience he has gathered over his many years of work, Gerasimov has a general idea of what the person looked like. He sketches on paper a "graphic reconstruction" of the face-to-be. Finally, he molds soft wax onto the skull to create a sculptural mask-portrait. Then come the hairdress, beard and apparel. Here Gerasimov is aided by his knowledge of the period, by museum exhibits and by the creative imagination of the scientist.

At last a cast is made. The skull is returned

ARCHAEOLOGIST MIKHAIL GERASIMOV AT WORK IN HIS LABORATORY. HE HAS DEVELOPED A METHOD OF RECONSTRUCTING AUTHENTIC PORTRAITS FROM THE SKULLS.



THE PAST

By

Boris Lyapunov

TESHIK-TASH BOY (STONE AGE)

to the museum, institution or tomb from which it was borrowed. And another portrait, made sometimes hundreds and thousands of years after the death of the individual, is placed in Gerasimov's portrait gallery.

It is an unusual gallery. Dozens of figures line the shelves: Tamerlane, fourteenth century conqueror; his grandson, Ulugh-Beg, fifteenth century astronomer; an eighteenth century Russian admiral; a twentieth century war hero, side by side with portraits of ancient man, whose bones have laid buried for eons.

How trustworthy are these portraits? How can we judge whether the reconstruction is identical with the original face? Gerasimov answers these questions:

"As we all know, even a photograph is not identical with the original. An artistic portrait, whether done by a painter or sculptor, is still less objective. The reconstruction from the skull should be a sort of intermediate link between the artistic and the photographic image. It should give a generalized appearance which, however, possesses enough features of individualized portraiture to enable us to identify the unknown person."

A THEORY PROVED

Gerasimov set up a series of control experiments to prove the possibilities of his method. In 1939, he was given a skull and he did not know to whom it had belonged. He reconstructed the face. When it was compared with a photograph, Gerasimov found that he had shaped the head of a Papuan, who, by some trick of fate, had landed in Russia many years before. The likeness was so complete that this first experiment silenced his most vocal critics.

Another skull was sent to him from a vault in a Moscow cemetery. The reconstructed face proved to be that of a middle-aged woman. It was Maria Dostoyevskaya, mother of the author. There was a difference between the face and a contemporary portrait. The bridge of the nose was not the same. Other evidence showed, however, that the mistake lay not with Gerasimov but with the artist, who had catered to the tastes of his period.

Shortly after the war, the parents of an army officer killed in action asked Gerasimov to make a portrait of their son. It proved to differ in some respects from a photograph of the man. Gerasimov offered to make the necessary changes, but the parents refused. The portrait, they said, bore a closer resemblance to their son than the photograph.

In a forest near Leningrad a human skeleton was found. The body had been eaten up by wild animals; the bones bore clear traces of animal teeth. The skull was found later and given to Gerasimov. He reconstructed the head and had it photographed. Meanwhile, a boy was reported missing from a nearby village. The father was shown a large group of photographs, the boy's among them, and he recognized the photograph made from Gerasimov's reconstruction as that of his son.

Gerasimov was not satisfied with the success of these scattered trials. He set up a large-scale control experiment by reconstructing twelve heads from skulls sent to him from Leningrad without any information about them. The results exceeded even his expectations. In every case he achieved a remarkable likeness.

Gerasimov's work was exhibited during the 220th anniversary celebration of the USSR Academy of Sciences. Professor Field, head of the department of anthropology at the Natural History Museum in California, who had been skeptical about the possibilities of portrait reconstruction, was astonished. "I couldn't believe my own eyes," he said.

Each new portrait brought Gerasimov additional proof of the validity of his method. He began to work on reconstructions of historical personages.

FIGURES FROM HISTORY

He was given the skull of a warrior found during excavations in the Crimea. He reconstructed the head. The archaeologist who had given him the skull studied the wax model for some time, and then asked Gerasimov to put a beard on it. After Gerasimov had done so, the archaeologist exclaimed in amazement: "Why, that's Scilurus, king of the Scyths!" He recognized the head from bas-reliefs and Scythian coins dating back to the second century B.C.

The tomb of an archbishop was found near the walls of the Sofia Cathedral in the ancient Russian town of Novgorod. Judging by the crosses embroidered on the archbishop's vestments, one could tell that it was either Vasili or Moisei, both fourteenth century church dignitaries. Historians did not agree. The head reconstructed by Gerasimov bore an unmistakable resemblance to an ancient painting

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PHOTOGRAPH (LEFT) COMPARED WITH FACE RECONSTRUCTED FROM THE SKULL AFTER THE YOUTH'S DEATH.

FACES FROM THE PAST

Continued from page 23

of Archbishop Vasili, which Gerasimov had never seen.

In 1939 Gerasimov reconstructed the head of Prince Yaroslav the Wise of Kiev who lived in the eleventh century. There was no authentic portrait of the prince at the time, but two years later a fresco was uncovered during restoration work on a cathedral. The fresco showed an old man in prince's raiment. It was Yaroslav the Wise, whose face Gerasimov had reconstructed.

Gerasimov was so certain of the scientific validity of his method that he confidently questioned the fidelity of portraits painted from life in the past. An illustrative case was his reconstruction of the head of Fyodor Ushakov, eighteenth century admiral of the Russian Navy. It differed noticeably from the painting which has come down to us, but brought out to a much greater degree the energy and determination which contemporaries ascribe to the admiral.

Anthropological measurements of the skull showed that the painting was not faithful to the original; the contours of the skull and the contours of the face did not match. The artist had depicted the outlines of the forehead, the eyes and certain other details of the face correctly. But the contemporary ideal was a long face, and the artist, painting by that standard, had deprived the face of expression.

OUR ANCESTORS

Busts of man's remote ancestors occupy a prominent place in Gerasimov's gallery. His portrait of a Neanderthal boy has become famous.

During excavations in the Teshik-Tash cave in the mountains of South Uzbekistan, archaeologists uncovered a camp of Neanderthal hunters, early Stone Age remains. Animal bones, stone weapons, and ashes of a campfire provided a picture of how those primitive people lived.

Gerasimov started with the skeleton of a nine- or ten-year-old boy and a skull broken into tiny pieces. He first put the skull together. Then, by taking the peculiarities of the skull into consideration, he reconstructed the head of a boy who lived 75,000 years ago.

Although it has a highly developed superciliary ridge, a low, sloping forehead, a large projecting upper jaw, and retracted lower jaw, it is unquestionably a human face. This was the Teshik-Tash boy. Gerasimov was not content with the head, but reconstructed the entire body of that prehistoric boy from the bones of the skeleton.

His work on the Cromagnon forerunner of modern man is also interesting. The Cromagnon man replaced the Neanderthal man. He represents a more advanced stage in development. The skeletons of a Cromagnon man and woman were discovered in the Crimea. "The neck is strong, the head is held erect, and the general impression is that of a harmonious combination of strength and intelligence. There is no hint of the primitiveness or savagery of primordial man," says Gerasimov, who made sculptural portraits of both Cromagnons.

Gerasimov is now working on sculptural portraits of the ancient peoples who once inhabited the territory of the Soviet Union.

HELP FOR THE CRIMINOLOGIST

Not only do historians, anthropologists, ethnographers and archaeologists make use of the work of Mikhail Gerasimov and his students Criminologists and medical examiners also turn to them for help. On more than one occasion portraits made from the skull have helped to solve a crime.

Fishermen found the mutilated corpse of a man in the river. It was evident that the man had been murdered. The length of time the body had been in the water was determined, and it was found that three men had disappeared at about that time. Their names were known, but it was impossible to determine which of them was the murdered man.

Petrov, a pupil of Gerasimov's, made a cast of the reconstructed head of the man found in the river. It was photographed and sent to the relatives of the missing men. A mother recognized the photograph as that of her son. The murderer was found soon after.

ANTHROPOLOGICAL "KITCHEN"

A visitor dropping in to see Mikhail Gerasimov would be likely to find him sitting over a heap of fine bones that look like the pieces of a clay pot. They are fragments of a skull. Painstakingly and patiently he fits the bones together. Then comes an intensive study of the skull. Only after that does he begin to reconstruct the flesh of the face.

Wax impressions of the masticatory and temporal muscles are fastened to the skull. Then a unique "framework of thicknesses" is made on the basis of standards that have been worked out. The "framework" is a system of vertical wax ridges reproducing the profile and other characteristic lines of the outer contour of the face. The spaces between the ridges are filled in with a layer of wax of corresponding thickness.

Gerasimov got the idea for his system of ridges from Andrei Krylov, the famous Russian shipbuilder. Like the frame of a ship, the wax ridges make a foundation for "planking" the face.

One side of the face is left untouched at the beginning. It is used as a control during the process. The second half is reconstructed independently of the first half. This is done because asymmetry is one of the characteristics of the human face.

The mask is ready. But before it becomes a portrait, a number of secondary but highly important details have to be added—hair, beard, mustache, clothing. And then, the portrait, sculptured hundreds, sometimes thousands of years after the subject is dead, is ready to be studied by anthropologists, to be debated by historians, and to be displayed in museums to crowds of wondering visitors.

DR. BIRYUKOV IMPROVES ON NATURE . . . . . By Ivan Vinnichenko

Dr. Arkadi Biryukov is a man who isn't satisfied with things as they are. He wants to improve on nature. He also decided for himself a long time ago that there was no law that said a man should have only a single profession, even one so demanding as that of a physician. So he decided to have two. And he has done a remarkable job with both, not to speak of what he has done with nature.

When I went to see him, he met me at the door. He's a short man, no longer young in years but with all of a young man's energy and spirit. He was wearing a beat-up cap and a faded blue shirt. I asked to see his garden. He said that he'd be more than happy to show it to me.

I wasn't prepared for what I saw. This was no garden. It was a world of trees, flowers and shrubs back of his house, 200 kinds of apples, cherry trees in dozens of varieties, plants collected from all parts of the world, a towering walnut tree with its huge crown of leaves, the black American raspberry, an uncommon guest here. In one corner were lianas from the Far East and alongside them, a vine from the Crimea.

It was all a little breath-taking. This was not a garden in the warm south I was looking at. This was Shadrinsk, in the far north, beyond the Urals, a region notorious for its long, bitter winters and its very short, dry summers.

More than that, these luxuriant bushes and blossoming fruit trees were growing not in the nursery of some famous research institute, but in the orchard of the self-taught horticulturist of Shadrinsk, who also happened to be the best children's doctor in the whole area.

As he led me through this most unusual orchard, pointing out trees and rare shrubs and telling me the life histories of his plants, I must confess that I was even more interested in the life history of this remarkable physician-horticulturist. It was not easy to turn the conversation. He was much more interested in the stories of his plants than in reciting what he thought were the dull and unimportant details of his life. But as we went on talking, I saw that his personal history was really the history of his orchard.

He was born and brought up right there in Shadrinsk. He had lived there all his life. In his boyhood, there was very little grown in the peasant orchards outside of the local wild cherry. It was a midget tree and bore a sour-tasting fruit. There were practically no cultivated orchards in the area. When he was young he had seen one or two of these cultivated orchards. Even then, he had been struck by the contrast with the peasant orchards and had felt his green thumb itching to go to work.

But it was more than 20 years before he got the chance. By then he had been graduated from the university and had already been working for a year and a half as doctor in the city clinic.

One spring day he was called to attend a sick worker at the experimental station at Shadrinsk. He took care of the sick man and then walked around the station, looking on enviously at the men working in the nurseries. That same day the station director had received a supply of seedlings from the fruit nursery. He knew about the young doctor's passion for growing things and he gave him one of the "Bellefleur-Kitaika" variety.

Biryukov took it home and almost ceremoniously he and his wife and their three children planted the first tree. He watched its progress from day to day, as it took root, as it began to grow branches and leaves. And then, in one sad day, the bark turned black and the tree died of black rot.

But once he had begun, there was no stopping him. He ordered new saplings and seeds, began to read the technical literature on gardening. Among other things, Biryukov read about Ivan Michurin, the famous Russian naturalist, who had started his great work as a practical experimenter and had created hundreds of new kinds of plants. Michurin became his model.

But it is one thing to plan and to dream and quite another to make a dream come true. In the spring of 1930, Biryukov already had several different varieties of apples blossoming in his orchard to prove to himself and to local growers that fruit could be grown even in that rigorous climate. By then he had visions of fruit cultivation beyond the Urals.

But he was lacking in both experience and technical knowledge. Study? That's easy to say. There was his family to support. And a provincial doctor has little enough time to spare from his work.

Doctor Biryukov compromised. He signed up for a correspondence course with the Timiryazev Agricultural Academy. It had the best horticulture teachers in the country. Then he got down seriously to the business of changing nature.

As of now, he has to his credit more than 50 varieties of apples, 20 varieties of cherries and two varieties of grapes. His fruits and berries are cultivated throughout the region. Growers in Shadrinsk and the neighboring villages get saplings, grafts, seeds from Dr. Biryukov's orchard, all without charge, of course. He has laid out more than 50 model orchards around Shadrinsk. He is indefatigable in organizing demonstrations, in lecturing and writing.

The results are evident in this newly blossoming area. Twenty-five years ago a cultivated orchard was a rarity. Today, there are 800 orchards in Shadrinsk alone, a living, growing testimony to a man obsessed by an idea of growing fruit where none had grown before.

The old doctor wanted to show me one of his special apple trees before I left.

"Look at that," he said excitedly, like a father proud of his first baby. I looked. It was just another apple tree to me.

Biryukov grinned, then he plucked one of the small green apples and cut it in half. I looked at the two halves. There were no seeds or seed cases.

"This is the seedless apple I've developed," he said, "from the ordinary summer variety of the Titovka. It needs no pollination. It is resistant to frost and to local pests. I am trying to increase its yield now."

He looked at it fondly and proudly. I could understand why.

"One thing more I want you to see," he said apologetically. He showed me a small bed where the seedlings were growing like a green carpet. To me they looked exactly like the seedlings in the other beds. But I saw the glint in Biryukov's eyes and I knew that this also was something new and unusual.

He bent over the beds and separated the young plants very carefully. The plants were growing in couples, each pair seemed to be grown together like Siamese twins.

"This is the first step in creating an intra-species hybrid of briar and apple," he explained. "This is an unusual hybrid. The fruit of the briar has the largest concentration of vitamin C, but it's not edible. As for the apples, even those with the richest vitamin content have only ten per cent of the Vitamin C which the briar has." He was trying to combine the best features of both by grafting.

"What I want to try also," he said, "is the purely medical method of 'serotherapy' in training hybrids. Michurin did that to produce his 'sugar substitute' peas. He injected sugar under the hybrid skin. I want to inject a Vitamin C solution."

Biryukov was quiet for a moment, then he added, "Here in this bed are the results of the many years of work I've done both in horticulture and medicine. If my new 'medical hybrid' proves a success, I'll be able to say I haven't wasted my life."

I could have told him that everybody but the old doctor of Shadrinsk had come to that conclusion a long time ago.

NOT ONLY DO PATIENTS VISIT DR. BIRYUKOV; AGRICULTURISTS ALSO CONSULT HIM.

MARTIN ANDERSEN NEXO'S *MEN FROM DANGOR* WAS SHOWN AT THE FESTIVAL

Baltic Theater Festival

By Edward Smilgis
Director, Art Theater of the Latvian Republic

Ligo, the Latvian national holiday, is celebrated on one of those warm June nights when the twilight seems to linger. The Latvian girls dress up in bright ribbons and colorfully embroidered national costumes. They thread flowers in their hair and flirt with their young men. They walk hand in hand across the meadows down to the river. There the young men light barrels of tar, set up on long poles, and sing the old Ligo songs, dedicated to St. John, patron saint of farmers.

This year, theater people added a new quality to the old holiday with a drama festival. The three Soviet Baltic Republics, Estonia, Latvia and Lithuania, participated. Some Karelian companies, too, were invited.

Each of the republics first held its own theater contest to choose the best play and best company.

Riga, capital of Latvia, was host for the festival, announced in brightly colored posters all over the city. Large and expectant audiences attended each of the preformances.

The first play, Martin Andersen Nexo's *Men from Dangor*, presented by a Karelian company, was a surprise to many Riga playgoers. They knew Nexo as a novelist and were unaware that he had written this one play. It was the first time the drama, centered in a Danish village at the turn of the century, had been staged. Produced by Sulo Tuorila, with Elizabeth Tomberg in the leading role, Rigans found it an exciting evening of theater.

Riga was happy to welcome Estonia's oldest theater, the Vanemuine company. The 85-year-old playhouse produces dramas, musical comedies and ballets. The company follows the realist tradition and its production of Evald Tammlaan's *House of Iron*, directed by App Kaidu, bore witness to the richness of the form when used by a gifted company.

Tammlaan's play, written in 1937, tells of the tragic love of the sailor Peeter for Iige, daughter of the ship's captain. Iige yearns for adventure and romantic love, her parents thrust wealth and security upon her. The clash of values between the rigid and fearful older generation and the bolder young generation was conveyed by Tammlaan with powerful dramatic contrast.

The writer knew his people of the sea. He lived with them as ship machinist and as salter in the herring fleet. When Estonia was occupied by the Nazis, he was imprisoned in the Stutthoff concentration camp in Germany. There he died.

Lithuania's contribution to the festival program was the period play by Antanas Venoulis, *Drowned Woman*, set in a nineteenth century village. Its focal episode is a tensely dramatic scene in which Veronica, the heroine, is consigned to perdition by a priest. The production demonstrated the skill of Lithuania's actors and an intimate knowledge of the period.

The Latvian Theater presented Jan Rainis's tragedy, *Joseph and His Brothers*. Rainis took his theme from the Bible, but the point of his play is directed to the present and future, rather than the past. The justice which Joseph seeks is not to be found in personal revenge against his brothers, the playwright says; man finds himself only in struggling for a better future, for the social good. Alfred Amtman-Briedit, dean of the Latvian theater, who produced the play, evoked both its profound philosophical implications and its dynamic humanism.

Each of the plays produced at the festival had its own national flavor. The plays differed in theme and in interpretation. But each one, the romantic *House of Iron*, Venoulis's period piece, the epic *Fortress on the Bug*, the psychological *Men From Dangor*, the philosophical legend *Joseph and His Brothers*, was a mature expression of the national theater from which it derived.

Together, they marked a significant event in Soviet theater and a creative addition to the ancient Ligo holiday celebration.

THESE DANCERS ARE CELEBRATING LIGO, LATVIAN NATIONAL HOLIDAY.

THE LATVIAN THEATER OF DRAMA PRESENTED *JOSEPH AND HIS BROTHERS* AT THE BALTIC THEATER FESTIVAL.

THIS SCENE IS FROM THE ROMANTIC *HOUSE OF IRON* PRODUCED BY THE VANEMUINE THEATER OF ESTONIA.

SCHOOL FOR MILLIONS

At the USSR Agricultural Exhibition

By Zigmund Khiren

The USSR Agricultural Exhibition in Moscow is a unique school for millions of people engaged in farming. Its purpose is to publicize broadly agricultural developments in many fields and to facilitate the swift introduction of the achievements of scientific research and advanced methods of farming into all branches of the country's agriculture.

Within the past two and one-half years some 20 million persons from every part of the country have visited the permanent Exhibition. As a result of visiting the Exhibition and participating in its training program, millions are ready to apply the latest and most advanced techniques on their own collective and state farms, machine and tractor stations.

The Exhibition is located in a northern suburb of Moscow. The beautifully designed pavilions, the theater and moving picture houses give the feeling of a city, self-contained, within Moscow.

Each of the Union Republics has its own pavilion, reflecting its national culture architecturally and displaying its major products inside.

Participants in the Exhibition are selected on the basis of their contribution to the country's agriculture, whether for quantity or for quality or for improved methods of farming.

The Ryazan exhibit is a case in point. Up to 1955 that region had not been particularly noted for its dairy farming. But the Ryazan farmers, with changed methods of operation, began to supply more milk than any other comparable region. The Ryazan collective farmers were thereupon invited to exhibit. Increased grain production won the farmers of Voronezh, Belgorod and Balashov places in the Exhibition.

This year participants and exhibitors include 7,000 collective and state farms and machine and tractor stations, 4,000 livestock breeding farms and more than 200,000 people who have done outstanding work in agriculture and animal husbandry.

Many of the participants are men and women who came home from the war to find their fields choked with weeds and pitted with shell holes. They have seen storms beat down their

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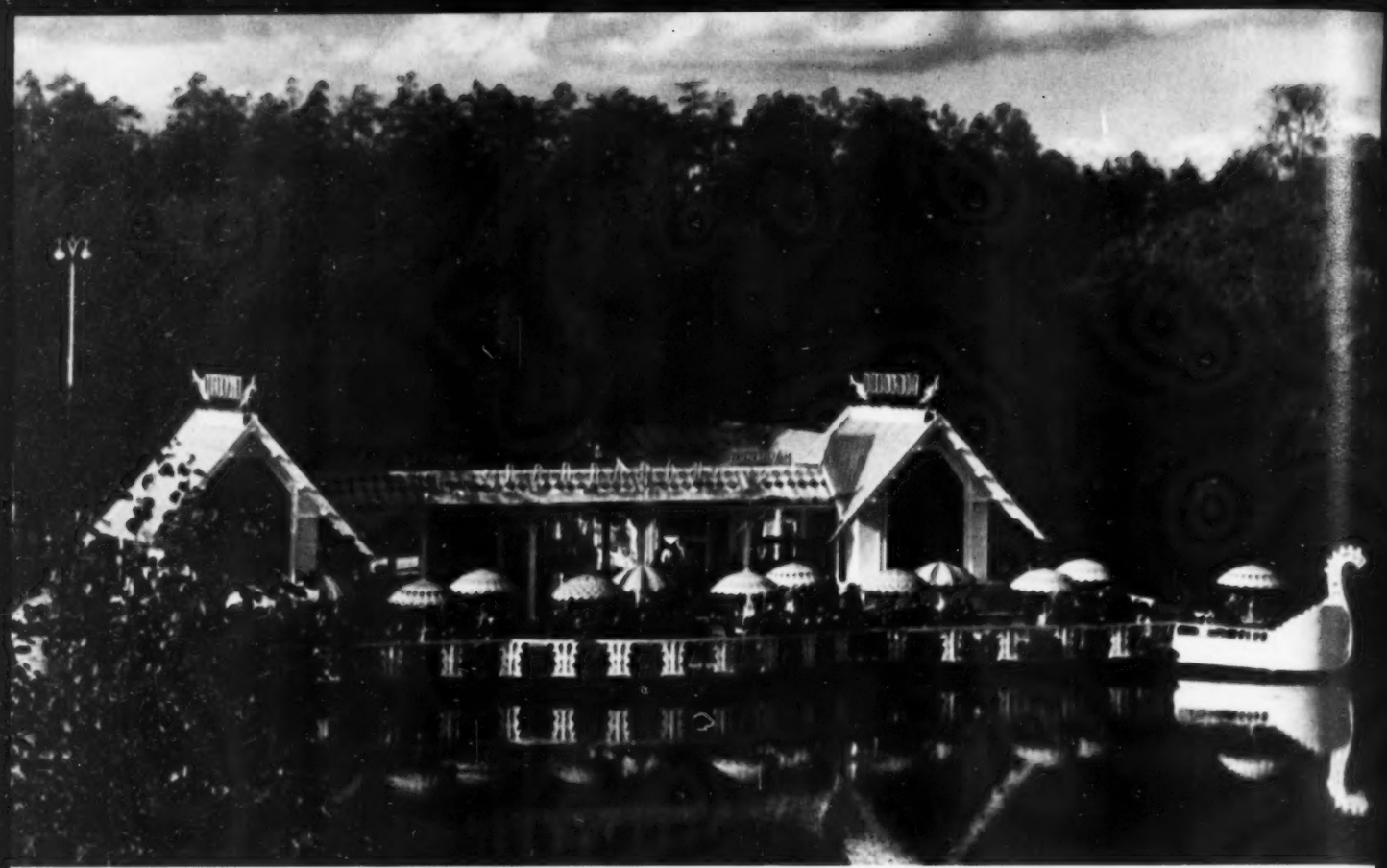
A VIEW OF THE AGRICULTURAL EXHIBITION. SOME OF THE PAVILIONS HOUSE THE INDUSTRIAL EXHIBITION.

THE ARCHITECTURE OF THE PAVILIONS REFLECTS THE NATIONAL FEATURES OF THE GIVEN REPUBLICS. THIS ONE REPRESENTS THE GEORGIAN REPUBLIC.

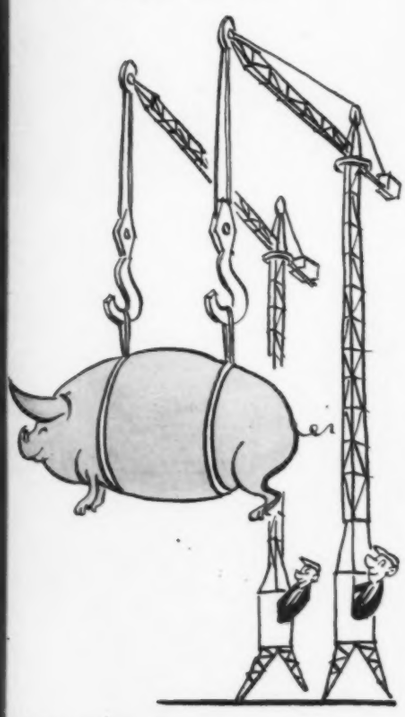


THE OPEN-AIR RESTAURANT ON THE BANK OF THE POND IS ESPECIALLY POPULAR.

MECHANIZATION AVENUE OF THE EXHIBITION.

IT REACHES UP TO THE CEILING!

"I WONDER WHO HIS BARBER IS!"



UNLOADING AN "EXHIBIT."

Continued from page 28

ripe wheat and drought bake the soil and burn out their crops. But they are strong people who have taken the future into their own hands.

Anna Ladani is one such person. She is almost miniature, with striking black eyes. She comes from Velikiye Luchki. To reach it you must cross the Carpathians in a train that winds its slow way through towering mountain forests before it reaches the plain.

Velikiye Luchki stands on the banks of the Latoritsa River. It has always been one of the largest and richest villages in the region. Had you visited Anna two years ago she would willingly have shown you her corn, but not her house. The corn stood higher than the tallest man in the village, a rich crop that she had raised with a small group of farm women who work with her.

This year she will gladly show you her prize corn, but she will be even more pleased to show you her newly built brick house. She will tell you what her farm looked like, choked with weeds and half-destroyed when she came back to it after the war, and what it meant in labor and almost inhuman effort to put it

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VEGETABLE PLOT AT EXHIBITION IS VISITED BY MANY.

EVERYBODY WANTS THIS GUIDE'S AUTOGRAPH!

Beryozka means birch tree in Russian. But this fact does not explain the connection between the popular forest specimen and the graceful folk dancers who make up the Beryozka Folk Dancing Company. And so I went to Nadezhda Nadezhdina, director of the company for my answer.

"In 1948," she told me, "a dance festival was held in Moscow. Amateur folk dancers came from all parts of the country. One of the dance numbers presented was the Beryozka Reel. I had directed it and it was performed to the accompaniment of the old and popular Russian song about the Beryozka, the birch tree, to symbolize youth and spring. At the final recital in the Bolshoi Theater, the dance made such a big hit that I was asked to build a professional company to specialize in Russian maidens' reels and other folk dances. When we gave our first recital, we opened with the Beryozka Reel and the press started to call us the Beryozka dancers.

"The group was originally made up of the best dancers from the amateur company and several graduates of the Moscow School of Choreography. There were 20 dancers, all women, and two accordionists. Today there are only a handful of the old-timers left, the rest are scattered. Some are directing amateur dance groups in Moscow; some have gone ahead with their studies in high school and college; others are busy keeping house and raising a family. That's the story. And now if you want to see us at work, come around tomorrow. We're very busy working up a new program."

The Company

The Beryozka Company does not have a theater of its own. It doesn't need one. It lives on wheels. It is almost always on tour, either throughout the Soviet Union or abroad. When the Company needs a hall for rehearsal, it rents one.

At ten the next morning I showed up at the Moscow Power Institute. The Company had rented the Institute's large hall for morning and afternoon rehearsal.

All 36 dancers, in rehearsal costume and ballet slippers, had already gathered. I was introduced to soloists Jella Agafonova, Tamara Lukyanova, Nina Ryabova, Lyubov Trynova, Valentina Fedyukhina and Klavdia Romanova. Some of the girls were limbering up, several were strumming balalaikas.

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Beryozka

By Yuri Fantalov

THE NORTHERN REEL CONVEYS THE FEELING OF THE NORTH IN THE DANCE'S SLOW TEMPO AND DAZZLING BEAUTY.

TIME HAS NOT CHANGED THE GREAT APPEAL OF THE *TROIKA* DANCE, WITH ITS RHYTHM AND CHARM.

Continued from page 32

I met several girls I knew from the Bolshoi Theater's School of Choreography. We got to talking about their tours. The company had just returned from Greece, the nineteenth country it had toured. Before that had come Lebanon, Egypt, China, Britain, Yugoslavia, Belgium, Switzerland, the Netherlands, Norway, Sweden, Finland, Austria, Bulgaria, the German Democratic Republic, Poland, Rumania, Czechoslovakia and Hungary. It had been acclaimed everywhere.

When I asked them if they didn't get tired of traveling all the time, one of them, Maya Kholshchevnikova, said, "No, we don't mind. We like it. Sometimes it's a little hard on our husbands. But they understand."

The Classical Routine

While the girls walked over to the exercise bars along the walls, I introduced myself to the teacher, Maria Klementyeva, formerly one of the Bolshoi Theater dancers.

"Ready, girls?" she asked. "Begin. *Pliez.* One and two and . . ." While she counted, the girls went through the classical exercises at the bar.

That was followed by an adagio and then by leaps. They were going through the whole classical routine. I wondered why. Folk dance exercises would have seemed more to the point. I asked Maria Klementyeva about this. "You forget," she said, "that we do folk and character dancing both at rehearsals and in our concert performances. Our dancers have to acquire perfect plasticity for the reels, and they get that only by classical training. There's nothing that will take its place."

I left before the lesson ended and went down to the auditorium where the rehearsal was to take place. Nadezhda Nadezhdina was there.

IN THE OLD LINK REEL THE COLORFUL CHAIN OF DANCERS GLIDES SMOOTHLY.

THE BERYOZKA MAIDENS' REEL, THE DANCE FROM WHICH THE COMPANY GOT ITS NAME.

"Any more questions?" she asked me. "I have a few minutes before the rehearsal begins."

From Ethnography to Art

"Yesterday you told me that in staging the Beryozka Reel you set yourself the task of preserving the original folk flavor. Does this mean that you try to do dances as they would be done in their native setting? What relation is there between the pure folk dance and those your professional company does?".

"That's a complicated question of theory, but let me see what I can do to answer it.

"We really do set ourselves the aim of creating dances having a genuine folk foundation. But what does that mean in practice?

"A dance on the stage cannot be, nor should it be, an exact copy of something which the people do. There's a long road from ethnography to art. Before you can present a dance on the stage you have to 'leaven' it, so to speak, poetize it, magnify it. The most beautiful and striking movements and elements have to be collected and then integrated into an organically close-knit, logical, life-affirming dance that develops an idea. As I see it, two conditions are needed for that—a deep love of folk art, and the ability to see folk art with a poetic eye.

"To stage a dance like our Northern Reel, for example, you have to know, first of all, the dance customs of the northerners, and their manner of walking. Those two factors are bound up with their character. And to study that character you have to read their folk tales, listen to their melodies, and ponder on the meaning of their songs. All of that is not just words. What a dance should bring out, first and foremost, is the *character* of people.

"In our Northern Reel we did not try to present the dances of any particular district. We tried instead to give a generalized picture of the old-time women's dance in northern Russia. In the quiet beauty of the dancers, their slow gestures, their calm movements, we tried to give the feeling of the north, its great scope and its austere landscape. We try to get artistic authenticity, not photographic authenticity. There's a difference.

"A very careful and loving hand is needed to stage a folk dance. When you select and combine certain elements and discard others, you have to be careful to preserve the spirit. If you have the girls bend their arms in the shape

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ROLLICKING, WHIRLING ACTION IS EVER POPULAR.

CALMNESS AND GRACE ARE CHARACTERISTIC OF THIS REEL PERFORMED BY THE BERYOZKA DANCERS.

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of a swan's neck and move in a circle, that doesn't mean that you've produced a choreographic metaphor you can call the Swan Reel. The essence is not in the outward form but in the poetry of the Russian girl, her dreams, her shyness, the grace of her movements. That's the spirit behind the Russian folk tales about the Swan Queen, the White Swan and maidens lovely as swans."

Rehearsal

The girls were grouped on the stage for rehearsal. I watched them do the Spinner's Reel, a graceful dance they performed with a finished beauty. It was a story of girls spinning yarn in the far north. As they danced, they accompanied themselves with song.

The idea of the vocal accompaniment was worked out first in 1952 when the Beryozka dancers were cast in one of the films. Their song and dance number became very popular. Ever since then they have danced to their own accompaniment.

The rehearsal ended in the late afternoon. I had found my answer, and the lasting impression that I carried away was that these young girls were working devotedly to bring to their audience the beauty of Russian folk dancing and to instill new life and meaning into the ancient and honorable art.

THE DANCE COMPANY GOES IN FOR COMIC TOUCHES, TOO.

CLASSICAL BALLET EXERCISES ARE PART OF DAILY REHEARSALS, NECESSARY FOR PERFECTION.

IT'S EXERCISE AND STILL MORE EXERCISE AT EVERY REHEARSAL. GIRLS MUST ACQUIRE PERFECT PLASTICITY FOR THE REELS THEY DANCE.

NEW DANCE WILL HAVE VOCAL ACCOMPANIMENT.

NADEZHDINA GUIDES THE REHEARSAL OF THE FLOWER WALTZ. DANCERS SET THEMSELVES THE AIM OF CREATING DANCES WITH A GENUINE FOLK FOUNDATION.

BYELORUSSIA

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russia was interrupted by the Second World War, which caused enormous damage to the republic's industry. The Nazis destroyed nearly ten thousand industrial enterprises, incapacitated 90 per cent of the power facilities and tore up close to four thousand miles of railroad tracks. The destruction of the country was so thorough that thousands and thousands of people had to live in dugouts.

Industrial reconstruction began immediately after Byelorussia was liberated in 1944. With the assistance of the other republics of the USSR, the Byelorussian people now have not only rebuilt their houses, factories, mills and power stations, but set up plants for the manufacture of automobiles, tractors, bearings and watches—new products for them. Byelorussian industry now turns out as much in one week as it produced in the whole year of 1913.

As part of the current Five-Year-Plan (1956-1960) the republic is building new power stations, prefabricated, reinforced-concrete plants, metal factories, silk mills, garment factories and a printing plant, which will be one

FORESTS ARE ONE OF BYELORUSSIA'S MAJOR RESOURCES. THE STATE PROTECTS VALUABLE WOODLAND AND WILDLIFE.

MORE THAN THREE MILLION ACRES OF SWAMPLAND WERE DRAINED IN BYELORUSSIA IN THE LAST 35 YEARS.

of the largest in the Soviet Union.

Byelorussia now is humming with industry.

THE FRUITS OF THE EARTH

Before the Revolution Byelorussian farmers had tiny plots of land and many of them had no land at all. A wooden plow was the chief farm tool. The crop yield was low and the harvested grain was insufficient to carry the farmer through the year.

Life in the Byelorussian villages is completely changed now. The land is owned by those who work it. Modern farm machinery of every type is used everywhere. Harvests are incomparably greater.

Intensive reclamation projects were carried out in the swamplands and marshes to increase greatly the acreage for farming. The new land was found rich in organic substances and produced even larger yields than other lands.

Crops in Byelorussia are diversified. Among the cereals rye holds first place. Wheat is widely cultivated as are barley, oats and buckwheat. Corn and potatoes are staple crops, grown on a large scale. Byelorussia's flax crop is the largest in the USSR.

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Nikolai Mikholaii, one of Byelorussia's oldest painters, and his young assistant, Igor Konyukh.

The image of an aurochs, a wild bull now kept only in the Belovezhskaya forest preserve, has been an emblem of Minsk since ancient times. Now this emblem ornaments the trucks produced here.

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THE THIRD YOUTH OF A CITY

Minsk, capital of Byelorussia, is one of the old European cities. It is mentioned in ancient chronicles of the eleventh century. The Revolution gave a second youth to this provincial town with crooked narrow streets and small wooden houses. Thousands of modern buildings were erected, the streets were straightened and paved. The city established 11 institutions of higher education, including a university, and the Byelorussian Academy of Sciences was founded. The city's industry increased 15-fold and its population trebled.

During the Second World War Minsk was completely destroyed. The Nazis wrecked 6,000 houses, 70 per cent of all the buildings in the town. When the Soviet Army freed Minsk, it was a heap of smoking ruins.

Now Minsk is in its third youth. In the few years since the war it has been built anew.

TWENTY-NINE COLLEGES

Young people studying at Minsk University, the Polytechnic Institute or the Medical Institute find it hard to believe that there were no colleges in Byelorussia before the Revolution. People who could afford to give their children a college education sent them to St. Petersburg, Moscow or Warsaw. About 85 percent of the population was illiterate.

Today seven years of schooling in the Byelorussian language is universal and compul-

This is what Lenin Street in Minsk looked like in 1944 after the city was destroyed by the Nazis. Photo to the right shows Lenin Street today.

BYELORUSSIA'S MANUFACTURED GOODS RANGE ALL THE WAY FROM LADIES' WATCHES TO 25-TON DUMP TRUCKS.

Kozma Kiselev, Foreign Minister of Byelorussia, shows the sights of Minsk to United Nations Secretary-General Dag Hammarskjold. Byelorussians cordially welcome foreign visitors.

BOOKS ARE IN GREAT DEMAND IN THE CITY OF MINSK.

sory, and a ten-year system is in the process of being established. Byelorussia now has 29 colleges. Newspapers and magazines are published in the millions. Byelorussian scientists are often heard at international congresses, and the republic's writers and artists are recognizer far beyond the confines of the country.

DEVELOPING INTERNATIONAL TIES

Many foreign delegations and individuals from foreign countries visit Byelorussia. They are people of varied occupations and different political views, but all are cordially received by the Byelorussian people. Among the republic's visitors in the past several months was UN Secretary-General Dag Hammarskjold.

Byelorussia has been a member of the United Nations since its inception. It was represented in San Francisco 11 years ago when the UN charter was drawn up. And so the people of Byelorussia were glad to welcome the UN Secretary-General.

Hundreds of Byelorussians representing public organizations, science, art, culture and sports visit other countries every year to learn more about how other people live. The Byelorussians believe that close contact between people of different nations is one of the surest ways of reaching mutual understanding and consolidating good relations.

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THERE ARE MANY PASTURES IN BYELORUSSIA AND DAIRY CATTLE BREEDING YIELDS GREAT INCOMES TO FARMERS.

MAYBE SHE'LL BE A STAR. WHO KNOWS?

"COME AND GET IT!" THE FARM WOMAN TELLS HER CHARGES.

THIS "BYELARUS" TRACTOR PRODUCED AT THE MINSK PLANT SUITS FARMER VLADIMIR POLESHCHUK FINE.

INTERVIEWS

A correspondent of the magazine *USSR* asked a number of Byelorussians distinguished in science and culture what they were working on now.

These are the answers they gave:

VASILI KUPREVICH, President, Academy of Sciences of the Byelorussian Republic.

Your magazine would have to add twice as many pages as it now has to list all the research being carried out at our Academy. Our scientists are working in chemistry, physics, mathematics and biology. We are doing research on farm electrification and mechanization, soil fertility and land reclamation, among many other things.

We have both the facilities and the staff for intensive research in all the major fields of science. Employed at our institutes, laboratories and experimental stations are 69 persons with doctor's degrees and more than 300 with master's. This is aside from the thousands of college and university graduates who are doing research in schools and factories.

Like scientists everywhere, we draw on the experience of scientists of other countries, and we give them the benefit of our research. We maintain contact with scientific bodies in 40 countries, and we hope to expand these contacts. The more communication between scientists of all countries, the more science will progress.

ALEXANDER VOINOV, Architect.

Minsk today is a modern city with wide avenues and new buildings. It seems difficult to believe, but in a few years this beautiful capital has risen from the charred ruins left by the war. And an important role in this gigantic task of reconstruction was played by our Byelorussian architects.

As you may recall, vast sections of the country were devastated. We never worked so hard as we did in the years immediately after the war, although there is no scarcity of work today. Just as in other parts of the country, we Byelorussians are putting up more houses and public buildings every year.

Today our architects are concentrating on new designs for apartment houses and private homes. We want to make our housing projects more convenient and attractive. We are making extensive use of standard designs and prefabricated structural sections, developing new building materials and industrializing construction methods.

Our architects study the work of Europeans and Americans very closely. This spring, for example, a student of mine at the Byelorussian Institute of Technology, presented a thesis for his degree in civil engineering. In his design for a precast, concrete panel apartment house with large floor sections, he drew on American building methods.

PROFESSOR TATYANA BIRICH, M.D.

Early in the century, thousands of Byelorussians suffered from trachoma. I remember my father talking hopefully of a time when science would find a way to restore sight even to those born blind.

When I first began to practice 28 years ago, there were only a few dozen oculists in all of Byelorussia. Today, there are eye specialists in practically every town and farm district. Every hospital has an eye division.

Special institutions for children suffering from trachoma were set up in the early Soviet years. The children lived there and attended school until they were cured. A large number of dispensaries were opened for adults. As a result, Byelorussia's children are now free of trachoma, and the disease has been eliminated among adults. My colleagues and I are now working to restore sight to the hundreds of people who became blind in childhood or during the war.

PAVEL MOLCHANOV, Actor.

I have been on the stage for thirty years now. In that time I have played enough characters to fill up the big apartment house in the center of Minsk where I live.

Of all my roles, that of Hamlet is especially dear to me. I began studying that role after the war, that frightful war which brought so much suffering to all mankind and to my republic, Byelorussia, in particular. Into my interpretation of the Prince of Denmark, I put all the hatred that had accumulated in my heart during the years of the war, hatred of evil and tyranny, of all that runs counter to normal human life.

I want my Hamlet not only to touch the hearts of my audience; I want to arouse people to an active striving for justice.

In *Hamlet* I play to audiences made up of all kinds of people, from mechanics to professors, both city and farm people. It is a great joy to me that they understand and sympathize with my Hamlet. I feel that the theater strengthens their faith in the triumph of truth over evil. To believe that is the most important thing in life.

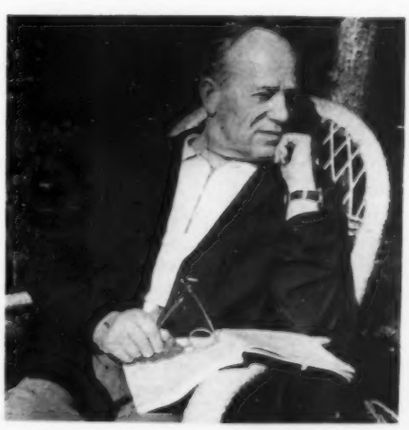
PETRUS BROVKA, Writer.

No matter where you go in Byelorussia you are certain to find books by Byelorussian authors. Less than 50 years ago, there were only a few authors who wrote in the Byelorussian language; today there are hundreds.

Besides the classic works of Yanka Kupala and Yakub Kolas, books by contemporary writers like Krapiva, Kuleshov, Lynkov, Cherny, Samuilyenok, Glebka, Shchemyakin and many others are deservedly popular in the republic. Byelorussian novels, plays and poetry have been translated into Russian, Ukrainian, Georgian and many other languages of the peoples of the USSR.

Several literary magazines are published in Minsk in the Byelorussian language.

What do we write about today? About how our people lived before the Revolution, and how they live today. We try to depict the feelings and thoughts of our men and women and their individual hopes and problems.



GRIGORI SHIRMA, Musician.

Byelorussians love singing, particularly choral singing. You will find groups of people singing everywhere—farmers, sitting on the banks of the Niemen, Pripet or Berezina, singing with such warmth in their voices that the passerby cannot help but stop to listen to them.

The Byelorussian A Cappella Choir which I head, was founded in 1940. We have given about 3,000 concerts in the past 15 years. Audiences in Moscow, Leningrad, the Caucasus, Siberia, Central Asia and the Ukraine, and of course Byelorussia, have heard us sing. Today we have more than 300 compositions in our repertory, including music by Glinka, Mozart, Borodin, Tchaikovsky, Schumann, Taneyev, Handel, Gounod and Grieg.

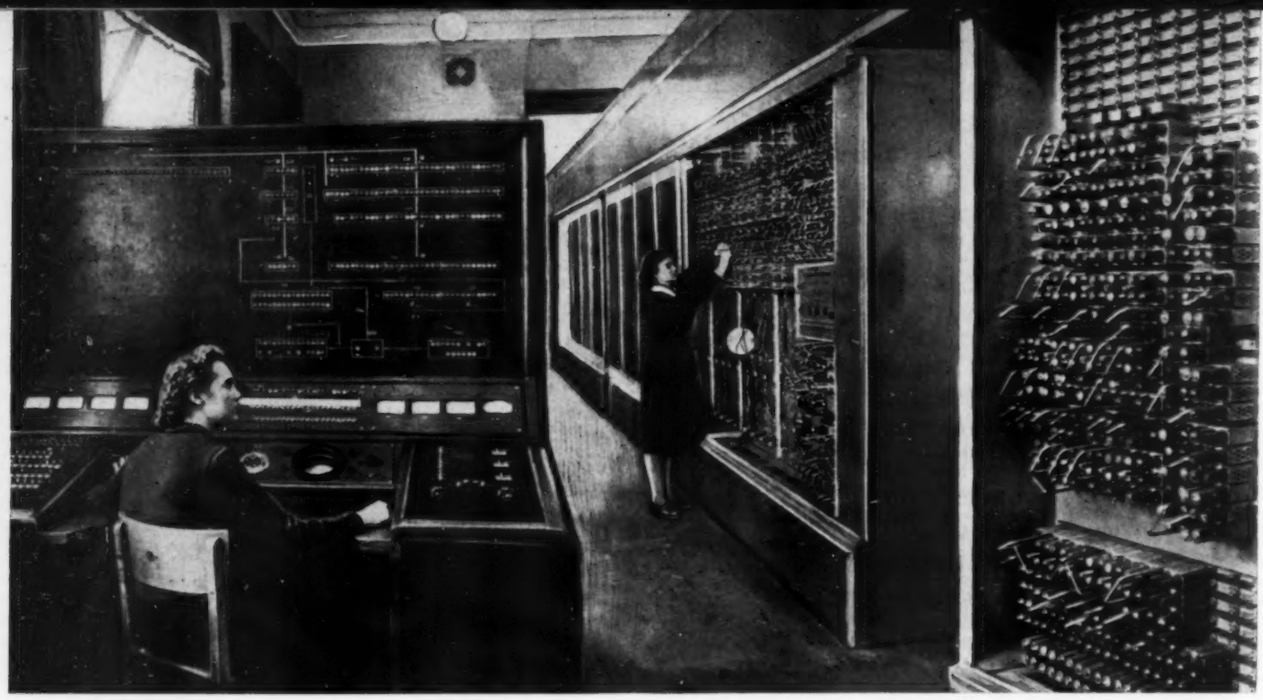
All the members of the choir began by singing in amateur choirs. We draw on these amateur choirs, which have a membership of 130,000 men and women, for our talent.

ZAIR AZGUR, Sculptor.

The Byelorussian State Picture Gallery in Minsk is scheduled to open next year. It will exhibit the work of contemporary Byelorussian painters and sculptors in addition to Russian and West European classic painting.

Most of our 150 painters and sculptors are preparing work for the opening. I myself am working on a number of pieces of sculpture with the hope that they will be accepted for exhibition. One of them I have tentatively called "Lenin with a Child." In this work I am trying to reflect one of Lenin's distinguishing traits, his love for people.

As one of the oldest sculptors in the republic, one who began his work when Byelorussian fine arts were only beginning to develop, I look on with great pleasure at the progress our talented young people are making.



THE ELECTRONIC MACHINE OF THE USSR ACADEMY OF SCIENCES CAN TRANSLATE LANGUAGES. ON NEWER MODELS BULKY TUBES ARE REPLACED WITH TINY TRANSISTORS.

THINKING MACHINES

By Victor Pekelis

The formal name for the small three-story building on Kaluzhskoye Avenue in Moscow is the Institute of Precision Mechanics and Computing Techniques. Call it the laboratory for the development of thinking machines and you have a description which may sound like science fiction but is, nevertheless, accurate enough.

The scientists who work there talk casually of a machine which verifies legal documents and checks the truth of evidence; of an electronic model of the heart which not only detects disease but predicts future ailments; of an industrial control system which selects the best process, directs it and trains itself, getting experience as it goes along. They talk of machines with "memory" and "logic."

To a layman all this sounds like dialogue in a television space opera. But these are hardheaded mathematicians, physicists, engineers and industrial designers discussing developments, present and future, in Soviet machine and instrument making.

The visitor to the section of the Institute where the electronic computing machine is installed sees nothing at all reminiscent of the mechanical robots of fiction. In tall glass cases stand what appear to be hundreds of radio sets, stripped of their covers, placed side by side and enmeshed in a dense spider web of wires.

Electronic tubes are the nerves and brain cells of this thinking machine. There are thousands of them. With the dozen tubes of a radio set we can hear a whole world. With the two dozen tubes in a television set we can see through hundreds of miles. What then will this thousand-tubed giant do in expanding our senses? It is an awe-inspiring question.

Academician Sergei Lebedev, the head of the group which designed and built this machine, tells us a few of the things it has already done.

The orbital movements of about 700 minor planets of the solar system, with allowances for the influence exerted on them by Jupiter and Saturn, were computed for the International Astronomical Calendar in a few days. Their coordinates were determined for the next ten years, their locations at the end of every 40 days being calculated exactly.

When compiling maps on the basis of geodetic surveys it is necessary to solve a system of algebraic equations with many unknowns. Problems involving 800 equations and requiring up to 250 million arithmetical operations were solved by the machine in less than 20 hours.

Without the machine, tens of thousands of people would have worked for months to do all these calculations. About a dozen buildings like the Institute would be required to provide desks for them.

A Lifetime's Work in One Hour

In one second the machine performs an average of 7,000 to 8,000 arithmetical operations or "sums." An experienced operator working eight hours with a desk calculator can do only about 2,000 "sums." Thus, in an hour the machine can do the lifetime's work of an experienced operator.

The "arithmetical device" of the machine employs electronic counting circuits, which can perform addition in three-millionths of a second, and multiplication in 192-millionths of a second. The answers are obtained in the form of recordings on magnetic tape.

The main operative "memorizing devices" in the machine are special tubes, somewhat like those used in television sets. The numbers are "stored" in the form of charges on certain points of the tube screen. This "memorizing device" can hold 1,023 numbers. The selection of a number and the recording of the result takes twelve-millionths of a second.

To increase its ability to solve problems involving many numbers, the machine is provided with an additional, less rapid "memorizing device" using a magnetic drum or magnetic tape. These record numbers in much the same way as sound is recorded on a tape recorder. The tape can

"store" more than 120,000 numbers, while the drum "stores" 5,120, but numbers can be selected much more rapidly from the drum than from the tape.

The machine works round the clock. It employs more than 5,000 tubes, each of which has a life expectancy of 10,000 hours. The technical operation of the machine is conducted by two engineers and one technician.

Translating by Machine

But the most incredible power of the thinking machine is its ability to translate languages. It would seem to be one thing to solve intricate mathematical problems on an electronic computing machine. And quite another to translate languages, particularly from English into Russian.

English and Russian come from different root languages; grammatically they have little in common. Even an experienced translator will run into many difficulties in translation. There are any number of technical words, let alone idiomatic expressions, which cannot be translated literally.

Here is one example. Try to translate the English word "foolproof" by translating "fool" and "proof" into Russian and you end up in confusion. Or try to translate "Charley horse" by the same method.

In spite of these more obvious difficulties and a host of others, this machine translates and does it well.

The President of the USSR Academy of Sciences, Alexander Nesmeyanov, after seeing the machine demonstrate, wrote that it "made the translation from English into Russian faster and more competently than any of the three translators who were working simultaneously for the sake of comparison."

The Machine at Work

One of the Institute workers, Spartak Razumovsky, is our guide. As he leads us in double time down the hall, he says, "Sorry to speed you up, but the machine works on strict schedule and we have only 15 minutes."

He inserts what looks like a big sewing machine bobbin into the machine. The bobbin releases a paper strip like a ticker tape. "The English text is recorded on this," he explains. "The perforations are words, each little group of holes is a letter. The tape tells the machines what to do with each of the letters."

Alongside the first bobbin, Razumovsky places a second. This one has a narrow brown magnetic tape, giving the method or plan for the translation. "That's all there is to it," he says. "Now we move to the control board."

An operator sits at the board. He faces a clock with a second dial which ticks off the time, and a row of red signal lights which blink on and off as the second hand moves.

Razumovsky says: "Both the text and the translation plan are now in the machine. The machine searches through its dictionary." As though beating us to the questions, he explains, "When a man translates, he uses a dictionary to give him the words he's looking for. The words are made up of varying sequences of letters. Our machine has to work with numbers. That's why we have to transpose letters into numbers. We use the Bodo code: 16 stands for the letter 'a', 06 for 'b', 13 for 'w', 09 for 'x', 23 for 'q', and so on." He writes these numbers on a blackboard:

212608, 082320162112281505, 110821262830,
212608070814280708

To us they look like numbers in a bookkeeper's ledger and nothing more, but Razumovsky reads them quickly:

"the, equations, method, therefore."

"The translation process starts with the machine searching its dictionary for the words recorded on the tape. Then mathematics takes over. The number-word in the perforated tape is subtracted from each number-word in the dictionary. When the remainder is zero, that is the word we're looking for."

The machine then replaces the found words with information, again expressed in numbers which stand for the grammatical functions of the English words, the respective Russian words and the grammatical functions of the Russian words.

Only then does the machine begin to analyze the English sentence and to synthetize the Russian. This is done by the translation plan which is divided into such sections as: verbs, nouns, adjectives, numerals, syntax, change of word orders.

Depending upon the transcription of the English words, their place in the sentence and grammatical function, the machine determines the grammatical form of the corresponding Russian words and their place in the sentence.

Then the final translation is obtained from a tape which gives the words printed as regular letters.

Translation From All Languages

Academician Lebedev told us about the difficulties of machine translation. The first translation from Russian into English was made in 1954 in the New York office of the International Business Machines Corp. The test was made with the IBM-701 electronic computing machine which operated with a dictionary of 250 Russian words recorded in Latin letters.

One of the major difficulties encountered was the large vocabulary of modern languages. In ordinary translation, using the entire range of English words, the translator will usually employ only about 1,000 general words and perhaps 1,000 technical terms. But even with such a relatively small number of words, machine translation presents complex problems.

That is why Soviet scientists, after studying the experience of their American and British colleagues, decided to discard the excessive tie-up to the dictionary. As a result of experiments they devised a system of analyzing sentences which makes it possible to determine the meaning of the words in the sentence and to define their grammatical functions. This system proves to be practically independent of the dictionary and allows translation of scientific and technical tests. Work is now under way on translation of a scientific text from French into Russian.

"The same principles," Academician Lebedev says, "can be applied to translating from Korean into Russian, from Russian into Japanese, from German into Hindi, and others. The time will come," he adds, "when we will be able to translate from all languages, and it is not too far in the offing."

New Areas for Research

As to computing machines in general, their production in the Soviet Union has increased steadily. In 1955 there were 24 per cent more computing machines produced than in 1954. The Sixth Five-Year Plan (1955-1960) calls for a four to five fold increase and for the building of some 32 new instrument making plants.

The new Ural machine has already been produced in considerable numbers. It is designed to solve engineering research problems and is also widely used in university research. Other apparatus, including a compact M-2 machine working on semi-conductors and control machines, has been designed. It has made possible a totally new approach to the solution of important problems in physics, mechanics, astronomy, chemistry and other branches of knowledge.

Soviet designers have set themselves the large-sized task of producing machines with a "memory" of tens of thousands of figures and a speed of a million operations per second. The potentialities of such machines are truly boundless. Working faster than human thought, they will help to release the human mind from mechanical functions and will open vast new areas for research and exploration.

SERGEI LEBEDEV IS HEAD OF THE GROUP WHICH BUILT THIS THINKING MACHINE.

HOW SOCCER FANS ARE

By Giya Badridze

There are naive persons who believe that adventure is to be found only in remote places, at the bottom of the sea or in cosmic space. How very mistaken they are! Adventure, I've discovered, is where you least expect it.

There was that Sunday; it turned out to be a solid chain of adventure. My wife decided to give me a surprise; she went out and had her hair cut that morning. And cut is just the word for it (also waved in the latest hairdo). When she returned we discovered that the wave was all right except that it suited neither her age nor, still worse, her sex. So I set out for the stadium alone.

The sun shone merrily, birds twittered in the trees. Men, women and children hurried along the avenues little knowing that the sun shone and the birds twittered not for them, but for the fans.

Fingering the two tickets in my pocket, I joined the crowd and moved ahead toward the unknown. "Chin up," I told myself. "You won't die if you get bitten by the soccer bug, too."

At that moment a stranger blocked my path. His gaze pierced me as he whispered ominously, "Got an extra ticket?"

Who could have told him? That hairdresser of my wife's?

Hypnotized, I pulled out the extra ticket. It was nearly my undoing. About two dozen fans pounced on me crying, "A ticket, a ticket!" Finally I squirmed away, my suit crumpled, and I had only one ticket and the money the stranger had shoved in my pocket before he vanished.

When I had finally escaped, I rejoined the stadium-bound throng and made my way inside without further mishap.

The stadium seemed crammed full but still the stream of fans flowed in. The river broke into little creeks which filtered into all the cracks and filled the edifice to the very top.

Just as in the bleachers in an American ball park, the experienced fan possesses that amazing quality of contracting and expanding. In the tiniest space possible, it seems, he manages not only to sit, but to spread a newspaper, light a cigarette without scorching the neck of the man in front, and eat ice cream without bringing loud objections from his neighbors to the right and left. At the same time he can keep up a simultaneous chatter with three other fans about the outcome of six other games, past, present and future.

When I finally got to my seat after being zeroed in by an usher, it was occupied, of course. Not having any of the customary properties of the fan, I just stood there helplessly and evoked the indignation of the whole row.

Then a whistle blew. Broad-shouldered young men in jerseys of different colors ran onto the field. I was still standing. A chorus of yells came at me from behind. I was so startled that I jumped. Then my legs bent and before I knew it I had slithered and squeezed myself into a sitting position. There was a burst of cheers. Flattered, I turned around and smiled. But they were cheering the boys on the field. I am not a vain man, so I did not feel hurt.

As to the people about me, everything but the playing field below had ceased to exist for them. The entire stadium was holding its collective breath as all eyes followed the movements of the leather ball. I had never dreamt that a ball could do so many tricks. In the windows of the sports goods shops it looks like the tamest of toys, but just let it loose on a field!

By running around like mad the fellows in the yellow jerseys managed to move the ball near the goal at the far end of the field. They rained kicks upon it, but the stubborn thing refused to go into the net. This was getting interesting . . . OUCH! Somebody pinched me! The ball bounced off a crossbar and hopped gaily into the stands. Rubbing my pinched arm, I turned sharply to the man on my right.

"Don't like it, eh?" he said, wiping his sweating cheeks.

"Of course! That's an outrageous thing to do!"

"You're right. To muff a chance like that. Take it from me, they'll lose for sure. Call them players? Why, they're—they're just barbers!!" With those words he shifted his attention to the game.

MADE

"Barbers? Hairdressers?" I said to myself. A shiver went through me. I was certain that at that instant I had the bug. I drummed on my neighbor's knee with my fist; the ball was close to the goal again. "Go to it, boys!"

A girl on my left was squeezing her ice cream tighter and tighter. She was rooting for the hairdressing fellows. Well, that was all right for a woman, no doubt.

The attack continued at a fast clip. Those young fellows knew how to keep the ball moving. It was an art. (Of course, if I'd gone in for that sort of thing in my salad days, . . . and if it were not for my paunch . . .) Another tight squeeze and the ice cream began oozing out between the girl's fingers like tooth paste. The man on my right was whistling loudly, and at the same time pounding the back of the man in front.

A goal! A flock of pigeons flew noisily into the air; a bunch of boys had brought them in under their shirts. Others who had

no pigeons tossed their hats. Shouts, whistles and sad moans hung over the stadium. Can it be that our team won't score now? Could it be that we'll lose?

Ever since that fatal Sunday these questions have tormented me.

I'm not the least bit sorry, either.

ACADEMICIAN ALEXANDER TOPCHIEV

SCIENCE HAS NO FRONTIERS

The History of Scientific Exchange between the United States and the Soviet Union

By Alexander Topchiev, Secretary of the USSR Academy of Sciences

History has a long memory. It records the fact that at crucial periods, Russia and the United States lent each other material and moral assistance. This was true in the American Revolution, the American Civil War, and particularly, during the grim years of the Second World War, when our two countries fought shoulder-to-shoulder against their common enemy.

The history of science and culture tells the same story. The present expanding contacts between the United States and the Soviet Union have been venerable roots that reach back two centuries.

Eighteenth century scientists and scientific societies maintained regular correspondence, in spite of the vast distance that separated our two countries and primitive methods of communication. Benjamin Franklin helped foster this exchange of scientific information.

TRADITIONAL TIES

As representative of the young American republic to the courts of Britain and France, Franklin was acquainted with many of the eminent Russian scientists and men of affairs. For his many scientific contributions, he was elected to membership in the St. Petersburg Academy of Sciences, the first American member of that learned body.

An interesting series of letters, unfortunately little known except to scholars, was exchanged between Franklin and Princess Katherine Dashkova, President of the Russian Academy. In her memoirs she writes: "Franklin, inspired by his feelings of friendship and esteem for me, nominated me to membership in the Philadelphia Philosophical Society, to which I was elected unanimously. Its diploma was conferred on me and I received its publications. . . . I was flattered by Franklin's

Continued on page 48

Continued from page 47

letter, since I considered him an outstanding man. He combined profound knowledge with great simplicity and modesty. . . ."

The publication of his complete works and letters, a project recently begun in the United States, will add much to our knowledge of Franklin's connection with Russian public figures of his time. The USSR Academy of Sciences is assisting in this project. At the request of American scientists, we are sending all of Franklin's autographs and other material relating to his life and work preserved in our archives. The Soviet Academy now is publishing a number of Franklin's works to commemorate the 250th anniversary of his birth.

Franklin was not the only American scholar invited to membership in the St. Petersburg Academy of Sciences during the eighteenth century. A fellow Philadelphian, J. Churchman, was also elected honorary member. During the nineteenth century, Simon Newcomb, the astronomer, was elected to membership.

Newcomb wrote that he deemed it a great honor to have "the title conferred upon me by so famous an institution." His voluminous correspondence with Russian scientists, preserved in the Academy archives, sheds light on nineteenth century exchange of astronomical findings.

Scientific contacts between our two countries expanded considerably during the twentieth century, particularly during the twenties and thirties. Representatives of nearly all branches of American science were elected to membership in the USSR Academy of Sciences, among them Albert A. Michelson and Robert A. Millikan. Thomas A. Edison was an honorary member of the Academy.

Development of international contacts in the field of science has always been promoted by personal meetings between scientists at various congresses, conferences and anniversary celebrations.

In 1925, scientists came to the Soviet Union from all parts of the world, including the United States, to celebrate the 200th anniversary of the founding of the Russian Academy.

American scientists attended the 220th anniversary of the Academy in 1945. Many American universities and learned societies sent warm congratulatory messages. Typical was the cable from the physicist Ernest O. Lawrence of the University of California, who expressed the hope, shared, he said, by many American scientists, that within the near future cordial relations between the two countries would be developed and that scientists would learn to regard each other with growing esteem and friendship.

CONTACTS NEED REVIVING

Unfortunately, during the period after the war mutual prejudice and lack of confidence hampered traditional scientific contact. Even during this period we hoped that contact would be re-established and extended. When, late last year, Alexander Nesmeyanov, President of the USSR Academy of Sciences, addressed a message to Detlev Bronk, President of the American National Academy of Sciences, urging that Soviet-American scientific contacts be extended, it expressed the desires of all Soviet scientists.

There has been a noticeable increase in exchange visits between American and Soviet scientists, as well as in exchange of scientific information. At the invitation of American physicists, Professor Vladimir Veksler headed a recent group of visiting Soviet physicists. American atomic power experts, in their turn, attended the USSR Conference on Physics of High Energy Particles.

The American physicists were given every opportunity to familiarize themselves with the work of Soviet scholars in the field, while the Soviet scientists listened with great interest to the papers read by the Americans. The physicist Robert R. Wilson of Cornell University, in a statement he read on behalf of the American delegation, indicated that the exchange visit would be a "considerable contribution toward the restoration of the international community of science, in which we all believe."

NUMEROUS AREAS OF COOPERATION

These are not the only areas in which contact has been developed. During the past few months, some 40 Soviet scientists have been guests at American congresses on acoustics, ethnography, catalysis and clinical medicine, and at conferences on the biology of development and on problems of combustion. Connections are also being established between individual scholars for exchange of research and mutual consultation.

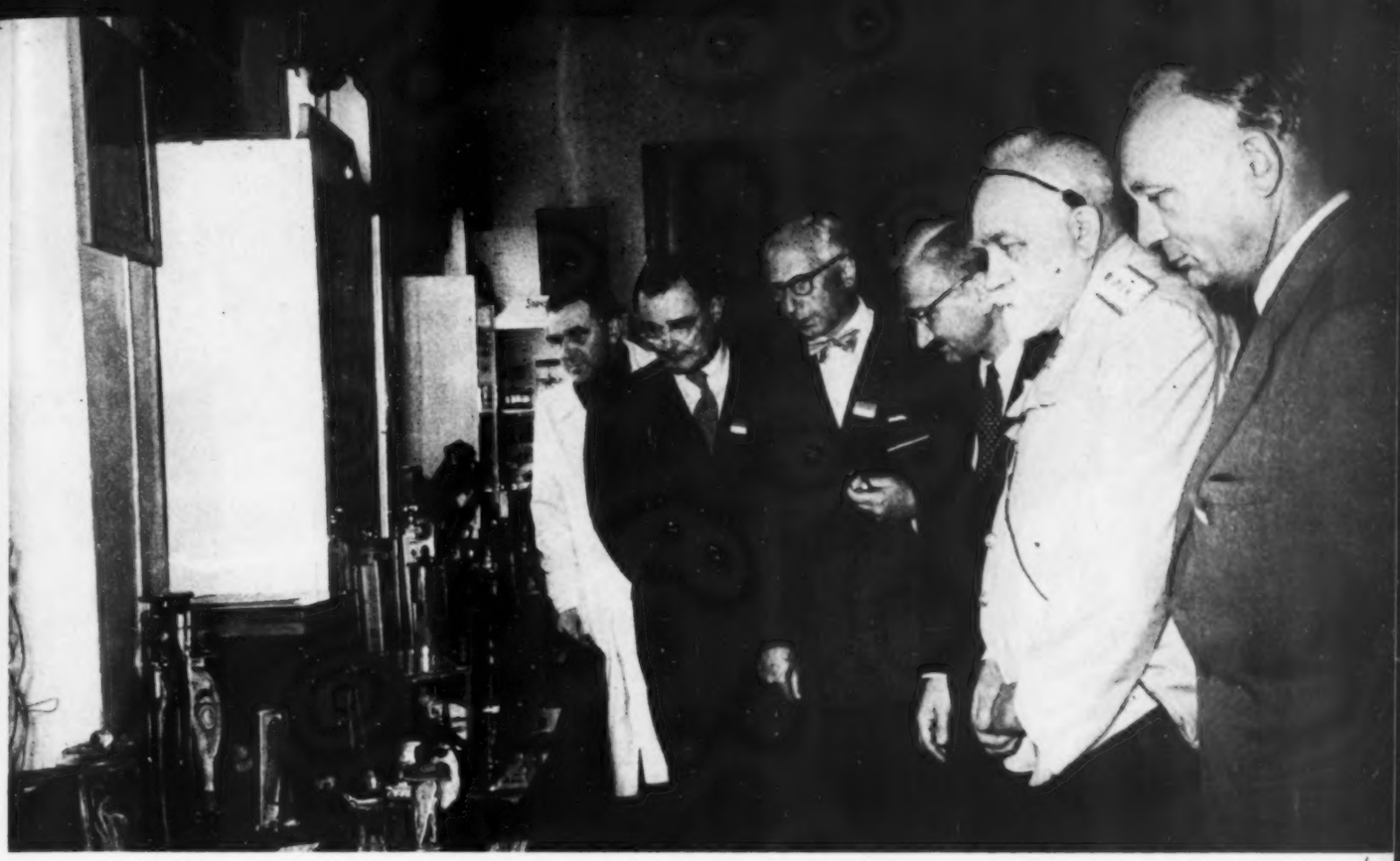
American scientific institutions have been asking the USSR Academy of Sciences more and more frequently for information on current research. One of the most recent of these is a request for certain practical data on the work of the first atomic power station in the Soviet Union, which is also the first one in the world.

Among the many scientific establishments in the Soviet Union which attract the interest of foreign scholars is the Sukhumi Medical-Biological Station. The ape nursery at the station has been experimenting with artificial reproduction of malignant tumors in apes. The station very recently received a letter from Professor M. B. Shemkin of Washington asking that data on the Sukhumi research on malignant neoplasms be sent to the National Cancer Institute of America.

All such requests for scientific data are, of course, complied with.

In book exchange, too, there is greatly increasing activity. The library of the USSR Academy of Sciences alone exchanges books with 1,636 scientific institutes in 80 foreign countries, and the library of

ONE OF THE MANY EVENTS COMMEMORATING THE 250TH ANNIVERSARY OF BENJAMIN FRANKLIN'S BIRTH WAS AN EXHIBITION OF HIS BOOKS PUBLISHED IN THE USSR.



ACADEMICIAN YEVGENI PAVLOVSKY (SECOND FROM THE RIGHT) SHOWS HIS LABORATORY TO PROFESSOR ALBERT SABIN OF CINCINNATI AND OTHER FOREIGN SCIENTISTS.

Moscow University with 120 institutes in 25 countries. The USSR Academy of Sciences makes it a rule to send copies of all its publications to the Library of Congress in Washington.

SCIENCE IS INTERNATIONAL

Among recent Soviet-American contacts is the visit paid by Dr. Albert Sabin of Cincinnati, who has been working on a polio vaccine different from that developed by Dr. Jonas Salk. When Dr. Sabin came to the USSR he brought with him cultures of his new vaccine. Some months before a group of Soviet scientists had visited Dr. Sabin's laboratory in Cincinnati.

Dr. Sabin had this to say in an interview with the newspaper *Sovietskaya Rossia:*

"The USSR Congress of Hygienists, Epidemiologists, Microbiologists and Specialists in Infectious Diseases, which I was privileged to attend by the kind invitation of the USSR Ministry of Public Health, convinced me how necessary these contacts are. I am a scientist and at this Congress, which was of immense international importance, I learned how far science had advanced in the USSR, how much that is useful, new, interesting and, chiefly, boldly constructive, is being created in your country for the good of man. Although we work in different countries, far from each other, the efforts of scientists in Russia and America are directed toward a common aim: to rid mankind of the diseases which are sometimes stronger than our remedies against them."

In giving his thanks for the warm and friendly reception accorded him in the Soviet Union, Dr. Sabin expressed the hope that the fruitful cooperation of scientists would grow with the general improvement in the relations between the two countries. We fully share Dr. Sabin's hope.

We have already developed strong ties with the scientists of many Western countries, and we are happy that our points of contact with American scientists have recently begun to increase. Our collaboration in the peaceful uses of atomic energy, in exploring the Antarctic regions, in fighting disease, and in numerous other ways will help to avoid duplication in our work and will lead to confidence and friendship between us. But our two countries will not be the only ones to benefit from our cooperation. The gains will most assuredly accrue to all of mankind.

Each new discovery will immediately be put at the service of all nations so that each country's advances in science will not be viewed with suspicion and fear but will be welcomed by all nations.

Modern science would never have reached the heights to which it has risen had it not been constantly enriched by the discoveries of scientists of various countries. Every nation has made its contribution to the treasure house of world science which knows no frontiers and belongs to all mankind.

DR. SABIN (SECOND FROM RIGHT) JOINS HIS HOSTS IN DRINKING A TOAST TO SCIENCE.

EVEN BEFORE THE GAME BEGINS THE BOYS ARE KEYED UP. SOCCER PLAYERS, BETWEEN THE AGES OF 12 AND 16, FLOCK TO THE STADIUM, EAGERLY ANTICIPATING THE CONTEST.

COURTYARD FULL OF SOCCER BALLS

By Elena Doroshinskaya

It used to be a daily hazard. You would come home from work carrying a bottle of milk and a dozen eggs. You would wade through a courtyard full of youngsters yelling their heads off, and dodge what looked like a dozen soccer balls coming from every direction, all headed straight for that future omelet you were carrying. When you finally got through the courtyard and staggered into your apartment, so much noise came in through the windows that you could easily work up the illusion that you were sitting in the front row at the stadium during a hot and heavy international soccer match.

Shouts and whistles came from all sides. "Come on, Sasha, come on, move your feet." "Is that the way to kick the ball?" "Throw him out. He's crazy." And at regular intervals, the janitor yelling or pleading, generally both, "How many times do I have to tell you that this is no place to play soccer? Do you want to break *all* the windows? Get out of here before I . . .!"

The people who lived around our courtyard—it was the center of a housing project built by a big Leningrad factory for its workers—complained, or talked longingly of the day when the boys would be grown, or yelled down, "Shut up and give us a little peace and quiet," each according to his individual temperament. One of the more desperate adults took direct action with a paper bag filled with water. But even this did not dampen the enthusiasm or quiet the racket.

THE TEAMS HAVE A LARGE FOLLOWING OF BOTH YOUNG AND OLD FANS.

IT LOOKS AS THOUGH THE FUR WILL SOON START TO FLY IN THIS DISAGREEMENT.

Today, however, a blessed peace has descended on our courtyard.

It started when Genya Mikhailovsky, son of the plumber who lives in our house, came into the courtyard waving a poster. It invited all soccer players between the ages of 12 and 16 to come to the stadium.

Eager and early on the appointed day the neighborhood boys flocked to the factory stadium, a block or two from the project. The smaller ones, obviously under 12, tried to stretch their necks and walk very erect.

That day may not go down in the annals of history, but for the boys in the project, not to speak of the suffering adults, it was a momentous occasion. The coach met the boys at the stadium and a soccer team was formed right there and then. It was named *Junior—2;* there was a *Junior—1* in a nearby neighborhood.

Everybody began training. Instead of lounging in bed in the morning, the boys jumped out to do setting-up exercises and take a cold rubdown; "the soccer player has to be strong and physically tough." They went to bed on time; "regular living habits mark the good athlete." They even used their fists less; "the soccer player has to be level-headed and even-tempered."

Twice a week *Junior—2* got together at one of the stadium's three soccer fields for a training session. The boys sported their new outfits, black shorts, red jerseys, cleated shoes, all supplied by the factory trade union committee.

Reports from time to time in the children's newspapers and over the radio spurred the boys on to greater effort. There was much talk about the forthcoming Little League tournament for courtyard teams, first on a district and then on a city scale. A strong team named *Wings of Soviets* had sprung up not too far away. Other new teams had belligerent names like *Lightning, Storm, Arrow, Hurricane.* All told there were about 150 of them in Leningrad.

The games were arranged in style. A large red and yellow bus, sent by the factory management, drew up in front of our project before each game. The team members took the front seats, while their younger fans piled into the others.

Junior—2 won the first game, the second, the third, the fourth. *Junior—1* and *Wings of Soviets* fell out of the running in their first game. Finally, *Junior—2* won the championship of our District.

Events like the beautiful save by goalie Misha Bogomolov, when he jumped so high he bumped into the crossbar, and the goal scored against his own team by Vova Pisligin, were topics of conversation in the courtyard for weeks.

The games were often dramatic. There was the one against *Hurricane,* the Nevsky District champion, for instance. In the last minute of play, it looked as though tears would start rolling down the cheeks of the youngest members of *Junior—2.* In spite of *Junior—2's* brilliant strategy and its all-out effort from beginning to end, the final score stood 2-1 in favor of *Hurricane.* But fortune did not desert *Junior—2.* The umpires got into a huddle and *Junior—2* was soon grinning from ear to ear and shouting at *Hurricane:*

"You're just a bunch of crooks!" "Huh, call yourself sportsmen!" "Being crooked doesn't pay off."

Hurricane, it turned out, had bolstered its line with a couple of 17-year-olds. This cost *Hurricane* the game.

Then came the great day of the final. This time the bus ride was a long one, across Leningrad to Kirov Stadium, the city's largest, seating about 100,000.

The spectators, half of whom were the same age as the players, whistled, shouted and jumped up and down in their seats. The score was tied, 1-1. A replay two days later ended in 0-0. Another replay followed, and the same score. In the fourth game, *Junior—2* came through by a 1-0 score. The band played, the winners awkwardly held on to bunches of flowers, and Zhenya Kachanov, the captain, was presented with the Little League Cup by the Leningrad Physical Culture and Sports Committee. A very big day.

. . . It is beautifully quiet and peaceful. People read in the courtyard garden, others play chess; socks and mittens for grandchildren slowly take shape under the knitting needles of grandmothers. And the children, happily, are at the stadium, watching *Junior—2* train for the new season.

THERE IS AN EXCITING MOMENT IN THE PENALTY AREA; WILL IT BE A SCORE?

A SOCCER PLAYER HAS TO KNOW HOW TO USE HIS HEAD.

Continued from page 15

TV for Children

PUSS IN BOOTS HAS NEW ADVENTURES

We shoot many of our programs on motion picture film. This applies especially to Young Pioneer Newsreel, a program that has been running for five years. In Young Pioneer Newsreel we tell about interesting happenings in our country and abroad, particularly events in which children are participants. The newsreel takes its viewers to the excavations at Pompeii, to places in Denmark associated with the name of Hans Christian Andersen, to the birthplace of Mark Twain. In presenting subjects of this kind, you cannot, of course, get along without the motion picture camera.

At first, the narrator's part of the script was read by people standing outside the range of the TV camera. But we soon realized that

a good deal of the effect was being lost that way. We began to look around for a better method. Soon after, we decided to film a story about the Durov Corner in Moscow, where fascinating work in the training of animals is being carried on by the followers of the famous Russian animal trainer, Durov. Searching for a suitable reporter-narrator, we hit on Puss in Boots.

Puss in Boots, elegantly dressed, with a motion picture camera in his paws, was the master of ceremonies from beginning to end. He stopped every now and then to take a pot shot at a mouse poking its head out of a hole. Our young viewers found him very funny. He told them how he had filmed the various animals, all good friends of his, and then brought them to the TV screen: the raccoon who washes clothes; the elephant who tears a leaf off the calendar with his trunk; the fox who squeezes through a maze of metal rods; the noisy orchestra of pigs, and the young goats who dance to the orchestra's accompaniment.

In another program, Puss in Boots took his audience along on a sightseeing tour of Moscow. Our young viewers are looking forward impatiently to his new programs.

TV AND CHILDREN

The many problems involved in TV for children are, of course, of deep concern to us, as they are for TV people in other countries.

There is the recurring question about programs unsuitable for children. When we think an evening adult program is entirely unsuitable for children, we make an announcement to that effect, addressed to parents, at the beginning of the program. Many of the parents write to tell us that this does not help the situation much.

Forbidding children from viewing a program makes them more eager than ever to see it. The evening adult program is scheduled to follow the children's program. The children naturally linger around the TV set, find all sorts of reasons for staying up, and, in general, make adult life difficult. Usually, though, we begin the evening adult program with a newsreel, a sports commentary or a popular science feature, all suitable for children. We are thinking now of shifting the children's program to an earlier hour.

The relationship between TV and the schools is another problem. We feel that we should supplement school lessons, not substitute for them. We are doing quite a bit in this direction. Our most tangible help to the schools is through our geography programs, which give children an opportunity to see with their own eyes the cities, regions, countries and natural phenomena which they study in the classroom. Other programs help the children in their study of literature, biology and physics.

Physics and chemistry programs for children are as yet few and far between, however, and they are often dull. They must be made especially interesting and dramatic to put across concepts that are not always easy for children to grasp during school lessons. We try, also, to broaden the children's knowledge of the subject by going beyond the limits of the school program.

When telecasting for young viewers we always have to keep in mind the question of age groups. There is a far greater difference between the mental perception of a five-year-old child and a high school graduate of seventeen, than between that of a high school graduate and an old man. Accordingly, we address our programs to three age groups: pre-schoolers and children in the elementary grades, children in the intermediate grades, and boys and girls of the senior group.

But the question is where do the borders between these groups lie? How shall one group be separated from another? While the process takes place naturally with young audiences, we have to give special thought to it in each show. Not long ago we slipped up. During a program for tots about mechanical toys, the toymaker launched into a technical description of the different kinds of springs and gears he was using that was far beyond the grasp of his audience.

Then there is the problem of finding actors for children's roles. Theaters often use young

actresses for these parts. We can't do this because a TV camera close-up would give them away instantly. The logical way out would be to cast children in children's roles, the way film producers do, but in our case limited producing time and difficulties in working with children in unrehearsed studio programs complicate the matter. This is a considerable brake on the development of children's plays and other productions.

These problems are challenges to our TV people. They will be solved sooner or later, and replaced by new and different ones. As our children's program grows, our writers, actors, directors and technicians grow with it in experience and understanding.


HIGH DIVE

TRANSCARPATHIAN PAINTERS

By Anatoli Chlenov

The southwestern part of the Ukraine, which runs into the Carpathian mountains, is a picturesque jumble of many types of country. High mountain peaks tower 7,000 feet above sea level, and the gorges below are filled with ancient firs. There are pleasant green valleys on the southern slopes with thick forests of poplar and beech, and then, lower down, the rich black earth plains.

Centuries ago the natives of this region, known as Transcarpathia, became subjects of Hungarian kings and were forced to leave their fertile valleys and make their livelihood in the mountains. They settled in the forests and on the banks of swift rivers, and exchanged their plows for the lumberman's ax, the raftsman's pole and hunter's rifle.

Through the years of foreign rule, the Ukrainian highlanders kept their culture alive. Many picturesque patriarchal customs and an ancient folklore have been retained. The national costume, colorful and rich with exquisite embroidery, is an example of the mountaineer's fine taste in the decorative arts.

It was in the twenties of this century, in Uzhgorod, center of Transcarpathia, that an art school was founded by two painters, Adalbert Erdeli and Joseph Bokshai. Their paintings reflected the native landscapes and way of life, which had never before been placed on canvas. After Transcarpathia's reunion with the Ukraine ten years ago there was a marked and rapid development in general culture, including art. Since then it has been possible for artists to employ all the national inheritance in their work.

Bokshai, an extremely versatile and prolific master, is undoubtedly the leading representative of the Transcarpathian school. Many of his landscapes were made at a single sitting, in two or three hours. They are not sketches but real paintings, for Bokshai possesses a remarkably sure hand and eye. He has also done fine portraits and still-lifes, executed with excellent taste and a skillful treatment of texture, frescoes and stained glass. His *Holy Night,* painted in the twenties, is superb. His use of the *gutsuls*, the Transcarpathian mountaineers, as models for his Madonna and shepherds lends the painting great sincerity. Bokshai has conveyed with sensitivity the patriarchal features of the old *gutsul* way of life.

Genre painting has come to hold an important place in Bokshai's work in recent years. He paints the daily life of the mountaineers in a romantic manner. The best known of his genre canvases is *Raftsmen*, executed in a semi-decorative style. The national costumes of the raftsmen and of the girls waving to them from the bank may seem a little too colorful, but the autumn woods are a splendid contrast for the girls' red dresses, and the sensation of a free, happy life is conveyed faithfully.

Another painter of genre scenes is Gavriil Gluke. One of his best canvases is *Lumbermen.* It shows a glade in the mountains strewn with felled trees and men dressed in the typically Transcarpathian lumberman's costumes preparing to move the timber. *Continued on page 56*

FARM GIRLS BY ADALBERT ERDELI.

HUST CASTLE BY JOSEPH BOKSHAI.

AFTER THE RAIN BY ANTON KASHAI.

LANDSCAPE BY JOSEPH BOKSHAI.

LUMBERMEN BY GAVRIIL GLUKH

Continued from page 54

Erdeli, who died last autumn, dealt chiefly in portraits and still-lifes. He was outstanding among his fellow painters for his vivid palette. Erdeli's *Engaged Couple*, painted in 1954, is among his finest works. The rich tones he uses here go beautifully with the characters of the mischievous bride and groom. It is marvelous how well the artist has delineated his characters, how alive they seem to be.

The Transcarpathian exhibition recently held in Moscow, summing up what its artists have accomplished in the last ten years, has enabled art critics to make a more detailed study of this school. The exhibition was shown also at the Uzhgorod picture gallery, Kiev and a number of other Ukrainian cities, and everywhere it was a great success.

It is obvious that the exhibition has some shortcomings. There are very few good portraits and no historical canvases at all, although the history of the Transcarpathian region is filled with dramatic events and abounds in romantic legends.

It is in the landscapes, however, that the critic is able to find qualities of poetry rarely found in painting. Transcarpathian artists are in love with the local scenery and the leitmotif of almost every work seems to be: "How beautiful is my native land."

RAFTSMEN BY JOSEPH BOKSHAI

Meet Our Athletes

MIKHAIL KRIVONOSOV — WORLD CHAMPION

By Valentina Andreyeva

Flashback: At the Helsinki Olympics in August, 1952, some curious spectators may remember the following incident in the track and field events.

Young Mikhail Krivonosov entered the circle for the hammer throw and took his stance. His awkward movements foretold a mediocre showing. He put on his glove and gripped the steel handle of the hammer, made three turns and let go. But he footfaulted, stepping outside the circle. His second and third tries were equally as bad.

So, if any of the spectators remember the Soviet performer, it was only as another flop. It was his first performance at an international meet. "You can't imagine," he says, "how I envied the coolness and skill of world champion Sverre Strandli, the Norwegian, and Joseph Csermak, the Hungarian, who won the Olympic medal."

In the future this young athlete would himself enjoy the taste of victory. But, of course, he didn't know it at the time.

* * *

Krivonosov, who was 27 on May 1 of this year, was born in the little Byelorussian town of Krichev. As a boy, he was fond of soccer, volleyball, and most of all, swimming.

His uncle, Yefim Chausov, a physical training instructor who was rather well known at the time as a Byelorussian wrestler, predicted a glorious future for his nephew on the mat. "Just look at the shape of his ears," the old man crowed.

Ears or no, Mikhail did become a wrestler and at the same time went in for swimming, soccer, volleyball and skiing. But during his high school years he had no favorite sport.

At 18 Mikhail was just over six feet and tipped the scales at 189 pounds. He entered Minsk Teachers Training College, where his performances on the mat, in the shot put and swimming had his coaches engaging in arguments. The upshot of these altercations was that the young athlete quit wrestling and became a weight hurler. That was in 1951.

At first he went in for the shot put and discus. His technique improved slowly. Then he tried the hammer. He threw it 105 feet. At that time Sverre Strandli, holder of the world record, had passed the 197-foot mark. "That makes you holder of half a world record," his friends remarked laughingly.

But as the months passed, the hammer landed farther and farther away.

Among the corrective measures Krivonosov took after his defeat at Helsinki was the study of the laws of mechanics relating to centrifugal force and the throwing of the hammer. His coordination and the rhythm of his turns gradually improved. Now he was reaching 173, 177 and then 180 feet.

Success came in the autumn of 1952. In September he set his first USSR record. By the end of autumn he had reached 198 feet 6½ inches, only 2 feet 6 inches under Strandli's world mark.

In the 1954 European track and field championships at Berne, the largest international meet between the Olympics at Helsinki and the events in Melbourne, Krivonosov chalked up a new world record of 207 feet 10⅔ inches. Strandli? He was so excited by Krivonosov's performance he failed to reach the 197-foot mark. The record had an effect on Krivonosov, too. His friends know him as a big eater, but on that day he was so happy, he lost his appetite.

The year 1956 has been an unusual one for Krivonosov. In the first big spring meet of Soviet athletes, he set a new world record of 216 feet ½ inch. But his glory was short-lived, for on July 4 Cliff Blair, a young American, improved this mark by 4 inches to bring the world record to 216 feet 4½ inches.

It seemed that fortune no longer smiled on Krivonosov. Those who took his dethroning most to heart were his pupils in the Minsk high school where he teaches history and geography.

"The battle has only started! And it'll be a close one," was Krivonosov's jocular remark when he learned of Blair's record.

And sure enough, on July 8, during the Byelorussian Sports Festival, with a high wind blowing amid a steady drizzle, Krivonosov won his way into the finals. His first attempt was 205 feet. On the second the hammer flew past the little flag marking the USSR record and landed 217 feet 9 inches away, 1 foot 4½ inches better than Blair's record.

"That's not the limit by any means," the new champion said. "I am confident that somebody will reach 219 or 223 feet this year."

Although the Soviet star now weighs 220 pounds (his height is 6 feet, 2 inches), he is agile and light on his feet. He runs short distances, jumps, trains with volleyball players twice weekly and includes a swim once a week as part of his training routine. He also enjoys winter sports.

Krivonosov's coaches are unanimous in the belief that he has not yet realized his full potential. The future will tell.

FLAGS OF VARIOUS NATIONS FLUTTER OVER ODESSA'S HARBOR. SHIPS FROM 60 COUNTRIES OF BOTH HEMISPHERES ARE MOORED AT THE WHARVES.

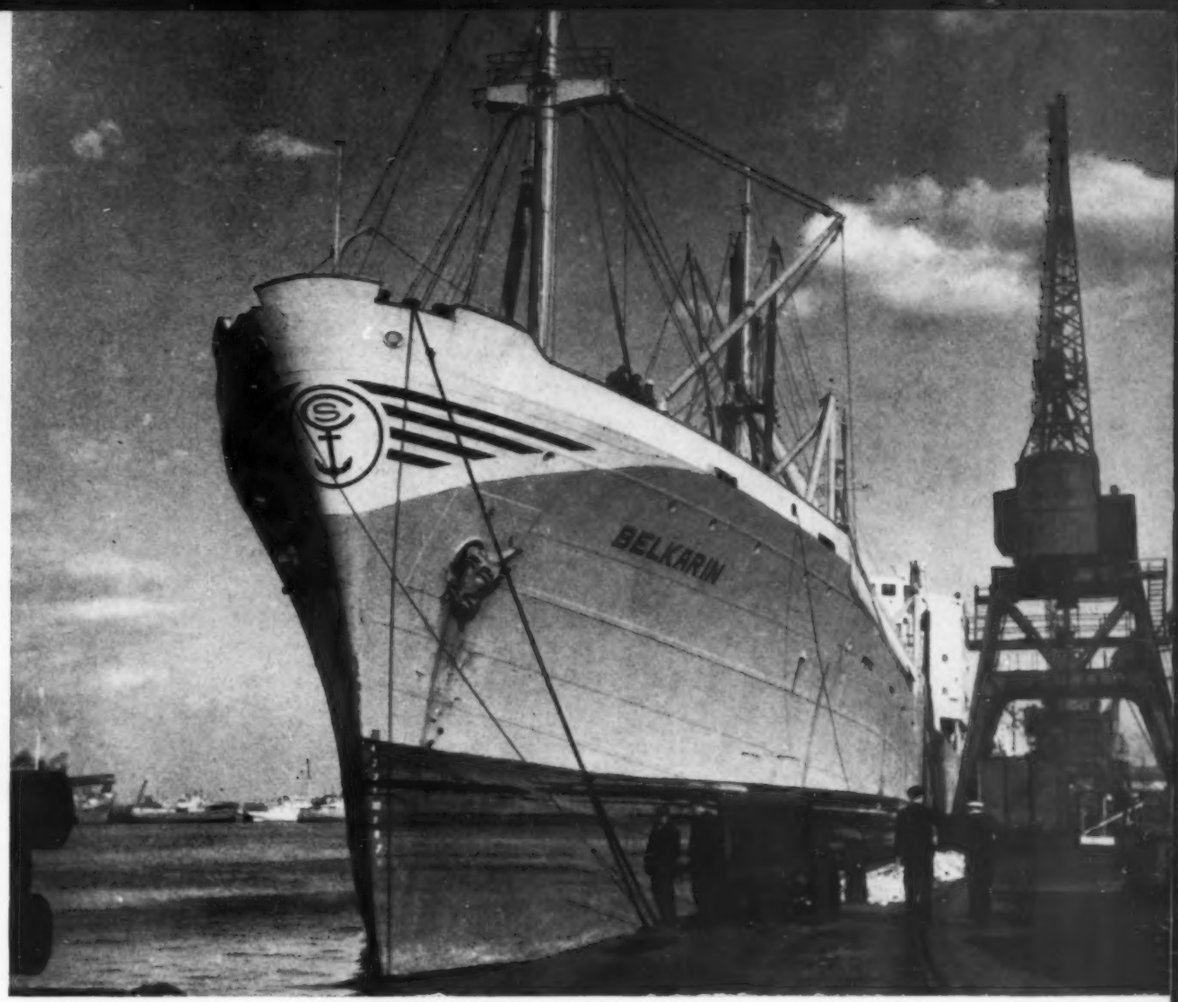
ODESSA, A SAILORS' TOWN

A walk around the harbor of Odessa, colorful city on the Black Sea coast, is a trip around the world. Moored at the wharves are ships that fly the flags of 60 countries in both hemispheres. Pungent aromas scent the air, spices from Vietnam, oranges from Israel. Ships bring machinery from France, textiles from Italy, rice from Burma, sugar from Costa Rica. An endless stream of foods, machines, consumer goods flows through this southern seaway into the Soviet Union.

Odessa is a sailors' town, and much of its life revolves around the port. Sailors from every corner of the world walk along the broad avenues, guests of the hospitable city. They are given favored seats in the theaters. They dine at Odessa's best restaurants. If they need medical care, they can call on the city's best doctors for treatment without charge. The International Seamen's Club is at their disposal for concerts, dances and moving pictures.

Old timers, sailors or stevedores, will tell you that Odessa is booming. And there's a reason. Foreign trade of the Soviet Union more than doubled in the five years between 1950 and 1955.

Lined up alongside ships of foreign registry are the Soviet vessels, the *Argun*, sailing for Italy with a cargo of pig iron; the *Sukhona*, bound for India; the *Timiryazev*, loading for China, and dozens of other freighters. They sail the seven seas symbolizing the goal of the Soviet merchant marine: "We trade with the world."



THIS SHIP TRANSPORTED A CARGO OF SUGAR FROM CUBA.

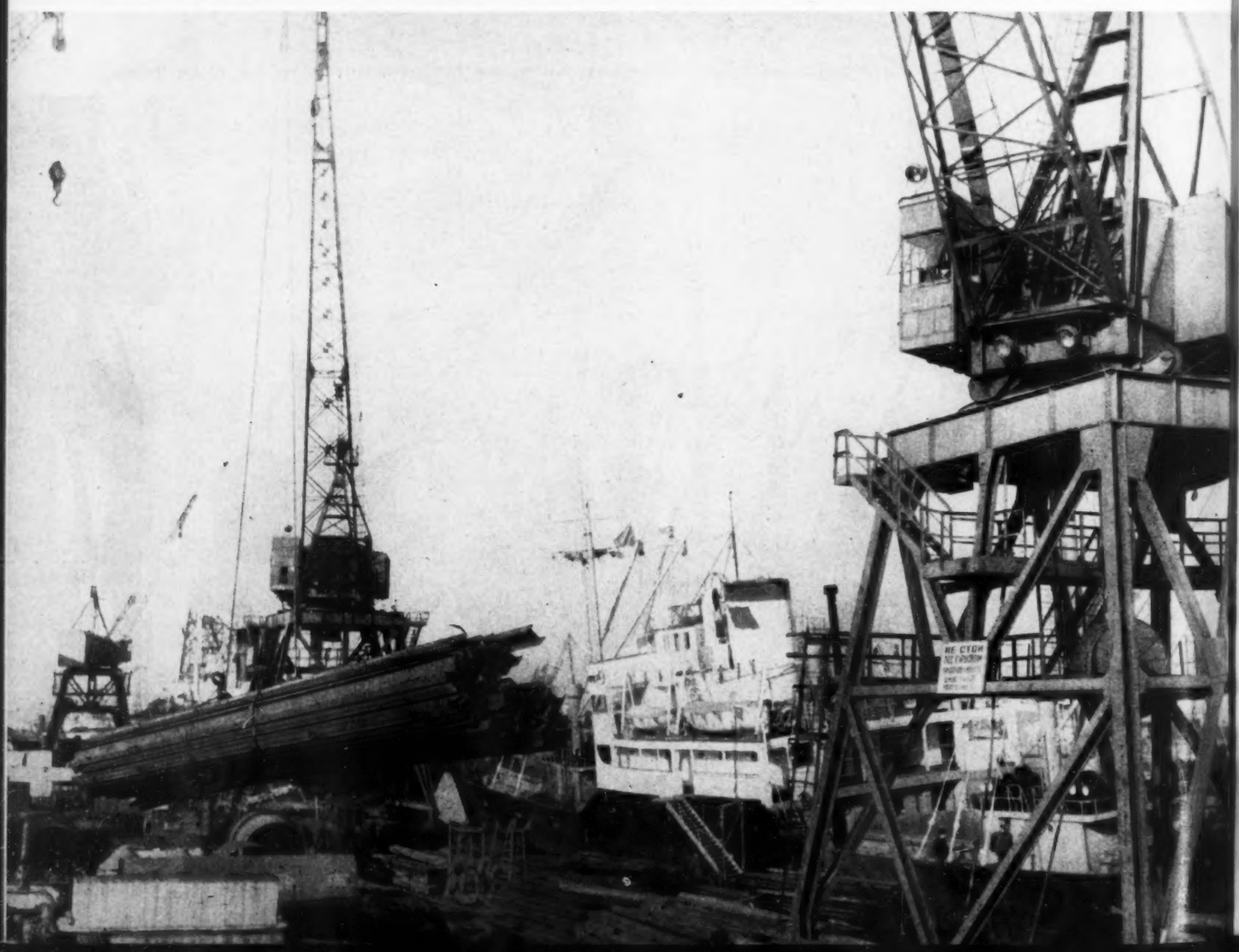
AS YET, UNITED STATES SHIPS ARE A RARE GUEST IN ODESSA. THIS AMERICAN FREIGHTER BROUGHT PEDIGREE CATTLE, PURCHASED IN THE USA, TO THE HARBOR.

FOREIGN SEAMEN ON LIBERTY MAKE THEMSELVES AT HOME IN ODESSA.

SEAMEN SWAP STORIES BEFORE A CONCERT AT THE INTERNATIONAL SEAMEN'S CLUB.

ODESSA, A SAILORS' TOWN *Continued from page 59*

CARGO IS BEING LOADED ON A SHIP BOUND FOR INDIA. IN THE FIVE YEARS BETWEEN 1950 AND 1955, FOREIGN TRADE OF THE USSR MORE THAN DOUBLED.



SCHOOL FOR MILLIONS

FRUITGROWER VASILI KOSTIN.

YOU MEET HERE MANY BEAUTIES LIKE THIS.

Continued from page 31

in order again. And then she will smile again when she tells you how she joined the collective farm when it was organized, how she grew her prize corn. She received an award of merit for her corn.

Another participant is Vasili Kostin. His face is familiar to many fruitgrowers in the country. Usually he is photographed holding one of his famous Antonovka apples. It weighs a pound and some ounces.

Kostin is a wheelwright by trade, but he has always had a secret ambition to grow fruit. He happened to come to the village of Druzhba one day and stumbled on a small abandoned orchard. It had been left uncared for because there was no fruitgrower on the collective farm to which it belonged. He began to look after the orchard purely as a hobby. Soon he was so absorbed in his trees that he left his job as wheelwright to join the collective farm.

With considerable difficulty, Kostin persuaded the collective farmers to add another 25 acres to the orchard and to plant more trees. They had become so accustomed to the idea of an unproductive orchard that some were more than skeptical. But he talked them into letting him try.

It is 13 years since this happened, but even now Kostin finds it hard to talk of it without emotion. The young orchard was already bearing fruit and beginning to bring in income when a sudden cold spell killed every tree in his cherished orchard. He walked through the orchard with shears and saw, pruning single branches, lopping off crowns, but it was hopeless. There was only one thing left to do, to take the axe to his orchard, to cut down every tree and to pull the roots.

Then he replanted his trees, and his bountiful orchard has been bringing the farm a large yearly profit.

Vasili Kostin was invited to the Agricultural Exhibition to give other fruitgrowers the benefit of his experience.

It is the Vasili Kostins and the Anna Ladanis who might well have stood as models for the two strong sculptured figures at the big entrance gates of the Exhibition. A man and a woman stand together. Between them they hold up a golden sheaf of wheat to the sky.

THE PARADE OF THE "LIVE EXHIBITS."

THE PRUDENT FRUITGROWER.

MEMBERS OF THE AMERICAN AND THE SOVIET PARACHUTING TEAMS CHECK FIGURES BEFORE THE START OF COMPETITION. TEN COUNTRIES COMPETED THIS YEAR.

SKY DIVING CHAMPIONSHIP MOSCOW, 1956

By Victor Kuprianov

All Moscow kept looking skyward from July 29 to August 5. Why? The Third World Parachuting Championships were on.

Parachuting is a new sport. That explains the prejudices connected with it. Many people still shudder with horror at the thought of jumping. To them parachuting means bailing out of a plane, counting ten, and then hanging on to a silk umbrella for dear life. But it's not as bad as all that. It's real fun, and boosters of the sport call parachuting "sky diving."

Coming through the air is like diving in water. The jumpers even do figure eights when coming down. That is, they describe horizontal semicircles while coming down by moving their arms, just as they would in water to shift the position of their body.

This is one sport women should be particularly enthusiastic about, since it is one of the few in which they can excel the males. And not only can, but often do.

But isn't that dangerous, you might ask. How do you know you're falling 30 seconds and not more, and suppose your chute fails to open?

In parachuting you don't trust to luck. Every contestant has a stop watch and altitude meter mounted on a breast pack. In the event the chute doesn't open, which rarely happens since the jumper rigs his own chute, each jumper has an emergency chute. The chute of the American Lew Sanborn failed to open after a delayed jump, but he's still alive to tell the story because of that reserve chute.

Ten countries competed for top honors, an indication of the growing popularity of this sport. They were (in the order the teams finished) Czechoslovakia, USSR, Bulgaria, France, Yugoslavia, USA, Poland, Rumania, Hungary, Israel.

It was a landslide victory for Czechoslovakia. In the men's events they took four first places. The crown went to Gustav Koubek. In the women's division the laurels went to his teammate Miss Josefa Maksova.

Four events were included in the program. First came the 2,000-foot spot jump. In this test the contestant tries to land in the center of a cross-mark within a circle 1,000 feet in diameter. A bull's-eye jump nets the contestant 150 points; he is penalized one point for every three feet off center. Incidentally, Lew Sanborn, Florida, USA, made the second best jump in this event.

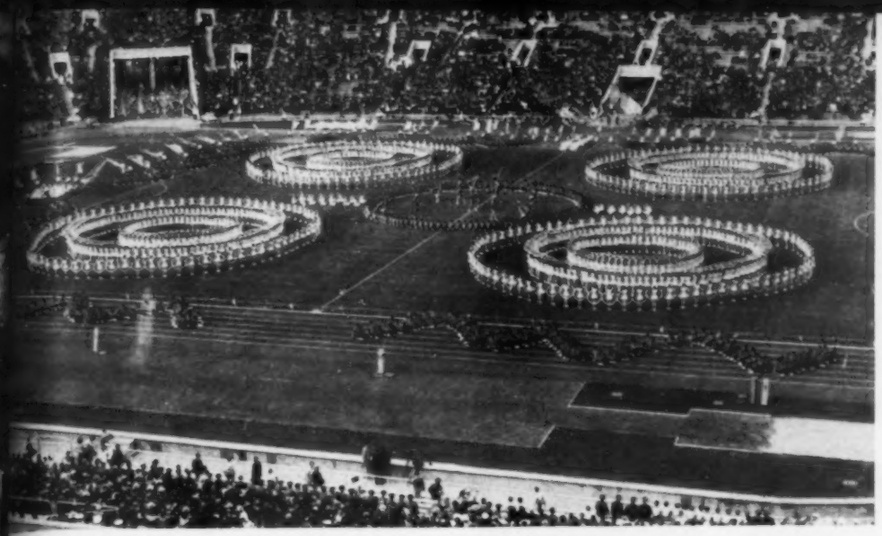
Then there were two delayed jumps, one from an altitude of 4,900 feet, the other 6,600 feet. In the first case the jumper had to fall horizontally, face downward, for 20 seconds before opening his chute. In the 6,600-foot jump the delay is 30 seconds. Every tenth of a second early or late in opening the chute costs the jumper two points. The fall must be absolutely horizontal. Contestants are penalized for delays and dips.

The final event was the team jump. The team leaves the plane simultaneously and each man tries to land as close to the cross-mark as possible. The difficulty in a group jump is that the jumpers may interfere with one another. This is where precision teamwork is needed.

The spirit at the championships was one of great friendliness. The Soviet team turned its chutes over to the Americans to try. George Stone, Ohio, USA, said that when he got back home he would try jumping with a Soviet-type chute, and the Soviet team manager said there were things he liked about the chutes the Americans used.

The teams left Moscow, some with medals, others without, but all left friends. Summing up the American team's impressions we quote Mr. Jacques Istel, the team captain:

"We have had a very fine stay here. We have been cordially welcomed and we have enjoyed the championship. We were impressed by the sportsmanlike attitude of the Soviet team. We were impressed by the Russian team as jumpers. They are not only fine jumpers, but fine fellows."



GYMNASTS PERFORM AT THE OPENING OF MOSCOW CENTRAL STADIUM IN AUGUST. IT SEATS 100,000 EASILY.

MOSCOW'S NEW STADIUM HOLDS 100,000 WITH EASE

When Moscow's fans dedicated the city's spanking new stadium last August they found it as massive and complete as the most rabid enthusiast might desire. And now they are enjoying its widespread facilities for spectators and participants alike.

Centered on a 450-acre plot, the big steel and concrete bowl is faced with granite and ceramics. Its outside walls rise 100 feet to the base of the flagpoles lining the edge, and inside, the vast tiers seat more than 100,000 spectators with the accepted 16 inches per seat. The seats, if lined up end to end, would stretch for 25 miles. An individual seat tally would take about 8 hours. In event of showers, the second deck provides ample cover for the fans.

This gigantic new stadium named after Lenin is situated on a bend of the Moskva River opposite the towering building of Moscow University. It is more than a stadium in the usual sense, it is truly a sports park or sports town, with the plant providing more than 130 different installations including:

Two great athletic fields.
Eight soccer fields, each the size of an American gridiron.
Twenty basketball courts.
Twenty-nine tennis courts.
A skating rink with artificial ice.
A swimming pool with seats for 13,200 spectators.

Bad weather will not put a crimp in the program, as there is an indoor arena seating 15,600 that will be used for all indoor sports, and for ice-skating too.

As winter's chill approaches, thousands of Muscovites, young and old, are waiting to try the new stadium's skating facilities. With the first hard freeze the management will flood the acreage surrounding the buildings and provide ice-skating over an area of more than two million square feet.

The new stadium has some 500 floodlights to turn night into day on the playing fields and permit TV and movie shots of the evening events that are always so popular in the Soviet capital.

Among the innovations found here is the more effective use of space under the stadium's tiers.

Under the first tier are the players' lockers and showers, referee's quarters, a string of snack bars, a medical center, post office and telegraph station. The second tier houses 20 lounges and 50 snack bars. The third tier tops 14 regulation gyms, complete housing facilities for 340 visiting athletes, two moving picture houses with 250 seats each, and a conference hall of the same size plus the usual press facilities. The third tier also holds two restaurants for 300 persons each.

Altogether the new sports park has facilities for 26 different sports, and several thousand athletes could participate simultaneously before crowds that would run over 150,000.

The construction of the stadium was started in March 1955 and completed last August in time for the National Sports Festival.

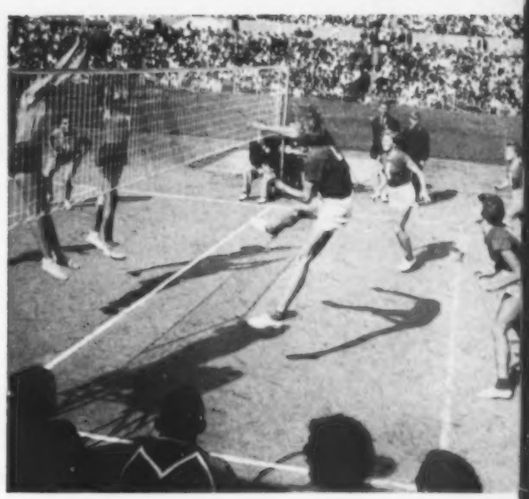
The festival, running for 12 days, August 5-16, climaxed tremendous elimination contests that started in small towns and remote villages of the country. Winners of these early rounds went to the district finals. Then the regional contests were held, followed by the finals for each of the 15 Soviet Republics.

These preliminaries saw some 17 million athletes take part for the right to represent their areas in the national finals in Moscow. Teams of each of the republics came to Moscow, 9,244 strong, to vie for prizes in the new stadium.

During the 12 days of the games, 33 national records were broken with nine of them setting new world marks.

All of this sports activity took the services of 1,300 referees and the 12-day period brought Moscow sports fans the most hectic series of thrills they'd had in many a moon. But they took it all and called for more. And they are sure to find hot sports contests in every field at the new stadium and see the crowning of many new champions in the coming seasons.

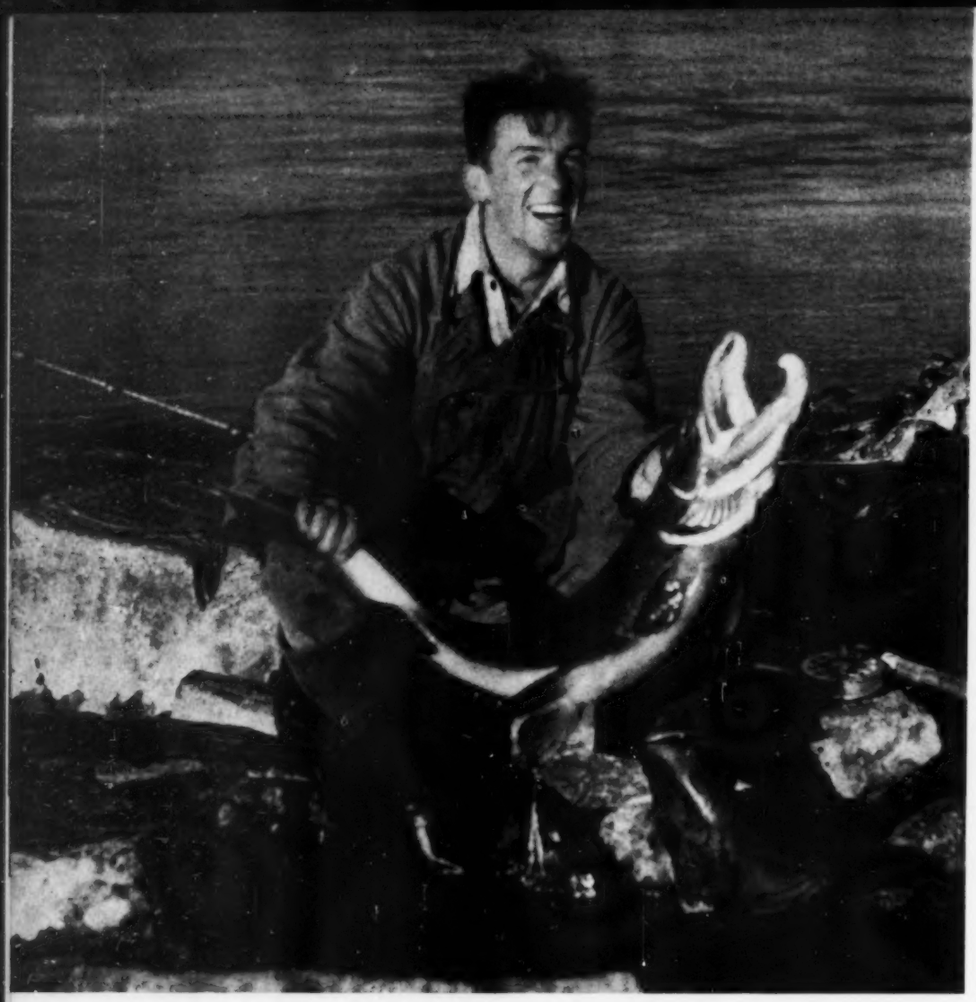
A CORNER OF THE NEW STADIUM BEFORE GAME TIME.



WOMEN'S VOLLEYBALL HAS CLASS, DRAWS CROWDS.

SPORTS CLUB MEMBERS PARADE BEFORE COMPETITIONS.

FANS SHOW THE OLD SPIRIT IN THE NEW STADIUM.



NORTHERN SALMON—STOUT FIGHTERS

By Vadim Gippenreiter

Far to the north and a bit west of Moscow lies the Kola Peninsula with its cold, swift-running rivers that are a favorite spawning ground for the greatest fighting fish of them all, the northern salmon.

Here is a true sportsman's paradise. It is necessary to shout to be heard above the thunderous roar of the falls as the raging stream speeds on its way to the White Sea. The tumbling waters smash against the rocks on their dash to the sea. And somewhere in the midst of the spray and foam is the salmon, a strong and extraordinarily beautiful fish, fighting its way upstream to spawn in quieter water.

As true fishermen everywhere know, the salmon lives and reaches maturity in the depths of the ocean, but returns to spawn in the fresh clear and cold waters of the river where it first knew life.

Although the salmon does not feed in fresh water it retains its savage instincts as a game fish and will grab anything that moves. And that is exactly why our fishermen get such sport with their spinning gear.

Long before the salmon season begins the confirmed angler is restlessly working over his tackle, making new spoons and jigs, oiling reels, testing line and the rest of the gear needed in camp life.

Our sports shops carry everything the fisherman or camper needs, but most of them love to improvise, to test that "special" bait or piece of equipment.

Spinning enthusiasts claim that "to catch a salmon is the equivalent of killing a bear." I have experienced this thrill many a time.

. . . Our camp has been pitched and smoke rises in a blue ribbon from a dying fire. We walk to the stream and soon have the heavy spoon flying to land between two eddies where a rock cuts the water. No matter how many times one casts, there is always that relaxed feeling that means so much to the fisherman.

The river lures the angler on to other rapids in the distance and the banks change from rugged rock to soft moss-covered ground. Cast again, and again. The bait is carried on top of the racing stream and then you start to reel in. Suddenly there is an explosion. You wait, then set the hook as the fish pulls with all his angry weight.

The strain on the reel is tremendous as yard after yard of precious line runs out. But you gradually gain back a little each time the salmon pauses or turns. He gets closer and if one is not very careful, the wily salmon will race into the rocks and the fisherman may find himself with a slack line. You can do nothing then but replace your terminal tackle and cast again.

In addition to the local fisherman one also meets spinning enthusiasts from Moscow and Leningrad in these waters. People from southern regions come here to rest under the brisk northern skies and match wits with game fish or hike along the rivers with their unending series of rapids.

In addition to salmon, these northern streams abound in other fish well worth the angler's time and effort. They include large perch, almost all black with red fins and a golden belly; trout and grayling, as well as the notoriously bitter fighter, the northern pike.

So much can be caught with a spinning reel or fly rod that the catch of one day can hardly be carried. And, of course, the true sportsman keeps only what he will need and carefully releases his other prizes.

Fishing our northern waters is wonderful sport—challenging sport.

FISHING FOR NORTHERN SALMON IS A TRICKY SPORT. ▶

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