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NIKITA KHRUSHCHEV, A MEMBER OF THE PRESIDIUM OF THE USSR SUPREME SOVIET, ADDRESSES A JOINT SESSION OF THE TWO HOUSES OF THE SOVIET PARLIAMENT.

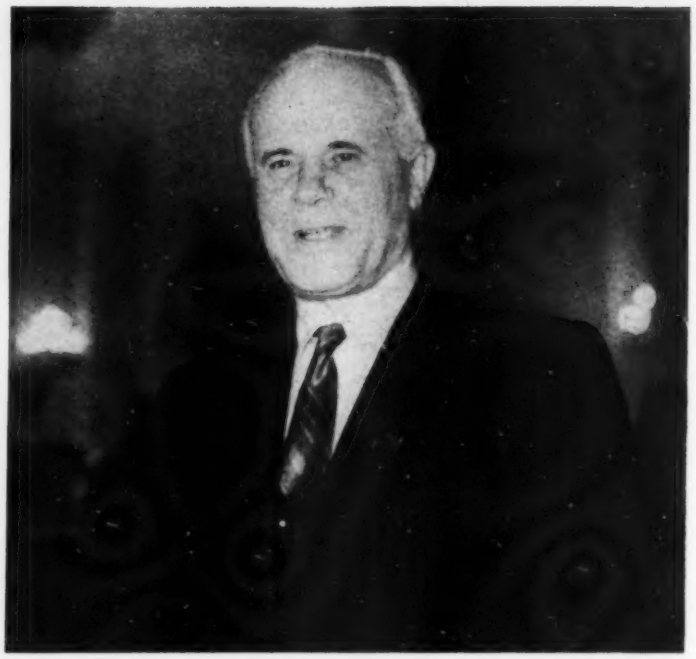
The Presidium of the Soviet Parliament

By Mikhail Georgadze, *Secretary of the Presidium of the USSR Supreme Soviet*

THE Supreme Soviet is the highest governing body of the Soviet Union, combining both legislative and executive duties. Its deputies are elected directly by the people and embody the people's sovereign will. These are not professional politicians who sit as deputies in the two houses—the Soviet of the Union and the Soviet of Nationalities—which make up the Supreme Soviet. They are industrial workers and farmers, doctors and engineers, writers and actors, men and women from every stratum of the population, representatives of different nationalities inhabiting the country.

About one-half of the 1,347 deputies elected to the present Supreme Soviet in 1954 are workers and farmers. The remainder are people in the professions, the arts and various other fields of public life. They meet to draft legislation and decide on matters of state importance at the regular sessions of the Supreme Soviet. Between sessions they work at their own jobs in factories, farms, schools, hospitals and elsewhere alongside the people who elected them and to whom they are responsible. This provides a guarantee that the legislator will be responsive to the wishes and needs of his constituents. *Continued on next page*

KLIMENT VOROSHILOV, PRESIDIUM PRESIDENT, TALKS TO TAJIK FARMER-VETERAN.



MIKHAIL TARASOV, ONE OF THE 16 VICE PRESIDENTS, WAS A TRADE UNION LEADER.

DEMYAN KOROTCHENKO, A PRESIDIUM VICE PRESIDENT, WAS ONCE A RAILROAD MAN.

The Presidium *Continued*

The Supreme Soviet has a number of permanent commissions that function between sessions. These commissions are elected by each of the two chambers from among the deputies. They include the budgetary, foreign affairs, legislative and credentials commissions. The Soviet of Nationalities also elects its economic commission.

The commissions study all matters which come under their jurisdiction and submit their reports and recommendations to the Supreme Soviet when it reconvenes.

The nation must, however, have a body in permanent session to take care of affairs of state between meetings of the Supreme Soviet. The Constitution vests this function in the Presidium of the Supreme Soviet. This body is elected at a joint session of the two houses from among the deputies. It has a president, 16 vice presidents, a secretary and 15 additional members.

To provide for representation from each of the Union Republics which make up the USSR, fifteen vice presidents of the Presidium are also the presidents of the corresponding body in those republics, the republics having much the same governmental structure. The Presidium, as a consequence, is aware not only of the requirements of the country as a whole but of the specific needs of each of the republics.

The present President of the Presidium is Kliment Voroshilov, a statesman who began life as a fitter in a railroad maintenance shop.

VICE PRESIDENT KARL OZOLIN, A JOURNALIST, ONCE EDITED A LATVIAN PAPER.

THE AMBASSADOR OF GREECE PRESENTS HIS CREDENTIALS TO KLIMENT VOROSHILOV.

VICE PRESIDENT JUSTAS PALECKIS IS A MEMBER OF THE INTERPARLIAMENTARY UNION.

VICE PRESIDENT VASILI KOZLOV (MIDDLE) MAKES THE PRESENTATION OF AN AWARD.

Among the vice presidents are Vasili Kozlov, a former schoolteacher who led the Byelorussian partisan movement in the Second World War; Mikhail Tarasov, a veteran trade union leader; Mirza Ibraghimov, an Azerbaijan writer; Justas Paleckis, a Lithuanian journalist.

The Presidium, which might be called the executive committee of the Supreme Soviet, to use a rough analogy, is accountable for its every action to the parent body. It is not an independent agency in any sense; its powers are conferred by the Supreme Soviet and may be withdrawn by that body. To assure this subordination, the Constitution requires that the Presidium, including its president, be elected by the Supreme Soviet.

The powers of the Presidium are strictly delimited. It has no veto power with respect to legislation, nor is it permitted to interfere, directly or indirectly, with any of the Supreme Soviet's legislative functions. It is charged solely with the publication of laws passed. The laws are signed by the president and secretary of the Presidium and are published in each of the languages used in the republics—there is no single official language in the Soviet Union, all having equal status.

Under very special conditions the Presidium of the Supreme Soviet itself is empowered by the Constitution to dissolve that body and order a new election. There is only one circumstance under which the Presidium may dissolve the parliament. The Constitution provides for the following contingency, one which has not occurred in the forty years since the Soviet Union was founded. If the Soviet of the Union and the Soviet of Nationalities fail to agree on any issue in question, the two chambers are required to set up a conciliation or conference committee. Should the committee fail to arrive at a decision satisfactory to one or the other of the chambers, the issue is considered for a second time by each chamber. Failing agreement this time, the Presidium is empowered to dissolve the Supreme Soviet and order new elections to be held within two months.

But even in this highly qualified and strictly limited contingency, the Presidium is not vested with extraordinary powers that would permit it to take over governmental control. It is merely exercising an organizational function with which it is charged by the Constitution, to assure the equal rights of the two chambers which constitute the Soviet Parliament. It cannot assume powers other than those vested in it by the Constitution nor any which are not controlled by the higher body.

Upon the expiration of the regular four-year term of the Supreme Soviet, or the body's dissolution prior to expiration of its regular term of office, the Presidium continues to function until the newly elected Supreme Soviet chooses its own Presidium.

The powers granted the Presidium by the Constitution, although limited, are extremely important.

In the sphere of foreign affairs the Presidium ratifies and denounces treaties and conventions with other countries, establishes diplomatic ranks, appoints and recalls plenipotentiary representatives of the Soviet Union in foreign states, and receives letters of credence and recall from diplomatic representatives accredited to it by foreign states.

In addition to these matters, the Presidium appoints and removes the high command of the Armed Forces of the USSR, establishes military titles and resolves other questions concerned with the national defense.

The Presidium is charged with seeing that acts of governmental bodies conform to Soviet law. The Council of Ministers, the highest administrative organ, is responsible to the Presidium between the sessions of the Supreme Soviet. The Presidium may repeal a decision of the Council of Ministers if it does not conform to law. Between sessions of the Supreme Soviet the Presidium may release or appoint members of the Council of Ministers subject to subsequent confirmation by the Supreme Soviet.

The Presidium makes awards to citizens for meritorious achievements in industrial, cultural and scientific work. In the period 1954 to 1957, one million such awards were made.

The Presidium rules on the granting or revocation of citizenship. It is empowered to pardon convicted prisoners, a function it exercised, for example, last November during the fortieth anniversary celebration of the Soviet Union, when it issued an amnesty decree.

It can, either on its own initiative or at the request of one of the republics, hold a referendum on important legislation. Nation-wide discussions have become customary procedure in the Soviet Union in connection with major laws being drafted. An example is the six-month discussion in every part of the country on the draft of the present Constitution prior to its adoption in 1936. More recently there was the discussion which centered around overhauling the pension system. Many of the proposals made were incorporated into the final bill. Another

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A GROUP OF DEPUTIES GET TOGETHER BETWEEN SESSIONS. ABOUT ONE-HALF OF THE 1,347 MEMBERS ELECTED TO THE PRESENT SUPREME SOVIET ARE WORKERS AND FARMERS.

PEOPLE IN THE PROFESSIONS AND THE ARTS COMPRISE THE OTHER HALF OF THE SUPREME SOVIET. NIKOLAI CHERKASOV AND ALLA TARASOVA ARE FROM THE THEATER.

The Presidium *Continued*

example is the legislation on the reorganization of industrial management, worked out with the active participation of the public.

The Presidium is required to convene the Supreme Soviet for regular and extraordinary sessions. Regular sessions must be called at least twice yearly. An extraordinary session may be convened at the discretion of the Presidium or on the demand of one of the republics.

The Presidium is empowered to issue decrees; some must be endorsed by the Supreme Soviet, others do not require such endorsement. In this latter category are individual amnesty decrees, those granting or revoking individual citizenship and those granting awards and honors.

In the first category, those requiring endorsement, are decrees appointing or releasing members of the Council of Ministers or those which amend existing laws. Recent examples are: the decree reducing the working hours of industrial and office workers on Saturdays and the eve of holidays; the decree limiting the working day of 16 to 18-year-old workers to six hours; the decree to extend maternity leave; the decree granting citizens the right to purchase or build individual homes.

But for all the functions it exercises, the Presidium is accountable to the Supreme Soviet, in which all final legislative and executive power is vested.

As to the immunity of Supreme Soviet deputies, strict safeguards are provided by the Constitution. A deputy may not be arrested or prosecuted without the consent of the Supreme Soviet or, between sessions, without the consent of the Presidium.

The Presidium has its various departments concerned with legislation, awards, pardons, citizenship, information, statistics and other functions. Acting for the Supreme Soviet, it receives reports from the Council of Ministers, the Chairman of the Supreme Court, the Procurator General and other high officials.

Large numbers of private citizens call on the Presidium, either in person or by letter, with suggestions for legislation, with complaints of the work of various government bodies, or with personal appeals.

These suggestions, complaints and appeals are dealt with by the Presidium itself or turned over to the proper government department for investigation. In the latter case, the department must report its findings to the Presidium which then makes its recommendations.

All the Presidium's powers, whatever their nature, are exerted collectively. The Presidium is the Collective President of the USSR. ■

DEPUTIES OF MOLDAVIA, ESTONIA, THE UKRAINE AND UZBEKISTAN IN THE KREMLIN.

AN IMPORTANT PART OF THE DAILY LIFE OF A DEPUTY IS RECEIVING VISITORS. HERE DEPUTY NINA STRELNIKOVA (LEFT), AN ENGINEER, TALKS TO ONE OF HER CONSTITUENTS.

COLORFULLY COSTUMED BYELORUSSIAN DANCE *BULBA* (POTATO) EXPRESSING THE FARM GIRLS' JOY OF BUMPER HARVEST WAS CREATED BY THE MOISEYEV ENSEMBLE.

To Our American Audiences

Soviet National Folk Dance Ensemble will tour the United States this spring as part of the Soviet-American cultural exchange program

By IGOR MOISEYEV

One hundred members of the Moiseyev Ensemble, leading Soviet folk dance company, will present a program of regional dances from all parts of the Soviet Union during their American tour this spring. Besides a series of recitals at the Metropolitan Opera House in New York, the company will perform in Boston, Washington, San Francisco and other cities. The 10-week tour is part of the Soviet-American cultural exchange program.

Igor Moiseyev, director of the Ensemble, was born in 1906. He studied at the choreographic school of the Bolshoi Theater and was soloist at 18. He danced the roles of Raoul in the ballet *Theolinda*, Joseph in *Joseph the Handsome*, Mateau in *Salambo*, Phoenix in *The Red Poppy*. Very early in his career he demonstrated his talents as a ballet master in the ballet productions *Soccer Player*, *Salambo* and *Three Fat Men*.

Moiseyev has made a lifelong study of the folk dance for its influence on professional choreography. He is a demanding student and artist, a man of wide erudition who has tapped the history of people and their cultures for the sources of his dance themes and movements.

His work is not solely confined to the Ensemble. He directs national and regional dance festivals, works with amateur groups and serves as judge at international festivals.

Moiseyev has received three Stalin Prizes and the honored title "People's Artist of the Soviet Union" for his contributions to choreography. His most recent production was the Khachaturyan ballet *Spartacus* for the Bolshoi Theater.

THIS is the first time our Ensemble will be dancing in the United States, and I should like to tell our American audiences something about our work.

Every people creates its own unique and individual art, handed down from one generation to the next. Some of it is preserved, some changes to suit the temper of the time and the development of a people, some of it is lost.

Perhaps the oldest of the folk arts, the dance has stirred people throughout the ages. It has expressed every shade of human feeling and emotion. In many countries, Italy, France and elsewhere, it was the foundation for the classical dance.

The folk arts in the Soviet Union have had a remarkable renaissance in the last several decades, particularly the colorful and versatile folk dances. Our Ensemble was the pioneer in bringing these folk dances to the professional stage.

Without examples or experience to draw on, we had to devise our own methods for collecting and studying these dances and reworking them for the stage.

A Choice of Three

Like Czarevich Ivan in one of the old Russian fairytales, we found ourselves at a place where three roads branched off. Which one ought we to take?

The first was to reproduce the folk dance intact, with all the details and movements unchanged, whether they were relevant to the theme and spirit of the dance or not. One ballet master explained to us that he thought this the only valid approach because he, I quote him, "loved the art of the people too much to change anything that they have created."

With this approach we disagreed. We rejected it as a passive attitude toward art which amounted to little more than a mechanical copying of what already exists without trying to develop it creatively.

We also rejected the contrary approach, that of stylization, in which the artist is concerned exclusively with his own interpretation. He disregards the character, psychology and tradition behind the dance and for the sake of the stage effects introduces elements alien to the original dance, so that it has only a distant resemblance to the true folk dance from which it was derived.

Ours is an active approach to folk art. We strive to transform and interpret the folk dance creatively, to preserve its peculiar national flavor and tradition while at the same time we try to give it more meaning for the audience by enriching its form and content.

This is the way such great poets as Pushkin, Shevchenko and Nekrasov and such great composers as Glinka, Moussorgsky, Balakirev, Tchaikovsky, Beethoven and Chopin worked with folk material.

We employ all the resources of the professional stage—dramaturgy, composition, chore-

Continued on next page

TRAVUSHKA, A NUMBER FROM THE SUITE OF OLD RUSSIAN DANCES, IS FILLED WITH ROLLICKING HUMOR AND MISCHIEVOUS FUN.

Tamara Zeifert, soloist, received her training at the Bolshoi Theater choreographic school and was among the first to join the Ensemble when it was organized. Her technical background and the lyricism of her style have created a wide range of unforgettable characters.

Lev Golovanov, soloist, is a versatile dancer whose characterizations are so true to life that it is hard to believe that the same man dances the parts of the shy lovelorn boy, the brave warrior, the energetic soccer player and the dandy, just four of his many diverse roles.

Lydia Skryabina, soloist, joined the Ensemble at 15. Her dancing is full of the joy of life and her talent is best displayed in her rendition of Russian and other Slavic dances. She has created highly original characters in choreographic scenes depicting life in old Russia.

Lyudmila Butenina is one of the Ensemble's younger dancers, but like the best veteran she has had good training. Although she has been with the group slightly more than two years, she not only dances in the chorus but often doubles for the principals in leading numbers.

To Our American Audiences

Continued

ography, music, design. First we study the dance as it is done by the people; next we select what we think are the major elements and then we create our own interpretation. It becomes a synthesis of the elements we select, a vivid and dramatic image of the dance, as it were, that embodies the characteristic national features.

Let us take the popular Moldavian dance *Moldoveniaska* as an example. Although the basic movements are retained, it is danced differently in almost every Moldavian village. As presented by our Ensemble *Moldoveniaska* does not duplicate completely any one of these versions.

What we do is develop the composition, emphasize the movements that are particularly regional, perfect the choreography so as to round out and dramatize what we have called the dance image.

New Dance Creations

Our Ensemble does not only interpret the traditional folk dance, we create new choreographic works—single dances, suites and dance scenes with themes from everyday life that may have been used in poetry or song but have not yet been woven into dance figures.

The Byelorussian dance *Bulba*—potato—was one of the earliest dances we created. In the old days potatoes were the chief crop grown by the Byelorussian peasants and their well-being depended upon the yield. An old folk song called *Bulba* sang of the joy of a big harvest.

We used the song as the basis for our music, combined the basic movements and rhythms of Byelorussian folk dancing with the movements of a woman working in the fields and built a dance we called *Bulba*. It is widely popular, has been performed by many other professional and amateur dance groups and has led to other dance versions built around the song.

Our suites are composed of a group of dances in the same style built around a central

theme. The suite of old Russian dances, for example, interprets the many-sided Russian personality, each of the dances presenting a different aspect of the national character. *The Reel* shows the vigor and stateliness of bearing and the friendly relations between young men and women. The duet *Korobochka* reveals a wide range of lyrical emotions, the modesty of the maiden and the tender attention of the young man in love with her. The episode *Travushka* is filled with Russian humor and mischievous fun. The dance of the young men is an embodiment of male strength and daring.

The Ukrainian suite *Vesnyanki* is a one-act dance play based on traditional customs and songs. The story is simple—a young couple in love are forced to separate. We dance the grief of the girl, the sympathy of her friends, the joy of the happy reunion and the merry-making to celebrate the engagement.

We have two groups of choreographic scenes —*From the Past* and *Soviet Scenes*. The first is made up of the dances: *Love in the Countryside, An Old-Fashioned Town Quadrille, Polka with Pirouettes and Compliments,* and *Sunday*. This group shows the life and customs of old Russia.

The second group is a picture of modern Russian life and character portrayed in the dances *Day Aboard a Ship, Polka Mamma, Soccer Game* and *Guerrillas*.

Dances of Foreign Countries

Our Ensemble tours many countries. This helps us to study various folk dances firsthand and to include them in our repertoire.

It is impossible to overestimate the importance of contact in the field of culture and art for establishing mutual understanding and confidence. That is why we are most happy to be dancing for American audiences.

We hope to do more than perform dances of our country. We hope to be able to study American folk dances and then to perform them for Soviet audiences when we return home. It will be our way of helping the people of our two countries to understand each other's minds and hearts. ■

Galina Talanova is the youngest dancer in the Ensemble. She studied at the folk dance department of the Bolshoi Theater choreographic school and graduated from it in 1956. Her performance of the group's Slavic dances have been described as spirited, whimsical and gay.

Samson Galperin, head conductor of the Ensemble, studied at Kharkov Conservatory and joined the group in 1943. An authoritative scholar of music folklore, he composes much of the musical accompaniment for the dances, both rewritten national folk songs and original themes.

Sergei Tsvetkov, soloist, joined the Ensemble in 1945, after dancing with some amateur groups. His dancing is highly original and filled with a gentle humor. He has developed a particular style of his own in such diverse roles as an elderly governmental official, soccer fan and guerrilla.

Tamara Golovanova, soloist, began her career in her school amateur dance group. Although her professional training started after she joined the Ensemble, that it was thorough is evident from the quality of her dancing. She is considered one of the best in the group.

THE REPERTOIRE OF THE ENSEMBLE INCLUDES THE NATIONAL DANCES OF MANY FOREIGN COUNTRIES. THIS IS THE RUMANIAN DANCE *BRUIL*.

SINCE PRE-REVOLUTIONARY TIMES (BELOW, RIGHT) BAKU HAS TREBLED ITS HOUSING AND IS NOW THE COUNTRY'S FOURTH LARGEST CITY WITH A POPULATION OF 900,000

BAKU — Capital of A

OF 900,000

# of Azerbaijan

OF the old city of Baku on the west shore of the Caspian Sea, the 10th century Arab traveler Masudi wrote: "In Baku there are springs of white and other kinds of oil. And nowhere in the world—God well knows—is there white oil except in this place."

Although the Baku wells have long since yielded first place to other oil regions developed within the Soviet period, it is still one of the country's largest producers. From the hillside terraces of Kirov Park, you see silhouetted against the blue haze of the horizon the slender derricks pumping "the thick black blood of Baku," as the poet Mayakovsky phrased it.

But modern Baku is more than oil. It is chemicals, machine tools, electric motors, mobile drilling rigs and consumer goods besides. Baku turns out 270 different manufactured items and is a major port. With a population exceeding 900,000 it is the fourth largest Soviet city, capital of the Azerbaijan Republic.

Broad avenues of Baku, graced by trees and a rich profusion of flowers, run inland from the shore, some sloping gradually and others climbing steeply toward the blue mountains in the distance.

The lush greenery tempers the heat and settles the dust. Every section of the city has gardens and parks planted with Mediterranean trees, bushes and climbing plants. Young olive trees, pines and cypress line the squares and avenues. In 1957 alone, the residents of Baku planted more than 200,000 trees. The older people are pleased to say, "We are making the city beautiful not only for those who come after us, but for ourselves, too."

The slum districts, so typical of the Baku of czarist times, have long since been cleared away, replaced by street upon street of modern houses. This is true not only for the central districts, but also for the residential districts built around the factories and refineries.

In the public buildings—the many theaters, cinemas, clubhouses, government offices, schools—Azerbaijan motifs are blended harmoniously with modern design. As pleasing to the eye are the light-colored tints of the apartment buildings, their large windows, balconies and the patterned ornamentation of the façades.

Baku is an ancient city, founded, unwritten history tells us, as far back as the 5th century. The city is mentioned in 7th and 8th century

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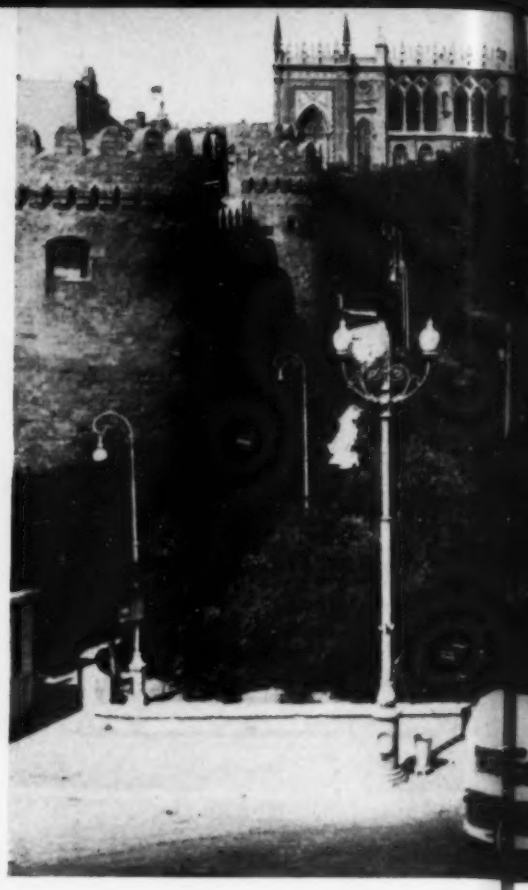
ELMIRA RAGIMOVA, A BAKU SCHOOLGIRL, PERFORMS AN INDIAN DANCE.



BAKU — Capital of

written chronicles. It was ruled successively by the Arabs, Turks and the Persians, and became part of Russia in 1806.

The city's history can be read in the gems of medieval oriental architecture still standing. The most famous is the palace of the Shirvan Shahs, a mute testament to many now long-forgotten tragedies. Near the picturesque bay stands the Maiden's Tower, erected nine centuries ago.

But the tone of Baku is not set by the monuments of the past, or even by the relatively recent pre-revolutionary period. The

POPULAR AZERBAIJAN ACTOR GUSEIN AGA SADYKOV IN A TELEVISION PROGRAM FOR CHILDREN, "THE TALES OF GRANDPA PIRI."

NIZAMI SQUARE IS NAMED FOR THE GREAT TWELFTH CENTURY WRITER, FOUNDER OF AZERBAIJAN POETRY. THE LUSH GREENERY OF THE MAIN SQUARE IS TYPICAL OF THE CITY.

Azerbaijan *Continued*

accent is contemporary. In the last forty years, Baku has grown to many times its former size—it has altered almost beyond recognition.

The city is surrounded by dozens of new towns and industrial communities. Each of them—the little town of Vorovsky is typical—has a ten-year school, a hospital, a community center, shopping district. The city's budget, with a substantial part allocated to housing, has increased from less than 13 million rubles in 1925 to better than 540 million in 1957. In this period twice as much housing has been built as the city had before that time.

Not only has the city changed in appearance; its entire way of life has altered. It is now a center of education and culture, with 12 universities and colleges, drama, opera and ballet theaters, museums, libraries and the Azerbaijan Academy of Sciences.

The old oil worker learned to read and write only in Soviet times, when he was well along in years; his children go to the colleges and the universities as a matter of course, like so many of the young men and women of the new generation.

The women of Baku, like their sisters throughout Azerbaijan, were once virtual household slaves, doomed to a lifetime of servility and ignorance. All that is gone. Side by side with men, the Baku women administer their city—the City Council has 212 women members—and share the obligations and benefits of citizenship.

Baku is a city old in years, youthful in mood and appearance, a colorful city that has blended the old and the new into a happier, more prosperous pattern of life.

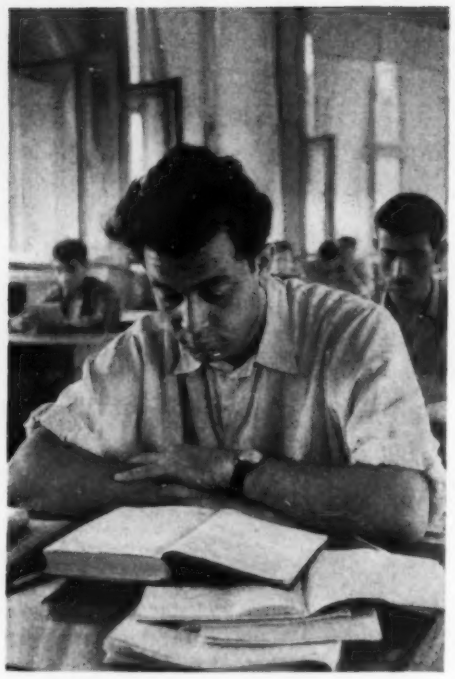
More pictures on following pages

MUSIC STUDENTS FROM ALL PARTS OF THE REPUBLIC ATTEND THE AZERBAIJAN STATE CONSERVATORY IN BAKU.

THE CITY HAS MANY DRAMA, BALLET, OPERA AND MOTION PICTURE THEATERS. THIS ONE IS ON KIROV SQUARE.

BAKU — Capital of

These are graduate engineers of the Baku Industrial Institute employed at an oil refinery. Women now work alongside men in industry, science, the arts, government and other fields, while in pre-Soviet times the Azerbaijan woman, like the oriental woman generally, was a household drudge, in total subservience to her husband. The present Baku City Council includes 212 women among its 634 members.



Student Ramiz Agayev is shown in the Baku Industrial Institute Library. Large editions of books of all types—for the scientist and the layman, for readers of fiction and non-fiction—are now published in both the native and Russian languages in this area, where forty years ago most people could neither read nor write.

THE AZERBAIJAN ACADEMY OF SCIENCES, WHICH HAS ALREADY TRAINED A GENERATION OF SCIENTISTS, CONDUCTS RESEARCH IN BOTH PURE AND APPLIED SCIENCES.

al of Azerbaijan *Continued*

ALI PASHA NAGIEV, AN OIL WORKER OF THE YOUNGER GENERATION, HAS FOLLOWED THE FAMILY TRADITION IN HIS OCCUPATION.

YELENA GRIGORYAN IS A PHARMACEUTICAL LABORATORY TECHNICIAN.

KURBAN GUSEINOV IS A FOREMAN AT ONE OF THE BAKU OIL FIELDS.

NAJAF IZMAILOV (RIGHT) IS A FOREMAN AT AN ENGINEERING PLANT.

ALL THREE ARE MEMBERS OF AN AMATEUR SONG AND DANCE ENSEMBLE.

YUNUS MAMEDOV, GYUL ALIYEV AND ALI-ZADE NASUMILI ARE RETIRED OIL WORKERS. THE LAW PROVIDES THEM WITH MONTHLY OLD AGE PENSIONS FROM THE STATE FUNDS.

BAKU — Capital of Azerbaijan *Continued*

NEW HOUSING PROJECTS APPEAR IN ALL PARTS OF THE CITY.

THE FAMILY OF OIL ENGINEER KERIMOV IS ONE OF THOUSANDS THAT HAVE MOVED INTO NEW APARTMENTS.

HANUM BEGLYAROVA IS NOW ON MATERNITY LEAVE.

YOUNG BAKU CITIZENS TAKING A STROLL WITH THEIR NURSE.

THE CITY'S NURSERIES AND KINDERGARTENS ARE STAFFED WITH COMPETENT PERSONNEL AND TAKE GOOD CARE OF CHILDREN.

Woman's Place In Soviet Life

By POLINA KOROBOVA, *Secretary, USSR Central Council of Trade Unions*

OLD RUSSIA held strictly to the ancient Roman maxim that woman's place was "at home at the spinning wheel." The laws of Imperial Russia relegated women, then nearly half the population, to a submissive position in the family and in social life. They were denied the vote and the right to hold public office. Civil service regulations unconditionally proscribed the employment of women in any administrative position.

As industry developed in Russia at the close of the nineteenth century, women emerged from their homes. Those who were able to find jobs usually did the unskilled work at a fraction of the wages paid to men. Those who could not find jobs hired out as servants. Women in professional jobs were a rarity.

In the very earliest days of the Soviet state, all discriminatory laws were abolished. Women were given full civic and economic equality. But it was not only legal guarantees that gave women the important place they hold in Soviet society today, it was the direction of movement of the society itself.

Millions of skilled workers were needed to rebuild the country's economy. By 1930, because of the rapid pace of industrialization, not only had unemployment been eliminated, but there was an acute shortage of workers in all fields. Women in increasingly larger numbers, both skilled and unskilled, moved into industry, farming, the professions, government service.

Woman's place in Soviet life today is perhaps best indicated by the many hundreds of thousands who hold public office and high administrative positions in the government. More than a hundred women are ministers and deputy ministers in the governments of the Union Republics. In the national parliament they make up a fourth of the total number of deputies.

Librarians are kept busy. Women are guaranteed equal rights under Soviet law and 53 per cent of the country's college-trained specialists are women.

Why Women Work

There are few foreigners on a first visit to the Soviet Union who are not struck by the sight of women working at the most varied kinds of jobs, from the least skilled to those requiring the highest level of educational background. And one of the questions they almost always ask, particularly of women workers in industrial jobs, is this one: "Why do you work? Do you have to?"

Klara Antipova is a foreman in the Moscow Automobile Plant. She says, "This is a question I have been asked more than once by people who know little about life in the Soviet Union. The question was put to women at our factory when the delegation from the Renault plant in France visited, and again when we made a return visit there.

"The question surprised me the first time it was put; I had somehow never thought of it before. It had always seemed perfectly natural to me that I, like any other woman—or man, for that matter—should be working at a job. It's an obligation you have to yourself and to the society you live in.

"Nobody compels me to work. It so happens that my husband makes good wages and we could manage even if I didn't hold down a job. But I can't imagine myself tied down to an apartment with no other interests but housework. I'd be bored to death in a week. That's why I work."

There are women—and men—who feel differently, of course. Here is a woman physician working in a children's clinic, whose husband is insistent she give up her work and stay home to take care of their own children—and of him. What ought she to do?

Not a typical case, and one with obviously complicating factors, but if Klara Antipova were asked, and Klara Antipova's is the prevailing social attitude on the relation between the sexes, she would be most likely to reply, "Why doesn't the husband give up his own job if he feels so strongly about it? What's sauce for the goose is sauce for the gander."

This by no means implies that all women work because they like their trades or professions and would be unhappy if they had nothing to do but take care of a family. In many cases the woman must work to meet

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Polina Korobova *began work as a spinner in the Moscow Silk Spinning Mill in 1930. Over a period of many years there she was repeatedly elected chairman of the local trade union committee. Later she was elected chairman of the Textile Workers Union.*

Today, as one of the secretaries of the USSR Central Council of Trade Unions, Korobova occupies a top-ranking trade union position in the country's labor movement. She deals especially with questions pertaining to the work of women and the safeguarding of their rights.

the family budget, especially if the family is large and the husband's earnings insufficient.

Then there are many women who are the sole support of a family. One must not forget the millions of Soviet women whose husbands were killed in the Second World War and who are now raising fatherless children. Although the government makes special provision for the support of orphaned children and war widows, income from a regular job means a better table, clothes, furniture and luxuries which would not otherwise be possible.

From Worker to Factory Manager

The transition from unskilled worker to plant director is no greater rarity for women than for men in Soviet industry.

Arma Shakhgildyan is an Armenian woman, director of a big textile mill, who started work as a twiner in the silk-spinning division of the same mill in 1930. Much the same holds true for Maria Ivanova, director of the Java Tobacco Factory in Moscow; of Antonina Smolnikova, director of the Leningrad Confectionery Factory; of Menzira Rzayeva, director of an Azerbaijan textile mill; and for thousands upon thousands of other Soviet women. In Turkmenia, where there was hardly a woman who could read or write before the Socialist Revolution of 1917, no fewer than 30 big industrial enterprises have women directors.

Needless to say, fate has not dealt equally kindly with all working women. There are many who have fallen far short of high ambitions, many who take jobs out of necessity. But the significant point is that there are no barriers for women workers in the Soviet Union. In whatever field, opportunity is wide open to the woman who wants to avail herself of it.

Every city, town or village has long "Help Wanted" lists posted. A woman who wants or needs work has no problem finding a job for which her education or experience suits her. And if she has no experience, no trade or profession, there are schools and training courses open to her, without cost, prepared to equip her for any one of a hundred jobs.

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Maria Kovrigina is the Minister of Public Health of the Soviet Union. A fourth of all the deputies in the national parliament are women.

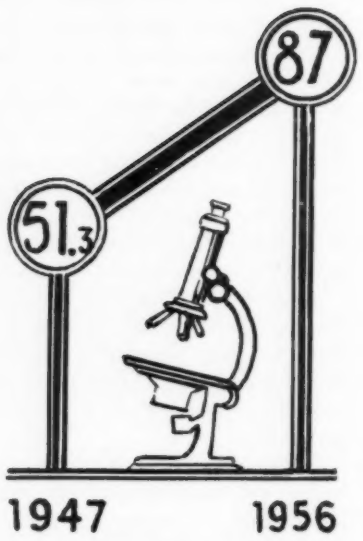
Young chemists at work in the laboratory are testing soil samples at a new hydroelectric station. They help fill the constant demand for new scientists.

A recent painting by young Irina Shevandronova has been purchased for the famous Tretyakov Gallery. Here she is shown working on a self-portrait.

Nelli Shaltykova is the daughter of a cattle breeder from the Buryat-Mongolian Autonomous Republic. Here at her chosen post, she leads the republican symphony orchestra.

Woman's Place In Soviet Life

Continued



The number of women engaged in scientific research (in thousands).

VALENTINA KANUNNIKOVA IS A SCHOOL DOCTOR. A LARGE MAJORITY OF THE PHYSICIANS AND OTHER PERSONNEL IN THE COUNTRY'S PUBLIC HEALTH SYSTEM ARE WOMEN.

In All Industries and Professions

Because of mechanization and automation of Soviet industry there are few jobs today that require the kind of physical effort of which women are incapable. What is required to run a modern machine is the skill which a person with a general education can acquire in comparatively short order. As a result, large numbers of women have taken over jobs in industry.

As for the professional areas, today there are nearly half a million women engineers and technicians in Soviet industry, principally in food processing and textile manufacture. Fifty-three per cent of all specialists with a college education are women. They comprise 70 per cent of elementary and secondary schools teachers and 35 per cent of college and university professors.

There is no area of scientific research in which women do not work. They have made major contributions to the scientific advances in both the pure and applied sciences. Forty per cent of the research staffs of the USSR Academy of Sciences are women.

Some foreign visitors to the Soviet Union express their displeasure at the fact that in their travels about the country they occasionally see women doing construction work and other heavier jobs.

It is true that, although this situation is becoming much rarer, women

Continued on page 23

Vera Krylova has assembled watches at Moscow Watch Factory for two years. She plans to enter English faculty of Moscow Foreign Languages Institute.

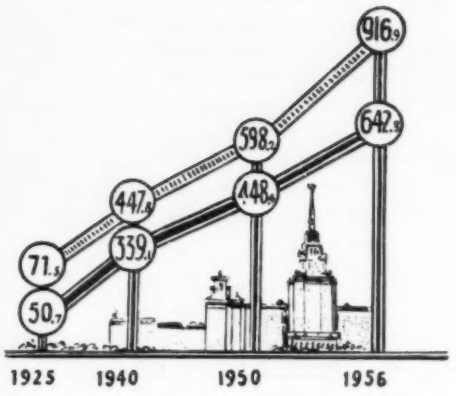
Dress-designer Lilya Belova, whose husband is a machinist, finishes dresses in a Moscow fashion house. Her customers are unanimous in their praise.

Ketevana Lomtatidze, a deputy to the USSR Supreme Soviet from Georgia, devotes time to scientific research. She holds her doctorate in philology.

Woman's Place In Soviet Life

Continued

Film star Izolda Izvitskaya won her first role while a dramatic art student. In 18 months after graduating from the Institute of Cinematography she starred in four films involving the acting of varied roles.



Women correspondence students (in thousands): top—in technical schools; bottom—in colleges.

CALF BREEDER ALEXANDRA PEDKO WORKS ON A COLLECTIVE FARM IN THE UKRAINE. MANY YOUNG WOMEN CHOOSE FARM WORK AFTER COMPLETING THEIR EDUCATION.

are still to be found here and there employed at heavy work. But to understand why, one must keep this vital fact in mind. The country's loss in man power in the Second World War was incalculably great. Millions of the youngest and fittest men were killed or crippled. Women took up the slack; there was no other way to rebuild a shattered village, a burned town, a gutted factory.

More than 1,710 towns and cities were destroyed by the Nazis, more than 70,000 villages. Both men and women labored at this enormous rebuilding job for years after the war ended. War and its aftermath left scars that do not fade quickly, even though the wounds may be healed.

Real Equality

The principle of equal rights with men "in all spheres of economic, government, cultural, political and other public activity" guaranteed to Soviet women by the Constitution would be meaningless if it did not take into careful account the special problems of women.

The law forbids the employment of women in such work as underground mining, the smelting and pouring of metals, in specified jobs on railroads and ships. On the other hand, the principle of equal pay for equal work is so deeply imbedded in Soviet law and practice that no employer would dream of offering a woman less pay than a man for the same job.

The health of expectant mothers is carefully safeguarded. Besides the annual paid vacation every worker gets, the expectant mother gets a four-month maternity leave with full pay. This is specified by law. During the early months of pregnancy, if the doctor thinks it medically advisable, the management is required to transfer an expectant mother to lighter work at the same pay.

Nurseries and kindergartens, staffed by experienced teachers and doctors, are provided for children of working mothers. Even the lowest-paid parents can afford to send their children to country kindergartens and summer camps for vacation. The fees are negligible—about a hundred rubles a month, on an average. Schooling, all the way through college and post graduate work, is free. So are medical and dental services.

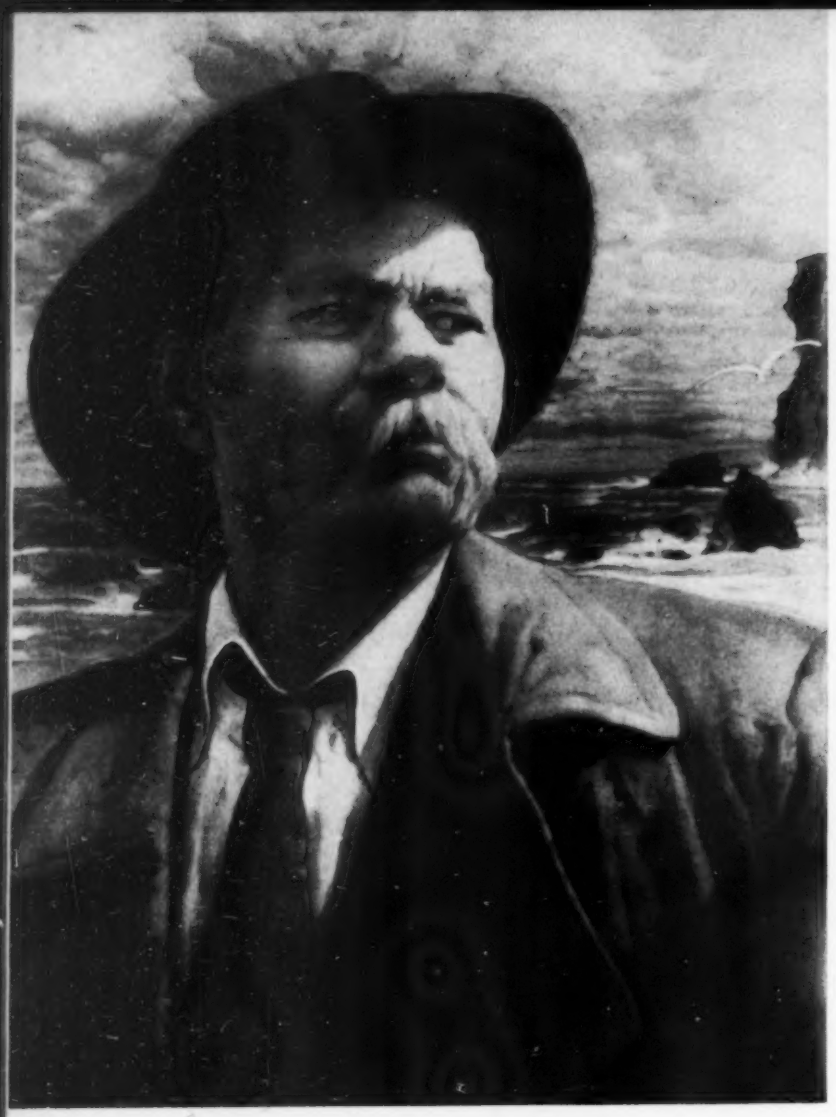
Utility-service establishments are taking over more and more of the thankless round of household chores—washing, sewing, even cooking—to give women more time to raise their children, to develop their capacities, and to make their contribution to the economic, cultural and social progress of the country.

The talented hands of women have added immeasurably to the nation's welfare. And the nation takes good care of these hands. ■

Alla Nekhoroshikh has two big interests at eighteen—aviation and cycling. She is currently enrolled as student at Moscow Aviation Technical School.

New teacher's exciting first day at school. Women occupy seventy per cent of all the teaching positions in Soviet elementary and secondary schools.

Zoya Mironova, the vice chairman of the Moscow Soviet Executive Committee, here writes her autograph for American tourists during an exchange visit.



MAXIM

On the 90th Anniversary

Maxim Gorky, great Russian writer, was born ninety years ago, on March 28.

His entire life was devoted to probing the significance of human existence and the laws of human development. "Man—it has a proud ring!" said Gorky. "Life must be rebuilt to make it worthy of man."

Gorky became known as a writer of outstanding talent in the nineties of the last century. He sang of the man of labor, of people strong of spirit and filled with resentment against what he called the "leaden abominations" of pre-revolutionary Russian life. His early romantic productions like *Old Izergil*, *Song of the Falcon*, *Song of the Stormy Petrel* and other short stories resound with a call to attain freedom and happiness.

"The purpose of literature," Gorky wrote in his story *A Reader*, "is to help man to know himself, to fortify his belief in himself and support his striving after the truth; to discover the good in people and to root out what is ignoble; to kindle shame, wrath, courage in their hearts; to help them acquire a strength dedicated to lofty purposes and sanctify their lives with the holy spirit of beauty."

In his early stories Gorky posed problems that were to trouble him all his life. The origin of many of the characters in his later novels and plays can be traced to these stories.

The Flaming Heart of Danko

By MAXIM GORKY
(1868-1936)

"LONG, long ago there lived some people in a place that was bounded on three sides by impenetrable forests and on the fourth by the steppe. They were a strong, brave and cheerful people, but evil times came upon them. Other tribes appeared and drove them into the depths of the forest. The forest was dark and swampy, for it was very ancient, and the boughs of the trees were so closely interwoven that they shut out the view of the sky, and the sun's rays had all they could do to pierce the thick foliage and reach the waters of the swamp. And wherever they reached those waters, poisonous vapors arose, and the people began to become ill and die. Then the women and children of that tribe began to weep and the men brooded on what had happened and grew despondent. Their only hope lay in getting out of the forest, but there were only two means of getting out: one of them was to go back over the road they had come, but at the end of this road strong and vicious foes awaited them; the other was to push forward through the forest, but here they would come up against the giant trees whose mighty branches were closely entwined and whose gnarled roots were sunk deep into the mire of the bogs. These stone-like trees stood silent and motionless in the gray gloom of daylight, and they seemed to close in upon the people at nightfall when the fires were lit. And always, day and night, this tribe, born to the freedom of the steppe, was walled in by shadows that seemed waiting to crush them. Most fearful of all was the wind that went wailing through the tops of the trees, causing the whole forest to sing a grim dirge to the people imprisoned there. They were, as I have said, a brave people, and they would have fought to the death with those who had once defeated them, had they not feared being wiped out in the fight: they had their ideals to defend, and if they perished, their ideals would perish with them. And for that reason they sat pondering their fate through the long nights, with the poisonous vapors rising all around them and the forest singing its mournful song. And as they sat there, the shadows of the fires leaped about them in a soundless dance, and it seemed as if it were not mere shadows that were dancing, but the evil spirits of forest and bog celebrating their triumph. And nothing, not even work or women, can exhaust a man as do despondent thoughts. The men grew weak from brooding. Fear was born in their hearts, binding their strong arms; terror gripped them as they listened to the women wailing over the bodies of those who had died of the poisonous vapors or lamenting over the fate of the living made helpless by fear. And cowardly words came to be spoken in the forest—at first softly and timidly, but louder and louder as time went on. And at last the people thought of going to the enemy and making him a gift of their freedom. So frightened were they by the thought of death that not one of them shrank from living the life of a slave. But at this moment Danko appeared and saved them from such a fate."

The old woman, Izergil, it seems, had often recounted this tale about the flaming heart of Danko. As she intoned it in her hoarse crackling voice, I seemed to hear the sounds of the forest, in whose depths these unfortunate exiles were poisoned to death.

"Danko was one of them, and he was young and handsome. Handsome people are always courageous. And he said to his comrades:

" 'Stones are not to be removed by thinking. He who does naught will come to naught. Why should we exhaust our energies thinking and brooding? Arise, and let us go through the forest until we come out at the other end; after all, it must have an end—everything has an end.'

"They looked at him and saw that he was the best man among them, for his eyes were aglow with life and strength.

" 'Lead us,' they said.

"And he led them."

GORKY

of the Writer's Birth

Even in his work of the nineties we can detect the beginnings of that new method which he was to introduce into literature—the method of socialist realism, combining a truthful portrayal of life as it is with a clear perception of what it ought to become.

"Socialist realism," Gorky declared in his report to the First USSR Congress of Writers, "affirms that life is action, is creation, the purpose of which is the continuous development of man's most valuable individual abilities for the sake of his victory over the forces of nature, for the sake of the great happiness of living on the earth."

His novel *Mother*, his autobiography *My Childhood*, *In the World*, *My Universities*, and such works as *The Lower Depths*, *The Artamonovs*, *The Life of Klim Samghin*, *Yegor Bulychov and the Others* won world fame for Maxim Gorky. These volumes have been translated into many foreign languages and are known and loved throughout the world.

The Soviet people and all progressive mankind mark the ninetieth anniversary of Maxim Gorky's birth as that of a man whose life was an unforgettable example of whole-hearted service to the progress of humanity.

The tale about the flaming heart of Danko, reprinted below, is an excerpt from Gorky's story *Old Izergil*, written in 1895.

The old woman stopped talking and gazed out over the steppe, which was growing darker and darker. Sparks from the flaming heart of Danko flared up in the distance like ethereal blue flowers that bloomed but for a moment.

"And so he led them, Danko. And they followed him willingly, for they believed in him. It was a difficult path. It was dark, and at every step the yawning bogs swallowed people up, and the trees were like a mighty wall barring the way. Their branches were closely interwoven, their roots were like snakes reaching out in every direction, and every step these people took cost them blood and sweat. For a long time they went on, and the further they went, the thicker grew the forest and the weaker grew their limbs. And then they began to murmur against Danko, saying that he was young and inexperienced and had no right to bring them here. But he kept walking at their head, his spirit undaunted, his mind unclouded.

"But one day a storm broke over the forest, and the trees whispered menacingly. And instantly it became as dark as if here were gathered all the nights that had passed since the forest was born. And the little people walked on under the big trees amid the roar of the storm, and as they walked the giant trees creaked and sang a sinister song, and the lightning flashed above the treetops, throwing a cold blue light over the forest for a brief instant, disappearing as quickly as it had appeared and striking terror into the hearts of the people. And in the cold flashes of lightning the trees seemed to be live things that were stretching out long gnarled arms and weaving them into a net to catch these people who were trying to escape from darkness. And something cold and dark and fearful peered at them through the dark foliage. It was a difficult path and the people who had set out on it grew exhausted and lost heart. But they were ashamed to admit their weakness, and so they poured out their anger and resentment on Danko, who was walking at their head. They began to accuse him of being incapable of leading them.

"They came to a halt, and, tired and angry, they began to upbraid him there in the quivering darkness, amid the storm's triumphant roar.

" 'You are a despicable and evil creature who has brought us to grief,' they said. 'You have exhausted us by leading us here, and for that you shall die.'

" 'You said: "Lead us!" and I led you,' cried out Danko, turning to face them. 'I have the courage to lead you, and that is why I undertook to do it. But you? What have you done to help yourselves? You have done nothing but follow me, without so much as husbanding your strength for the greater march. You merely followed me like a flock of sheep.'

"His words only infuriated them the more.

" 'You shall die! You shall die!' they shrieked.

"The forest roared and echoed their cries, and the lightning tore the darkness to shreds. Danko gazed upon those for whose sake he had undertaken such great labor, and he saw that they were like wild beasts. Many people were pressing about him, but he could detect no signs of humanity in their faces and he knew that he could expect no mercy from them. Then resentment seethed in his breast, but it was quelled by compassion. He loved these people, and he feared that without him they would perish. And the flames of a great yearning to save them and lead them out on to an easy path leaped up in his heart, and these mighty flames were reflected in his eyes. And seeing this, the people thought he was enraged; they thought that was why his eyes flashed so. And they instantly grew wary, like wolves, expecting him to throw himself against them, and they drew closer about him that they might seize him and kill him. He saw what they were thinking, but the flames in his heart only flared up the brighter, for their thoughts added the oil of sorrow to the flames of his yearning.

"And the forest went on singing its mournful song, and the thunder crashed, and the rain poured down.

" 'What else can I do to save these people?' cried out Danko above the thunder.

"And suddenly he ripped open his breast and tore out his heart and held it high above his head.

"It shone like the sun, even brighter than the sun, and the raging forest was subdued and lighted up by this torch, the torch of a great love for mankind, and the darkness retreated before it and plunged, quivering, into a yawning bog in the depths of the forest. And in their astonishment the people were as if turned to stone.

" 'Follow me!' cried Danko, and he rushed forward, holding his flaming heart high above his head to light the way.

"And the people followed him as if under a spell. And once more the forest began to murmur and wave its treetops in wonder. But its murmur was drowned out by the sound of running feet. The people were running ahead boldly and swiftly, lured on by the wonderful vision of the flaming heart. And even now there were those who perished, but they perished without tears and complaints. And Danko went on ahead of them, his heart flaming brighter and brighter.

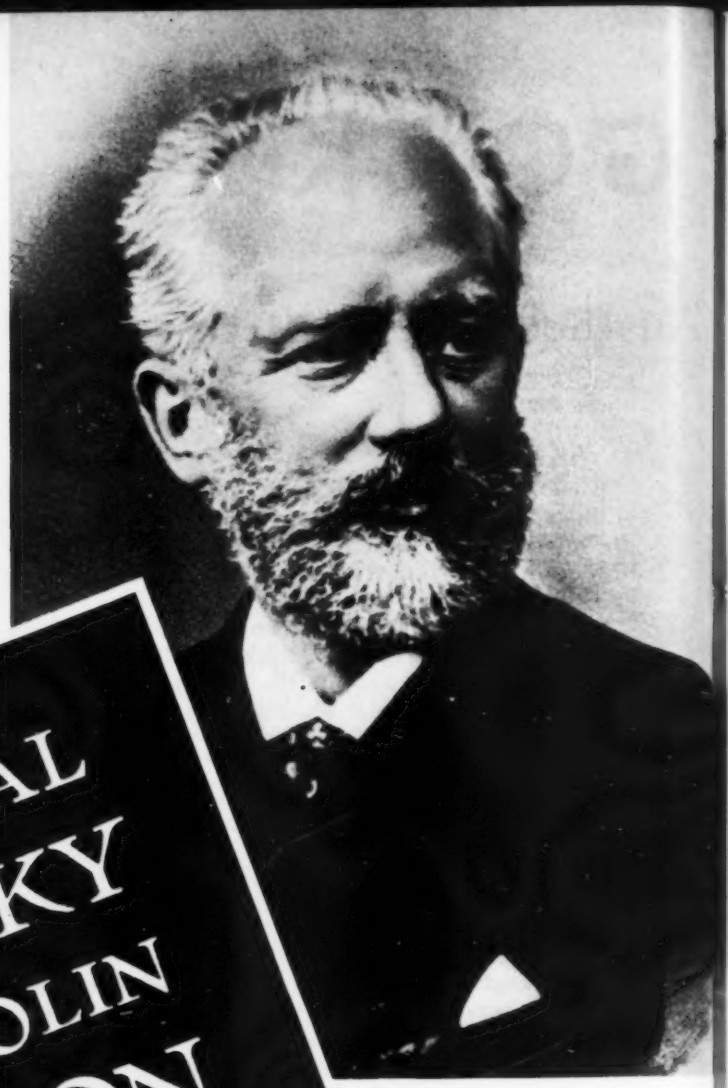
"And suddenly the forest in front of them parted; it parted to make way for them and then closed behind them, a mute and solid wall, and Danko and his followers plunged into a sea of sunlight and rain-washed air. The storm was now behind them over the forest, while here the sun shone, the steppe throbbed with life, the grass was hung with diamond raindrops and the river was streaked with gold. It was evening, and the rays of the sunset painted the river as red as the blood which poured in a hot stream from the wound in Danko's breast.

"The brave Danko cast his eye over the endless steppe, cast a joyful eye over this land of freedom, and gave a proud laugh. And then he fell down and died.

"And his followers were so full of joy and hope that they did not notice he had died and that his brave heart was still flaming beside his dead body. But one timid creature noticed it and, fearing he knew not what, stamped on the flaming heart. And it sent up a shower of sparks and went out.

"And that is why blue sparks are always to be seen in the steppe before a thunderstorm."

As the old woman finished her beautiful tale, the steppe grew incredibly still, as if overawed by the strength of the brave Danko, who set fire to his own heart for the sake of his fellow men and died without seeking the least reward for what he had done. ■



INTERNATIONAL TCHAIKOVSKY PIANO AND VIOLIN COMPETITION

TO BE HELD
IN MOSCOW
MARCH–APRIL
1958

"This contest will honor a composer whose music belongs to all mankind"

—says Dmitri Shostakovich,

Chairman of the Organizing Committee

This statue of the great composer greets the visitor as he reaches the entrance to the Grand Hall of the Tchaikovsky State Conservatory in Moscow.

IN HONOR of Pyotr Ilyitch Tchaikovsky, whose influence upon music was world-wide, an international piano and violin competition is being held in Moscow during March and April.

Tchaikovsky composed in almost every musical form—opera, the ballet, symphony, cantata, chamber music, art song, concerto. One is hard put to think of a single form to which he has not contributed.

His concertos for both violin and piano form a preeminent part of the concert repertory. Their wealth and depth of emotion have moved concert-goers the world over. His work was the synthesis of emotion and intellect that characterizes all great art.

His memorable writing on music, which covered a period of ten years, reflected his scope of interest and wide erudition. He took an active and leading part in the musical life of the period. As director of the Russian Music Society, a post he assumed in 1885, he did much to develop musical style and technique and to train young musicians.

He welcomed new talent and fine musicianship. He was a champion of the forward-looking in music, of everything that expressed man's profound aspirations and his search for beauty.

He conceived of music as belonging to mankind, not to one country or another. It was a character of his tours that when he played abroad his programs featured Russian music, and when he played at home, he performed the work of non-Russian composers.

It is to these high purposes of Tchaikovsky that this contest in his honor is dedicated.

Its aim is to foster young talent, and the age limits, therefore, are from 18 to 30. Auditions will be public and will be held in the Grand Hall of the Tchaikovsky State Conservatory in Moscow. They will be judged by a panel of distinguished pianists and violinists invited from many countries.

The works to be played will include, along with those of Tchaikovsky and other classic and modern Russian composers, compositions of Bach, Chopin, Mozart, Liszt, Paganini and Wieniawski. Each contestant will also perform a work by a modern composer, preferably one from his own country.

There will be sixteen prize-winners. The first prize in each group, for piano and violin, will be 25,000 rubles and a gold medal. The first three winners will make concert tours of the Soviet Union.

Music, as Tchaikovsky's life and work have phrased it for us, has no national boundaries. Its compass is as wide and unlimited as the range of the human spirit itself. It is our hope that this contest, honoring a composer who wrote for all people, will tie more closely the bonds of friendship between nations and promote mutual understanding. ■

VIEW INSIDE THE GRAND HALL OF THE MOSCOW CONSERVATORY WHERE THE INTERNATIONAL TCHAIKOVSKY PIANO AND VIOLIN COMPETITION WILL TAKE PLACE THIS SPRING.

The Tchaikovsky Museum

The Tchaikovsky Museum in Klin, near Moscow, was the composer's country home. There, during the year before his death in 1893, he composed his last symphony, *The Pathétique;* the Third Piano Concerto; 18 pieces for the piano and six songs. Students of music from every country in the world have visited this national shrine to study the composer's manuscripts and memorabilia.

Tchaikovsky was fond of walking alone along this rustic path. He spent the last fifteen years of his life between his tours—he visited America and England—and composing. It was to these beloved country surroundings that he returned to create some of his finest work. Here he wrote the operas *Iolanthe* and *The Enchantress;* the ballets *Sleeping Beauty* and *The Nutcracker;* and his *Manfred Symphony.*

Tchaikovsky's study at Klin,
furnished as it was when he worked
there. At the Becker piano, presented
by the makers in 1885, the composer
wrote many of his compositions.
Tchaikovsky was uncompromising
in judgment of his own work. He was
convinced he had never mastered form.
Yet his longer musical works
are among the very finest of their kind.
His melodies are incomparably beautiful
and his orchestrations most
imaginatively inventive.

Tchaikovsky liked to work in this sunny corner in good weather.
From the bay window he could see the countryside he loved so much.
His Klin house was a wish come true. As early as 1885, he
wrote in his diary notes: "All my thoughts at present
are centered on finding a place of permanent residence
somewhere in a village near Moscow."

The composer's desk.
The archives at Klin contain
a wealth of material for the study
of Tchaikovsky's work.
His house has been maintained
as a national museum since 1894.

Tchaikovsky's bedroom at Klin.
The composer's life was not a happy one.
His Sixth Symphony, *The Pathétique*,
with its tragic overtones,
is in a real sense
a personal statement.
He died at the age of 53,
a few days before the symphony
was to have its first performance.

THE LOCAL REPLACES GENERAL ANAESTHESIA FOR MAJOR OPERATIONS, SIMPLIFYING THE SURGEON'S PROBLEM.

HEART SURGERY

UNDER LOCAL ANAESTHESIA

By Alexei Yugov

WE are in the Vishnevsky Institute of Surgery in Moscow witnessing an operation on the heart. The patient is a young woman with a lovely Ukrainian face. The operation is well advanced. We can see into the opened thoracic cavity, watch the lungs pumping and the heart beating but the patient is awake, her eyes open. There is more curiosity and surprise in her look than fear—and no slightest indication of pain. She even smiles when one of the white robed physicians talks to her.

There is no anaesthetist in evidence nor any of the anaesthetic apparatus we would expect. Nothing more than syringes of novocain that are being handed to the operating surgeon with quick regularity, one after another.

The surgeon makes an incision in the heart. His finger probes the beating organ, parts the adhesions, the scar tissue which has been constricting the opening between the left atrium and the left ventricle of the heart.

These cicatricial adhesions are a very serious aftereffect of endocarditis. They do not respond to treatment. The patient's life can be saved only by surgery. The young woman has this moment been saved from what would have meant certain death only a few years ago.

Modern cardiac surgery has moved a long way since the turn of the century. It was Dr. Albert Billroth, the most eminent European surgeon of his day, who issued the famous dictum: "The surgeon who dares sew up a cardiac wound deserves to lose the respect of his colleagues." He thought it murder. He would probably have been unable to find language strong enough had anyone suggested the possibility of operating on the heart.

Soon after this formidable statement, however, Surgeon Podrez of the Ukrainian city of Kharkov dared to sew up a cardiac wound—successfully—for the first time anywhere in the world. Professor Zege-Manteufel of Tartu University in Estonia followed by probing the cavity of the heart of a twenty-year-old girl to extract a bullet—successfully. Subsequently Terebinsky and Dmitriev, Soviet surgeons, were the first to make successful experimental studies of surgical treatment of heart diseases.

In the last ten years, cardiac surgery in the Soviet Union has made great strides. The operation we described above is a classic in the field. It was performed by Dr. Alexander Vishnevsky, son of the founder of the Institute of the same name, and was the first time cardiac surgery had ever been performed without general anaesthesia; only a local anaesthetic was used, a weak solution of novocain.

A New Method

The elder Vishnevsky was the founder of the school of surgery based on physiology, developed out of the work of Ivan Pavlov on the nervous system. The physiological approach to surgery implies consideration of the total organism rather than of the one diseased part.

The surgeon, Vishnevsky taught, must proceed from the whole. He must think in terms of a total compensation of all the affected functions as opposed to the excision of the single diseased organ. This is sparing, careful treatment of living tissue and considers the condition of the patient not alone during operation but subsequent to it also.

Following many years of intensive research Vishnevsky found a new technique which in most cases could replace general with local anaesthesia, and in addition, helped reduce inflammation.

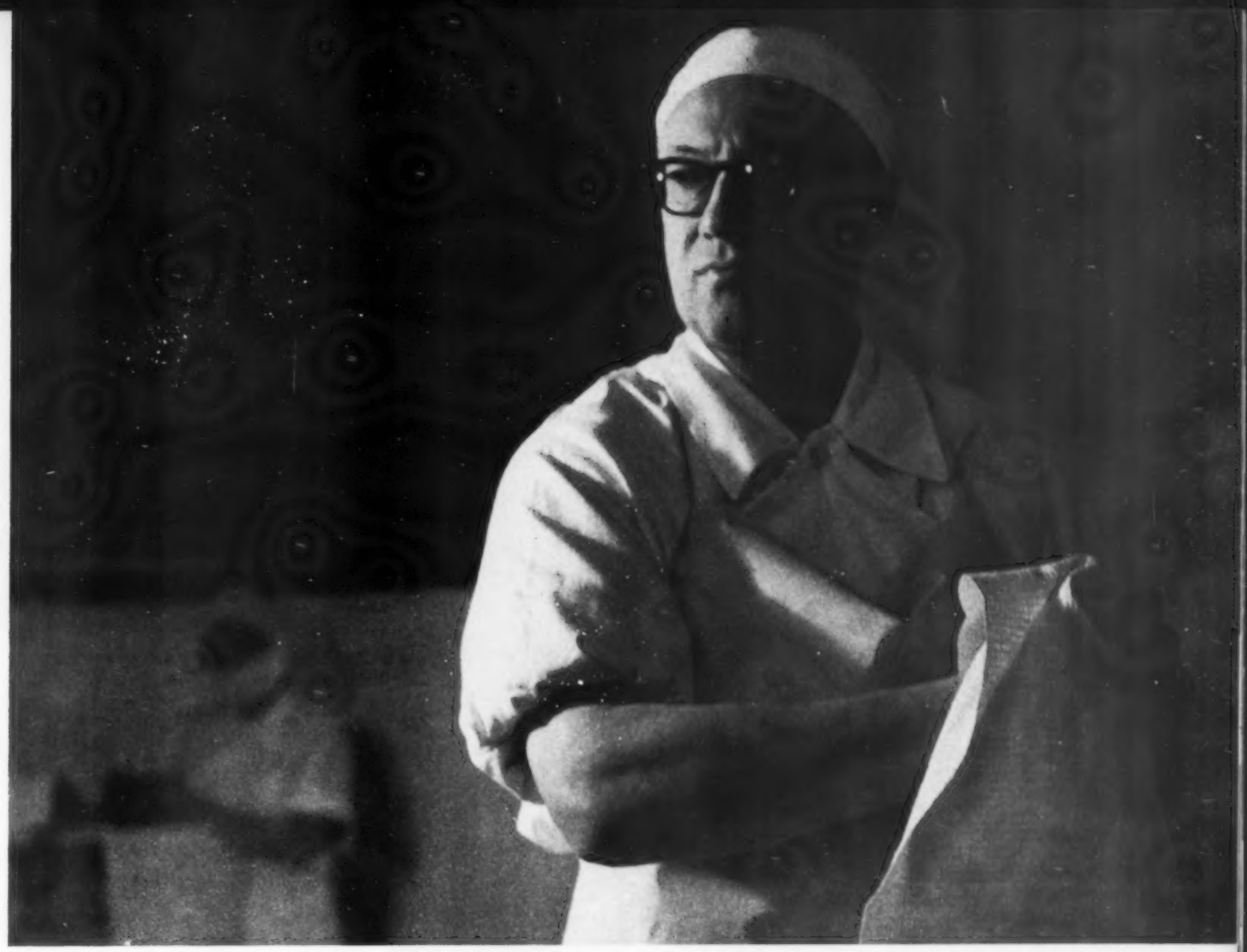
With the older technique, called conductor anaesthesia, the nerve was groped for with the needle of the syringe and the surgeon tried to inject novocain so that it would anaesthetize the general region and thereby reach the nerve. Vishnevsky used a much more dependable technique. He made use of what is known as "invested structure" of the human body.

The muscles, large neuro-vascular bundles and internal organs are invested in their membranes. If a weak solution of novocain is pumped under these membranes, the anaesthetic that is sent ahead of the surgeon's scalpel will find the nerve trunk and will block sensitivity.

The Vishnevsky technique, relatively simple to follow, makes it possible for the competent surgeon in the small hospital to perform major surgery. It does not require the big, up-to-the-minute operating room or the top-ranking operator.

Many kinds of surgery, some very major,

A VAST AMOUNT OF EXPERIMENTAL WORK IN MANY LABORATORIES GIVES DATA ON FUNCTIONS OF THE HEART.



ALEXANDER VISHNEVSKY, SON OF THE NOTED SURGEON, CONTINUES HIS FATHER'S SCHOOL BASED ON PHYSIOLOGY OF THE WHOLE BODY RATHER THAN JUST THE DISEASED PART.

can be performed with the Vishnevsky technique, under the most difficult of conditions. Not too long ago Ponomaryov, one of Vishnevsky's pupils, successfully performed a critical and urgent abdominal operation under local anaesthesia on an ice floe at one of the North Pole stations.

The new method of surgery developed by Vishnevsky requires that it be integrated with all branches of modern medicine. In the Institute of Surgery that integration is demonstrated in its varied divisions and laboratories, including one for experimental animal surgery.

The laboratory headed by Professor Shik, for example, is doing research on a wide range of problems connected with physiology. The staff members here study not only the changes in physiological processes during surgery, but also the effect on the organism of the novocain block or the protracted therapeutic sleep. Another subject of their investigation is hypothermia, the artificial lowering of the patient's temperature by five to six degrees below normal before operating which sometimes saves patients undergoing cardiac operation. With cooled blood the organism needs less oxygen and can endure an exclusion of the heart for periods as long as five minutes. The laboratory also studies problems of compensation of functions after major surgery with special attention to the part played by the cerebral cortex.

Engineering and Surgery

The biochemical laboratory, directed by Dr. Konikova, studies metabolism with tracer atoms and X-rays. This is modern surgery calling on the latest findings of automatics and electronics.

The roentgenology department is headed by Professor Mazayev. He is one of the scientists who developed roentgenovasography. With this method a special contrasting substance can be introduced for a short period into the blood or lymph vessels, and even the heart cavity, without harm to the organism. The vessels set off by this contrasting substance are projected on a screen and can then be examined and studied.

The modern equipment of physiological surgery is the combined creation of medicine and engineering. Very fine instruments—the blood pressure meter and the microscopic electrode of the electrocardiograph—can be inserted through the large vessels of the patient's arm into the cavity of the heart. If need be, the surgeon can take a blood sample directly from the beating heart.

With present techniques, the surgeon can take the time he needs for the most delicate work, since he has the opportunity to disconnect the heart for a whole hour. He no longer has to work at top speed and with what has been termed "circus-like virtuosity."

The use of the combined talents of the engineer and surgeon can be seen at work in an extraordinary institute in Moscow recently founded. It is headed by Dr. Ananiev who trained under Vishnevsky. This institute is the pride of Soviet medicine and is visited by numbers of foreign physicians almost daily.

The staff is made up of engineers, physicists, surgeons and physiologists, who together work on newly developed surgery equipment. Their joint work has produced the latest and most perfect instrument for artificial blood circulation, known as the "heart and lungs apparatus." Experimental tests have been so successful that the new apparatus is now being used by surgeons of the Vishnevsky Institute, one important additional tool for healing which Soviet research has placed in the hands of the surgeon. ■

(Abridged from the newspaper *Izvestia*)

PAMIR—*th*

By Andrei Ionov
and Victor Ruikovich

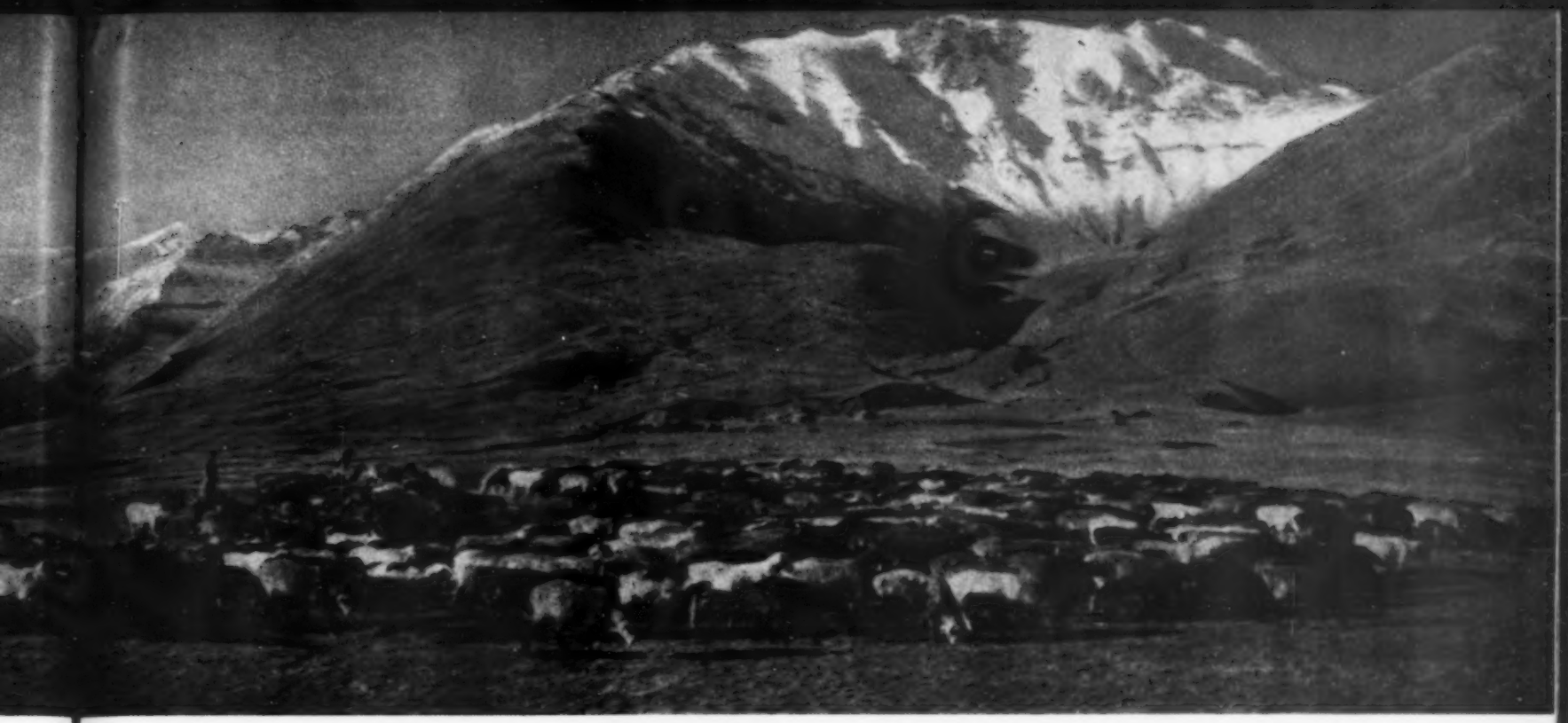
NESTLED amid snow-capped peaks that pierce the clouds to more than 20,000 feet above sea level lies a region known for ages as "The Roof of the World." It is the Pamirs, a part of the Tajik Soviet Socialist Republic. Criss-crossed by the rocky might of forbidding and all but inaccessible mountains, this region borders on China and Afghanistan, with some of the ranges, it seems, rubbing shoulders with summits of nearby India.

This long obscure land is peopled by hardy mountaineers, hunters and peasants. Some ninety per cent are descendants of Tajiks whose ancestors fled to the Western Pamirs to escape the raids of plundering enemies. Similarly isolated Kirghiz tribes took up their abodes in the Eastern Pamirs. They all settled in the river valleys and plateaus, separated from each other by ice-cloaked ridges and deep abysses, isolated from the rest of the world.

The outside world first learned of this land from the seventh century Chinese traveler Hsuan Tsang. His reports were followed about six hundred years later by those of the Venetian explorer Marco Polo.

Until late in the nineteenth century, however, little more was known of the Pamirs than

TRAVELING ACROSS THE INACCESSIBLE PAMIR RANGES.



THERE ARE MANY RICH PASTURES ON UPLAND PLATEAUS AND IN RIVER VALLEYS AMID SNOW-CAPPED MOUNTAINS.

—the Roof of the World

centuries previously. In 1871 the Russian scientist Alexei Fedchenko explored the Pamirs, and the map he prepared gave the world its first accurate knowledge of these ranges. He was followed by other Russian explorers and by 1895 the first road was laid to Khorog, the present center of the area.

Planned exploration of the Pamirs by scientific expeditions began in 1928 to fill in the blank spots on the map. Hundreds of investigators arrived, seeking out metal and mineral sources, making experiments with agriculture and livestock. They were followed by caravans loaded with seeds, foodstuffs, manufactured goods of all kinds, medicines and building materials.

By this time the Tajiks and Kirghiz living in the Pamirs had united. In 1924 they elected their first common Regional Soviet. With a population of 62,000 and covering an area of 23,000 square miles, the Pamirs became the Gorno-Badakhshan Autonomous Region.

In 1928 the first moving picture performance was held in Khorog. Today many collective farms have their own movie facilities, and the regional drama theater in Khorog regularly stages plays by Ostrovsky, Molière and Shakespeare. *Continued on next page*

PAMIR HIGH SCHOOL STUDENTS GET NEW BOOKS PRINTED IN TAJIK AND KIRGHIZ, THEIR NATIVE LANGUAGES.

BACK HOME AFTER THEATRICAL SCHOOL IN MOSCOW.

Khorog, regional capital of the Pamirs peeks out from the green orchards at 7,500-foot elevation.

PAMIR — *the Roof of the World*

Continued

The lone newspaper first issued in 1931 has been followed by six others in the Tajik, Kirghiz and Russian languages.

In 1929 the first airplane landed in the region to the wonderment of the mountaineers, many of whom had no idea of what a wheel looked like, and in 1931 the first automobile came by camel caravan after toiling over the mountain passes.

Where formerly it took a caravan a month to travel to Khorog, now a scheduled airliner makes the flight in an hour. Good roads provide communication between the various villages and towns, promoting their economic and cultural development.

It was in 1931 that the first agronomist reached the region and pioneered in scientific potato raising and horticulture. By 1936 the Pamir Biological Station was established, and the Pamir Botanical Gardens were set up in 1940. These are the only high altitude scientific research institutions of their kind.

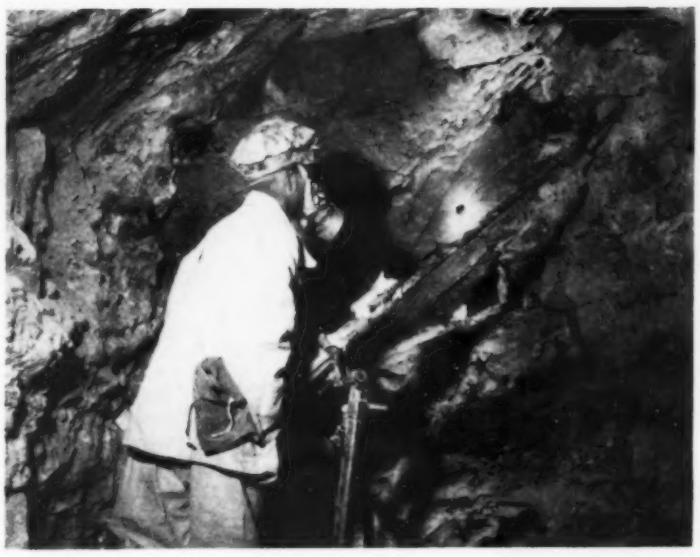
Where formerly the mountain folk grubbed out a meager living from the soil and their animal husbandry, today collective farms grow potatoes, cabbage, tomatoes, corn, grapes and improved varieties of wheat—crops that usually do not thrive at such altitudes. Barley evolved at the Pamir Biological Station is cultivated at 13,000 feet.

The first hydropower plant was put into operation in 1940 at Khorog and today such stations operate in the most remote areas. More new schools and homes are springing up and new farmland is being won from the mountains with the help of the state machine and tractor station.

The people of the Pamirs have been able to match their economic advances, rapid as they have been, with parallel gains in the field of culture. There is not a collective farm in the Pamirs without its own school and library. Illiteracy has been eliminated. Hundreds of local people have had special training or a college education and now work at the power stations, in schools and hospitals, forestry enterprises and livestock farms. ■

Students of Khorog Teachers Training Institute. Hundreds of Pamir people have college degrees.

Science and mechanization have made it possible for Pamir farmers, who only recently were simple herdsmen, to grow a wide variety of crops.



Many Pamir men are miners. Power speeds mining of mica, iron ore and rock crystal. Also mined in the area are gold, coal and various other minerals.

Highway construction was finished under adverse conditions and facilitated economic development.

Perched on a 14,000-foot peak, this observatory aids scientists to make accurate weather forecasts.

BORIS ZELENSKY IS THE SOUL OF HOSPITALITY. AT THE LEFT IS HIS POSTER FOR THE FILM *CARNIVAL NIGHT*.

Artists'

By Boris Korolev

NUMBER 5-7 Upper Maslovka Street in Moscow is Artists' Town. Ring any doorbell and it will be the studio or apartment of an artist or sculptor.

I rang the bell of Studio No. 41 on the seventh floor—Boris Zelensky, the film poster artist. Zelensky is an old friend, the soul of hospitality. He is tall and powerfully built and his magnificent crop of hair is as tangled as the plot of a detective novel. He seems never to have acknowledged the invention of the comb.

Studio 41 is divided. Zelensky works in 41a and his neighbors, the Nechitailos, have 41b.

In this building at 5-7 Upper Maslovka St. in Moscow are apartments and studios for artists.

Art Council of Moscow's painting studios sets prices on pictures commissioned by workers' clubs. The National Art Foundation helps its 16,000 members sell their murals, mosaics, sculptures and paintings.

s' Town

Painting, sculpture and the applied arts are highly esteemed in the Soviet Union. So is the artist. His work has a large and welcoming audience and his livelihood is secured by the National Art Foundation established in 1940.

The Foundation has ample funds at its disposal, derived from its 130 varied enterprises and from membership and agents' fees. Its fee for selling art work is a low 2 per cent.

The Foundation performs many functions. It obtains commissions for its 16,000 member artists from municipalities, museums, public organizations, and individuals for varied art work—murals for public buildings, mosaics for subway stations, sculpture for international exhibitions, paintings for museums and traveling exhibitions and portraits for individuals. Its contracts with artists total 500 million rubles annually.

The Foundation organizes shows and art contests. It lends money to young people newly graduated from art schools to carry them through the early years of independent creative work; a million rubles a year is spent for such aid.

The Foundation has 27 Art Houses and cottages in the country's resort areas for vacation use by working artists. It owns buildings like the one described in this article in 66 cities throughout the country which provide studios at low rentals.

During the five years between 1951 and 1956 it gave free of charge to needy artists 190 apartments, 350 individual studios and 26 workshops. The Foundation plans in the period from 1957 through 1960 to build another 460 apartments, 600 studios and several exhibition galleries.

Since its inception the appropriation for the work of the Foundation has risen annually from 122,000 rubles in 1940 to 37 million rubles in 1957.

Zelensky's studio is quite small—86 square feet in all—not too much room to swing the proverbial cat, but enough for one person. He pays 28 rubles a month rent; the usual rent for studios averages about a third of a ruble per square foot.

Zelensky does film posters. Not the huge ones that run across the length of a building, his are colorful flyers or illustrated folders that are printed in thousands of copies to announce a coming production.

The way Zelensky talks about it, the work takes skill and talent. "It isn't just a matter of copying a still from a film," he says. "Of course there are artists who hold on to a photo like a baby does to his highchair. Pull it away and he'll fall down. I have to work from life, I can't work any other way. Here are these sketches of a horse, twenty of them. I'm trying to catch the turn of the head. I've got piles of portfolios with preliminary sketches like that. It takes an artist, a good one, to make a decent film poster. It takes good drawing, good color, good composition. And each poster is special, needs special treatment to suit the particular film."

A conversation with Zelensky is a monologue. Sometimes you can get a word or two in edgewise. But he has things to say and his gesture and speech are as colorful as his posters. Even a casual glance at his posters shows the work of an artist—a very good one. He works with both pencil and brush, in practically every medium.

A Family of Painters

The Nechitailos' studio next door was larger than Zelensky's, with a big window that ran almost the whole length of one wall. The family has an apartment on the same floor.

Continued on next page

Dmitri Barkalov and Vladimir Zakharchenko (at the easel) are two of the three young artists sharing Studio 11. They all graduated from the Surikov Art Institute.

Vasili Nechitailo specializes in portraits, and his wife Maria in landscapes. They share a studio but always work independently.

YEVGENI KIBRIK IS A DISTINGUISHED BLACK-AND-WHITE ARTIST. ROMAIN ROLLAND HAS EXTOLLED HIS WORK.

Artists' Town *Continued*

Vasili is a portrait painter, his wife Maria does landscapes and genre pictures. I asked whether they had ever worked together on a painting. "I should say not," Maria laughed. "If we had, we'd have divorced each other long ago. Of course we discuss each other's work. It's always helpful to get another artist's reaction."

The Nechitailos have been married for twenty years now, happily, from the looks of it. They have three children. Dmitri is seventeen, Xenia is fourteen and Sergei is three. The two older children take after their artist parents, both are studying art.

"Do the children hamper your work?" I asked Maria.

"Not at all. The first two years after Sergei was born I managed to paint three big pictures —a lot of work. And they were all accepted for the USSR Exhibition."

The Nechitailos live comfortably. They spend about 4,000 rubles a month. The money comes from the sale of pictures plus Vasili's salary. He gets 2,000 rubles a month from the state studios—called the Art Combinat—started in 1956 under the National Art Foundation.

Twenty artists—one of them Nechitailo—get this monthly salary. To balance the account they either turn over one of their finished pictures to the Art Combinat or accept a commissioned work from it. This procedure is experimental. If the experiment justifies itself, it will be extended to other artists.

Contracts and Commissions

The Art Council of the Combinat meets twice a week. At the first meeting art projects commissioned by museums, public agencies, workers' clubs and private individuals are assigned to artists. Contracts are signed with the Combinat and advances paid.

The second meeting takes up what is called "fixed accounts." These are funds paid out by the Combinat itself for a picture which the artist has in mind and which has not been commissioned by anyone.

The Combinat draws up a contract and pays advances on a picture which may or may not sell. It is buying a Pig in a Poke, taking a calculated risk, banking on its business acumen and its judgment of the artist's previous work. During the first ten months of 1957 the artists sold the Combinat 750 such pictures and received 1,788,000 rubles in payment.

Nechitailo said that he liked the system because it guaranteed him a fixed monthly salary. His income did not have to depend on the number of pictures he sold or when he sold them. "I'm going to turn in this painting," he pointed to a canvas. "It will probably be priced at 18,000. The Combinat will get back the 12,000 rubles it paid me these last six months. I'll get the difference—6,000."

Young Artists

Studio No. 11 is occupied by three young artists, all graduates of the Surikov Art Institute, although of different graduating classes. It's a large studio and they are pleased with it, except perhaps for Dmitri Barkalov who wants to paint large canvases and feels he's going to be cramped.

"I could use a studio of this size all by myself," says Dmitri. It's not that he's antisocial, he hastens to explain. When he graduated from the Institute he worked in Siberia for a while. It's a big wide-open country and he brought back sketches and ideas for big paintings.

One of the other young artists is Vladimir Zakharchenko. I asked him what he had been paid for the pictures he'd sold in the last few years. His best painting, one with a historical theme, about one of the organizers of the Soviet state, Felix Dzerzhinsky, was sold for 23,000 rubles; his "Sorrow" and "The Races" brought 10,000; "Kazakhstan Steppes" sold for 8,000; "Haymaking" and "The Rooks" for 12,000; and "Eventide" for 5,000. Some of his pictures were bought by the Purchasing Commission for Museums, others by the Fund for Stationary and Traveling Exhibitions.

Illustrator

In Studio No. 40 I found the very well-known illustrator Yevgeni Kibrik. He was in the middle of a conference with a screen writer, discussing a film to be made on his work.

"They're going to have to use an extra-wide screen," the artist laughed. He is one of the best of Soviet black-and-white artists, illustrator for Romain Rolland's *Colas Breugnon* and Charles de Coster's *Legend of Til Eulenspiegel*. His are brilliant translations of words into pictures.

Romain Rolland wrote of him, "I am delighted with the broad-shouldered strength of his characters, the zest for life and the luminous atmosphere which suffuse his illustrations."

Kibrik is a hard and busy worker. There were some dishes around and a few kitchen utensils so that I gathered he spends long hours in the studio and does his own simple cooking to save time.

Kibrik is a reticent man and I had to extract the information that he has almost finished the preparatory work for illustrating Shakespeare's *Othello*. He knows Shakespeare well, has read everything by him and a great deal about him. He doesn't go along, he told me, with the approach to *Othello* adopted by the film director Sergei Yutkevich and some other interpreters of Shakespeare, and he takes strong issue with Shakespeare illustrations done by some artists.

Mural Painter

On the floor below is Georgi Rublyov's frescoe studio. He did the murals for one of the Leningrad subway stations and the decorative ceilings for some of the new Moscow hotels. He works with his son, Igor, a graduate of the Institute of Decorative and Applied Arts.

The veteran artist warns his students that a mural painter has to combine the talents of a fly and a steeplejack, not to speak of having

the patience of a saint. With his son he spent a whole year painting the 800 square foot ceiling of the lobby of the Hotel Ukraine.

Rublyov loves Russian marbles—"they have every color and shade"—jasper, glass, clays. He showed me his "palette," a roomy cabinet with dozens of jars. "They're all Russian pigments, most of them came from soil under the Ferapont Monastery—just look at these ochers!" He mixes his own paints, after the formulas of ancient Russian icon painters.

For the USSR Art Exhibition of 1957, dedicated to the 40th anniversary of the October Socialist Revolution, Rublyov did an 80-square-foot mosaic picture he called *The Aurora*, about the legendary cruiser which played a prominent part in the Revolution. He made it of insets of jasper and marble. It took eighteen months to work the pieces into the pattern.

Now Rublyov is preparing for a retrospective show of thirty-five years of his work.

"What do you have to do to organize a one-man show?" I asked him. "Do you have to have twenty-five or thirty-five years of work behind you?"

"No," he answered, "of course not. An artist has a show when he has enough work to exhibit. If he hasn't enough done, he can exhibit at a group show with his friends."

There are many galleries in Moscow, and they're rarely empty. The Kuznetsky Most galleries are reserved for the young artists. The Kropotkinskaya galleries usually exhibit the academicians. The first work of budding artists is shown at the galleries of the Art Workers Club. Then there are museums and community centers of all sorts which hold exhibitions.

"It's not hard at all for an artist to get his work shown," concludes Rublyov.

Sculptor

The last studio I visited belonged to a sculptor, Yekaterina Belashova. The sculptors' studios are all on the street floor. Some of the huge slabs of granite and marble were lying in the courtyard, waiting to be carried in. Belashova's was a large high ceilinged studio, bare except for great slabs of stone, barrels of clay and plaster, hammers, chisels—the workshop of a sculptor.

Belashova is now working on a statue of Pushkin, a commission from the Ministry of Culture, to be erected in Mikhailovskoye Village, where the great poet lived. Her assistant is a former student, Vadim Shilov. The contract specifies that Shilov is to receive part of the fee agreed upon.

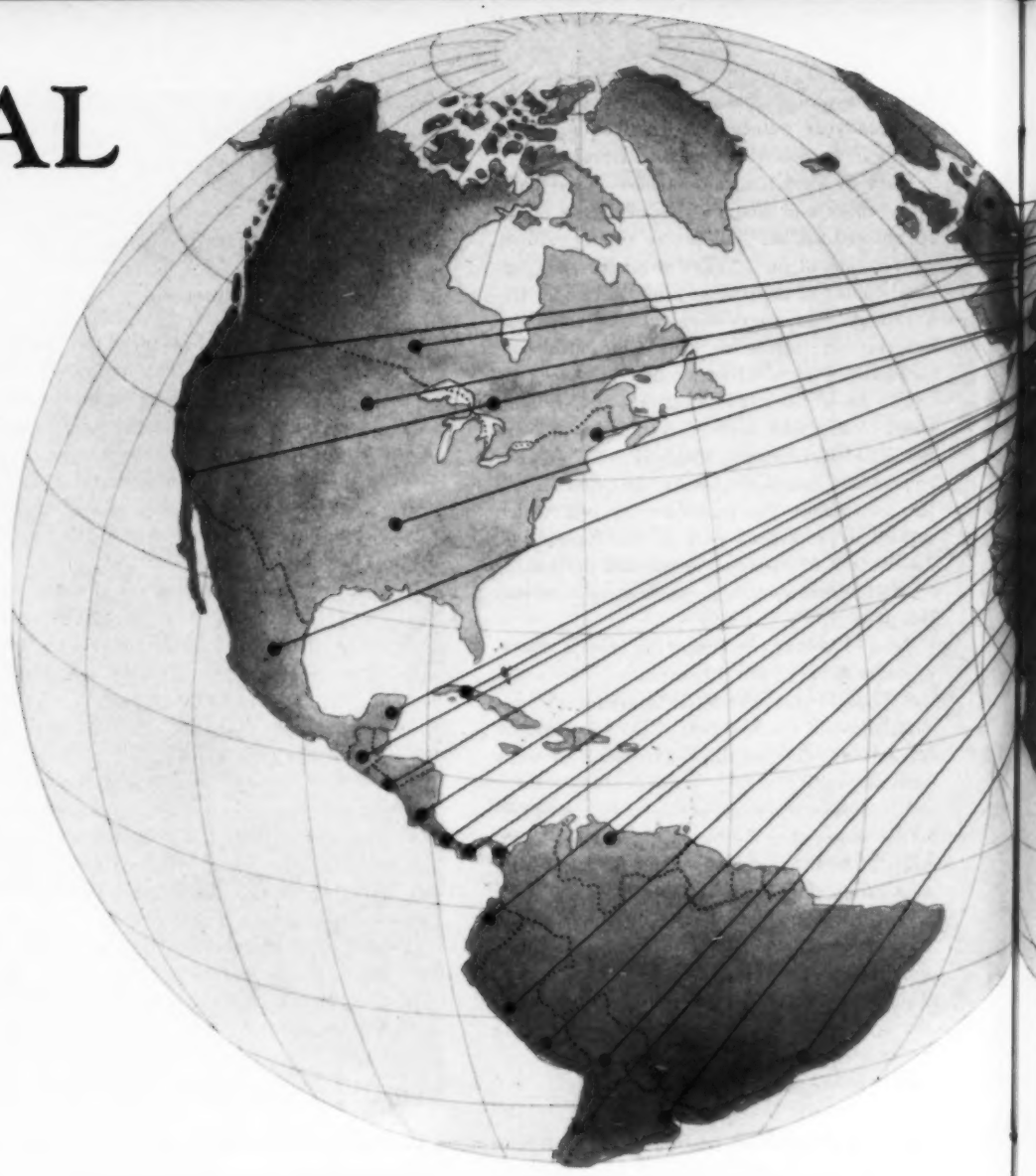
Our interview was coming to a close when a messenger brought Belashova an article for *Iskusstvo*. She manages to squeeze into her tight schedule the job of editing this monthly art magazine which is circulated throughout the country.

I wanted to be welcome the next time I knocked at the door, and so I decided that it was time to take my leave of this kind but busy woman. ■

Sculptor Yekaterina Belashova is working on a statue of poet Pushkin for Ministry of Culture.

GEORGI RUBLYOV MAKES CONTOURS OF A PICTURE IN METAL AND THEN FILLS THE SPACES WITH STAINED GLASS, AN ORIGINAL METHOD PRODUCING DELICATE COLOR SHADINGS.

A GLOBAL SEED BANK



By Moisei Yeselev

SEEDS OF ALL KINDS FROM EVERY CORNER OF THE GLOBE ARE CATALOGUED AND PRESERVED IN THE REPOSITORY OF THE USSR PLANT GROWING INSTITUTE IN LENINGRAD.

THIS MAP SHOWS WHERE INSTITUTE EXPEDITIONS HAVE GATHERED SEED SAMPLES.

THE MAIL BRINGS SEED PACKETS ALMOST EVERY DAY.

THERE is a variety of explorer about whom most people hear very little. He travels to places known and unknown, to the out-of-the-way corners of the world. He climbs sheer cliffs and deep canyons, cuts his way through dense jungle in search of new and rare seeds that will grow better wheat, barley, corn, soybean, rice, potato and fodder.

These are hazardous expeditions, many of them to places that no men other than aborigines have been to before. Soviet botanical explorers found new varieties of wheat in parts of Ethiopia considered inaccessible. They discovered sixteen species of potato, previously unknown, in the wild regions of Peru, Chile and Mexico.

The priceless finds of these scientist-explorers come to the USSR Plant Growing Institute in Leningrad. There they are catalogued and filed in row upon row of cabinets that reach from floor to ceiling—one of the world's most precious banks of food seeds.

The collection was begun in 1905 by Russian botanists and agronomists. But with very limited funds and resources available to them, the collection remained small until the Soviet period, when large sums were allocated for the project with the aim of collecting seed specimens of every food plant grown, domesticated or wild.

Botanical Expeditions

Nikolai Vavilov, a distinguished Soviet botanist, led the early expeditions, outfitted by government funds, in the twenties. Since then surveys of plant resources and botanical expeditions have taken botanists from the Institute in Leningrad to the most widely scattered parts of the globe.

A criss-crossed map of the two hemispheres hangs in the Institute. It charts travels of the Institute botanists in search of rare plants to 65 countries. Academician Pyotr Zhukovsky has searched for plants in Turkey, Mesopotamia, Syria and Argentina; Dr. Yevgenia Sinskaya has studied Japan's plant life; Academician Sergei Bukasov has led expeditions to the high plateaus of South America. Every year expeditions bring back thousands of plants to be added to this great repository.

During the Second World War, when the Nazi armies began their drive toward Leningrad, these men of science carried the precious boxes of seeds on their own shoulders far behind the lines. Some of them died to safeguard the collection. It was brought back to Leningrad after the war. Since then it has been greatly enlarged.

New Strains of Wheat

The Soviet Union, with its great diversification of growing regions, sub-zero to tropical, would seem to have been one of nature's great laboratories for experimenting with wheat strains. Many old Russian strains have taken root abroad under new names, or have been the basic stock out of which new strains were developed. Such American strains as *Kanred* and *Turkey* were developed out of the Russian *Krymka*. The Canadian hybrid strains *Prelude*, *Preston*, *Reward* and *Huron* have their ancestry in the old North Russian *Ladoga* strain. The French *Noé* derives from the old South Ukrainian *Blue Wheat* and the Canadian *Marquis* from a strain of West Ukrainian wheat.

The recently published work of Matei Iakubtsiner, *The History of Wheat Culture in the USSR*, throws interesting sidelights on these global migrations of wheat varieties.

Krymka, the original Russian strain, when brought to America, was crossed with Mediterranean varieties. The new strain was brought back to its land of origin, improved at an experimental station near the Black Sea, then again at a station in the southern steppes near Stavropol. The

Continued on next page

Professor Sergei Alexandrov exhibits a cucumber formerly raised only in China. Today the variety *Long Chinese—1294* grows near Leningrad, in the Urals and in Latvia as a result of the Institute's work.

Dr. Sergei Bukasov sends potato research data to Professor Larson of Wisconsin University.

A GLOBAL SEED BANK *Continued*

end product is the winter wheat *Voroshilovskaya*, grown widely in the southern part of the Soviet Union.

150,000 Seed Samples

Among the 150,000 seed samples collected and filed by the Institute are 42,062 samples of wheat seeds from all parts of the world, this most vital grain in all its multiformity. Forty years ago the genus of wheat—out of which man has developed thousands of varieties—included only five species. By 1935 Soviet investigators had already described fifteen. Today some thirty species of wheat are known, most of them discovered by Institute scientists.

All told, the Institute has in its collection more than 70,000 specimens of cereal seeds and an additional 12,950 specimens of corn. Barley takes only second place to wheat in number of specimens, with a total of 18,579.

There are also 22,167 specimens of industrial and oil plants; 12,330 vegetable; 10,852 fruit and 31,030 fodder plant specimens.

These are not petrified exhibits. They are live, ready-to-germinate seeds, potential plants. The Institute is by no means a museum, it is a scientific seed store which sends to Soviet plant research institutions every year more than 45,000 parcels with seeds for selection. A Soviet seed-grower would not think of trying to develop new varieties of food plants without calling on the Institute for advice and seed selections.

Growing New Varieties

The collection is used primarily by the Institute's own experimental stations. The fourteen stations, distributed in different growing areas, have developed through hybridization 340 varieties of food plants, now standardized and grown on a large scale.

Among them are the new corn hybrids, *VIR-42, VIR-25, VIR-150;* hybrid forms of the sunflower; and varieties of sorghum, vegetables and fruits. The *Kameraz* potato variety, developed from Institute samples, is canker-resistant and impervious to phytophthora. The Institute has reason to be particularly proud of this hardy plant variety, now grown widely in the northwest of the country, because old Russia had no canker-resistant potato.

Experimental stations, other than those run by the Institute, use the collection to develop new and highly productive plant varieties. In 1957 a new variety of wheat, originating from an Institute sample and classified as *Cesium-94*, was standardized and regionally assigned on virgin lands recently broken to the plow. From Institute seed specimens Academician Pavel Lukyanenko developed a hard wheat called *Krasnodarskaya-362*, and researchers in Azerbaijan developed the *Sevinij* and *Vafari* hard winter wheat varieties. All these yield large crops. *Khoranka-46* is another high-yield variety, developed by Nikolai Vavilov from a hard wheat he found in the Near East.

Since Institute specimens are planted in widely scattered parts of the country with differing climatic and soil conditions, the plants tend to display new characteristics. These new characteristics are being carefully studied to determine whether they are mutations due to environmental factors, and the degree and direction of plant mutability.

This is an aspect of the Institute's work, begun with Nikolai Vavilov's experiments back in 1923, which has large scientific significance. The data derived is of considerable practical value in deciding on the distribution of plants in areas where they will be most productive and in introducing cultures in areas where they have not been grown before.

Exchange with Foreign Countries

The Institute, for a good many years now, has been exchanging seed specimens with growers and investigators of many countries. In the past year alone the Institute received 4,468 specimens of different plants from 42 countries and sent 4,148 of its collection specimens to 38 countries.

China has been notably generous in contributing hundreds of specimens to the Institute collection, among them seeds of heretofore unknown varieties of wheat grown in the Tibetan mountains, at altitudes of ten and thirteen thousand feet above sea level, which are altogether unique since nowhere else in the world had such varieties of hard wheat ever been grown at these altitudes.

India has contributed a large selection of plants. Bulgaria has sent valuable strains of hard wheat. Lucerne has been sent from Canada; sunflower and onions from France; rice and beans from Burma; peanuts from Brazil; flax from the Netherlands; peas and onions from Australia; wheat, oats, barley and potatoes from Finland; tomatoes from Sweden; cereals from Yugoslavia; and beans from Austria.

These parcels that are shipped into and out of the Institute almost daily carry more than seeds; they are products of a cooperative scientific effort to grow more and better food for all the world. ■

AMERICAN STAR BLANCHE THEBOM WAS GIVEN AN OVATION BY THE AUDIENCE AND THE BOLSHOI THEATER COMPANY AFTER HER MOSCOW APPEARANCE IN *CARMEN*. SHE IS SHOWN WITH CONDUCTOR V. NEBOLSIN. HER TOUR WAS PART OF THE CULTURAL EXCHANGE PROGRAM BETWEEN THE SOVIET UNION AND THE UNITED STATES.

An American Singer in MOSCOW

SCENE FROM *CARMEN*. MISS THEBOM EXPRESSED HOPE THAT THE BOLSHOI THEATER COMPANY WILL TOUR THE UNITED STATES.

MISS THEBOM, WHO MET A GREAT MANY ARTISTS WHILE TOURING THE SOVIET UNION, IS CONGRATULATED HERE BY IVAN KOZLOVSKY, A WELL-KNOWN MOSCOW TENOR.

THE AMERICAN STAR GAVE EIGHT CONCERTS IN MOSCOW, KIEV AND LENINGRAD. HERE SHE IS IN THE MAIN HALL OF MOSCOW UNIVERSITY.

DAIRY COWS OF THE RED TAMBOV BREED ON A COLLECTIVE FARM PASTURE. THESE COWS PRODUCE YIELDS RANGING FROM 9,000 TO 17,500 POUNDS OF MILK ANNUALLY.

PUREBRED LIVESTOCK BY THE MILLIONS

By Nikolai Burlakov

Director, USSR Research Institute for Animal Husbandry

SEVEN years ago a box was shipped air-freight from Moscow to a livestock breeding farm in the Altai region. The box held ampules of sperm taken from bulls belonging to a dairy breed of cattle that yielded milk with a high fat content. These bulls were grazing somewhere in the Moscow region, while their sperm was being used to inseminate cows 2,500 miles away.

Had this been related fifty years ago, people would have shaken their heads in disbelief, or would have considered it blasphemy against nature. Now this kind of thing is a commonplace detail in the day-to-day work of livestock breeding.

Our country's first experiment in large-scale artificial insemination was done on beef cattle state farms in 1930. Twenty thousand cows were inseminated. The results were encouraging—a large increase in the number of offspring produced by the best bulls. Cows, sheep, and horses in large numbers are now fertilized artificially from pedigreed sires.

In one season as many as 500 to 600 cows may be fertilized from the sperm of one bull, and 1,500 to 2,500 ewes from the sperm of one ram. A total of 20 million sheep are artificially fertilized every year in the Soviet Union.

All work connected with creating new and improving existing breeds of farm animals is part of a unified state program. The key position in this system is occupied by the USSR Research Institute for Animal Husbandry. It has under its supervision the central station for artificial insemination, where samples of all farm animal breeds are gathered. Their sperm is sent to all regions of the Soviet Union and to foreign countries. Fifty thousand portions of bovine sperm and 100,000 portions of sheep sperm were shipped from the station during 1957. This is only one of the many activities of our Institute. As the main research center for animal husbandry, it supervises the work of 27 other such research stations in different parts of the country.

Last year Soviet farmers pledged themselves to bring meat, milk and butter production up to the United States level in the nearest future. In per-capita production of milk, for example, they expect to overtake the United States this year.

The output of meat, however, to reach American levels, has to be more than tripled, and will take considerable doing. Scientists and practical livestock men are working together to increase the number of offspring and to raise the animal's live weight.

The big current problem in Soviet animal husbandry, one about which there is much difference of opinion among scientists and livestock breeders, is hybridization. Some are very much for interbreed crossing. Others are as strongly against it.

The cattle breeders aim to produce larger cattle giving more milk with a high fat content. But what actually happens in practice? Some thirty years ago a smaller Siberian breed of dairy cattle which gave milk with a high percentage of fat began to be improved with the large East Fries and Simmental breeds. These cows are good producers, but the fat content of their milk is not high. As a result of the crossing, the weight of the Siberian breed did increase and the cows began to produce more milk, but the fat content of the milk dropped. This is one of the strong arguments which opponents of mass interbreed crossing present in support of their point of view.

There are, however, arguments—and facts—which demonstrate that it is possible to develop larger animals and at the same time preserve a high fat content if the breed that is being improved has this property originally.

Our Institute has developed several new breeds of cattle, sheep and pigs. Scientists, directed by Dr. Dmitri Startsev, for example, bred a highly productive cattle which is the biggest in the country—the live weight of the cows runs as much as 1,500 pounds. Professor Alexander Vasilyev developed the Kuibyshev breed of sheep and Professor Dmitri Grudnev developed the Breitov breed of hog, the most widely raised variety in the country.

In its work on developing new breeds the Institute incorporates the experience of foreign researchers. It maintains close scientific ties with livestock breeders in Holland, Denmark, England, Egypt, Germany and Czechoslovakia. During 1957, twenty delegations from the United States, England, Egypt and other countries visited the Institute.

Our Institute and other research stations comprise only a part of a nationwide system of stockbreeding. A very significant role is played by the network of state pedigree nurseries located in various parts of the country. Each nursery serves a group of districts in which a particular breed predominates. The ultimate function of the nursery is to transform all the animals in its district into pedigreed stock. Almost all of the country's new breeds of farm animals have been developed with the expert assistance of the nurseries.

Then there are 500 specialized pedigree state farms which improve local breeds and sell the pedigreed sires and dams to the collective farms. These farms have herds of purebred cattle that run into the thousands.

The Karavayevo State Farm situated on the upper reaches of the Volga is typical of these pedigree farms. It produces the fine Kostroma breed. The average annual milk yield per cow of this breed is 14,000 pounds, while some groups of cows give an average of 19,000 pounds. The Karavayevo cow "Groza" gave 36,400 pounds in one milking season.

Collective farms are also active in developing new breeds. One of them, located in the region where the Kostroma breed is raised, has developed a big pedigree livestock business. It produces cows that became known as the Samet type of the Kostroma breed—Samet is the name of the collective farm village.

The Soviet Union is a country with widely varying climatic, soil and animal forage conditions. Central Russia differs markedly from the "black earth" region of the Ukraine; so do the Kazakh steepes and the Siberian woodlands; while arid Central Asia is altogether unlike all other regions.

As a consequence, every region tends to breed its own types of farm animals. It would be folly to try to create a universal breed of sheep, hog or cattle for the whole country. In the last quarter-century 36 animal breeds—horses, cattle, sheep and hogs—have been developed. These are not single experimental animals, they are raised in millions of heads.

In Central Asia a small zebu-like cattle used to graze on arid and semi-desert land. It gave little milk and meat, but it could live and forage under conditions that would kill a less hardy breed. It was crossed with Red Steppe cattle, and the product is a breed which is adapted to local conditions and is a high producer.

At the Chkalov Meat and Dairy Cattle Institute, located at a point where the four large regions of southeast Russia, Kazakhstan, the Urals and Siberia meet, early-maturing types of farm animals are bred. The Chkalov Institute crosses Astrakhan cows with bulls of the beef cattle breeds—Herefords, Aberdeen-Angus and Shorthorns.

To boost per-capita meat production, heavy emphasis is being placed on pig breeding. As compared with other livestock, pigs yield more meat and fat in a given period because of high fertility and early maturation. It is expected that the country's production of pork will be increased to 11 million tons annually in the next few years.

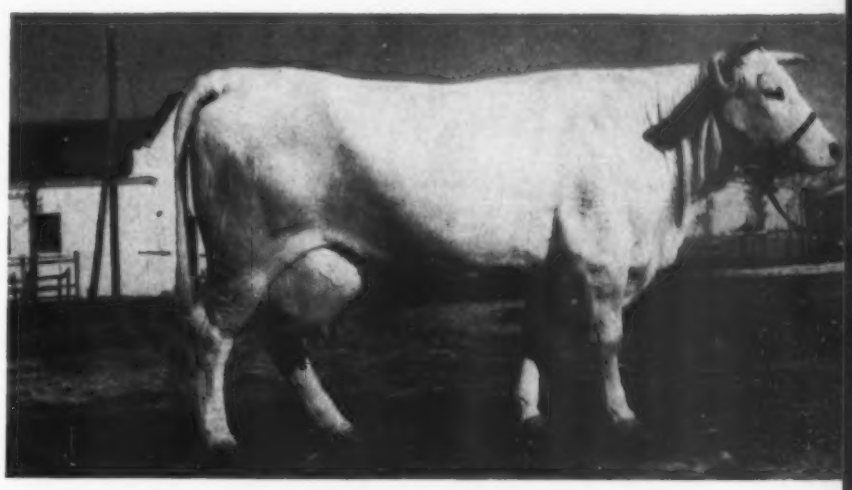
Two new pig breeds—the Breitov and the Large White—are the most widely-raised types. One farm in the Kuban region got more than 12,000 pounds of pork in one year from "Volshebnitsa," a sow of the Large White breed.

A large boost is expected in sheep production. By 1960 the country plans to reach an annual output of 1.5 million tons. Thirteen new types of fine-wooled and semifine-wooled sheep have been bred. The average live weight of the breed of Georgian rams runs from 140 to 150 pounds, the maximum as high as 200 pounds. The average wool clip is 9½ pounds, the maximum a little more than 12. In creating this Georgian breed it was found that not only could fat-rumped sheep with uniform semifine-wool be produced, but that these characteristics could be fixed in the offspring, something considered almost impossible heretofore.

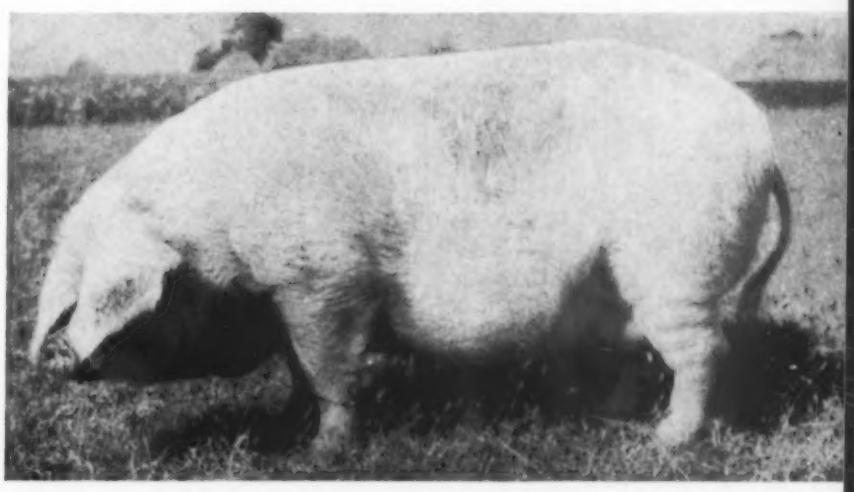
New poultry breeds, well adapted to local conditions and to consumer needs, have also been developed. The Russian White breed of hens is now raised generally throughout the country. The best of the breed weigh 5½ pounds and lay 330 eggs a year. The native breeds of geese—the Kholmogori, Arzamas, Shadrin, Romen and others—run from 13 to 22 pounds and make excellent eating.

All these new breeds—cattle, sheep, pigs, poultry—are joint products of scientist and practical stockbreeder, of research stations and operating farms working together to produce more for the consumer. ■

RAMS OF SOVIET MERINO BREED. THEY AVERAGE 30-40 POUNDS OF WOOL A YEAR.

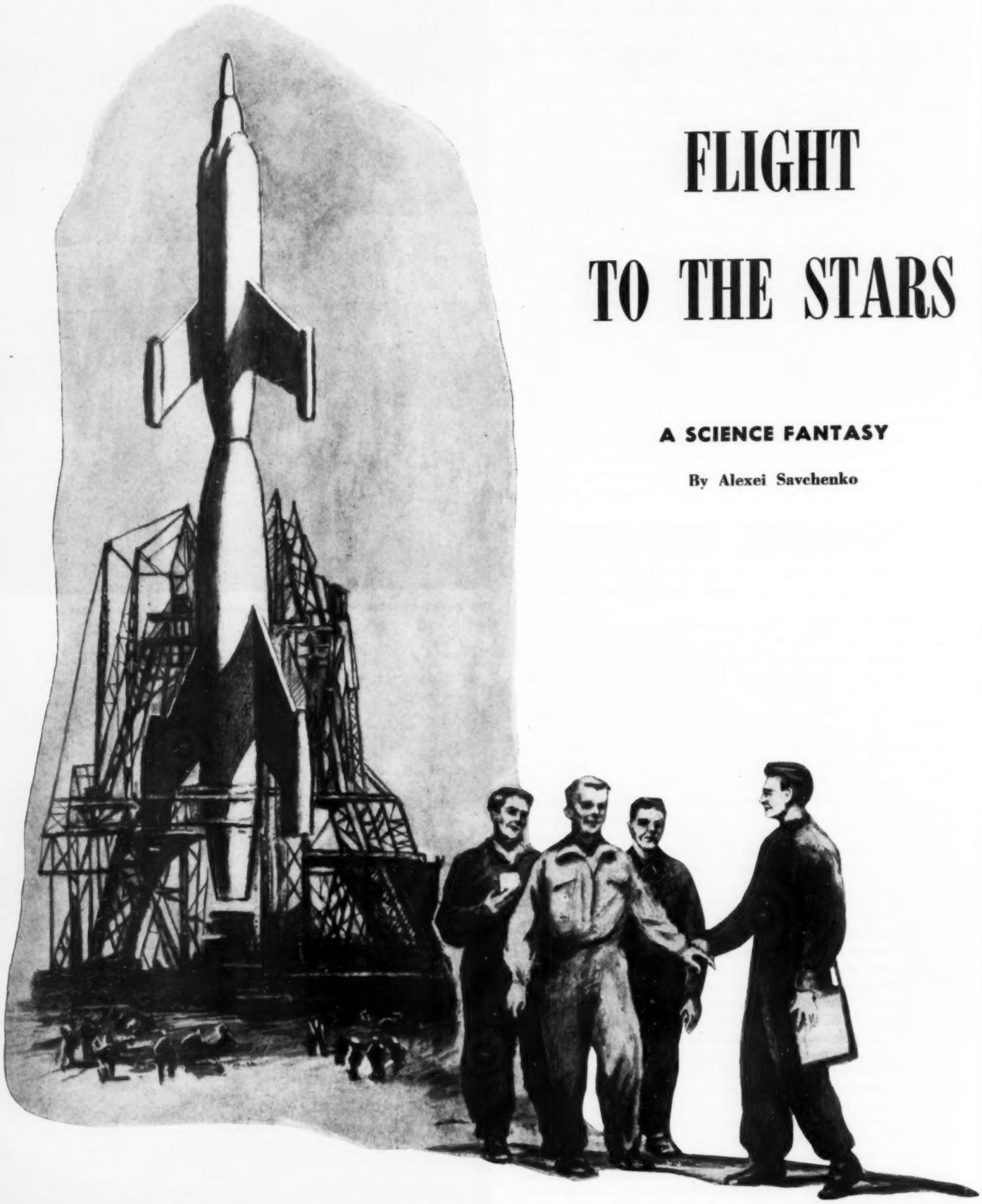


THIS RECORD KOSTROMA COW GIVES UP TO 35,000 POUNDS OF MILK A YEAR.



SOWS OF THE LARGE WHITE BREED GIVE AN AVERAGE OF 12 PIGS PER FARROW.

A HERD OF PRODUCTIVE PEDIGREED DAIRY COWS GRAZE ON SAKHALIN ISLAND.



FLIGHT TO THE STARS

A SCIENCE FANTASY

By Alexei Savchenko

JULY 24, 1977. Crowds flocked from Moscow to the Tushino Airport. Blast-off time had been set for 9 P.M.; by 6 P.M. the field surrounding the enclosure was packed tight with sightseers.

Above the enclosure towered the giant white arrowhead, the rocket at the very tip. Once aloft and the great arrow had gathered the required speed, the shaft, with its long, swept-back wings and powerful motors, would detach itself and drop back to earth by parachute.

Over the loudspeakers came an announcer's voice: "Today the first man-guided space ship will be launched. It will fly around Mars to photograph the planet at close range and return to earth a year from today.

"The space ship will be piloted by Andrei Ilyin, the leader of the group who built it.

"The ship will blast off with a boost from auxiliary jet motors. Its own atom-driven jet engine will begin to operate only when the ship is clear of the earth's atmosphere.

"Gases heated to temperatures of thousands of degrees will propel the ship. Nearly nine-tenths of the ship's airload," the announcer informed the waiting thousands, "is fuel. The hull, tanks, engines, cabins, instruments and stores take up only a little more than a tenth of the load."

The crowd listened closely. Small boys pushed their way through to the front to get the best view. The guards were busy trying to keep them off the tarmac.

Over the telephone, a hot and weary superintendent reported a stowaway. "Only twelve years old and in short pants. Tucked away in the flues, he was. Had a compass, two buns, and a thermos in his satchel.

"Off to explore the cosmos, he said. 'You've picked a daft place to hide,' I told him. 'You'd be scorched to bits by the hot gases!' He's crying here now and won't say a word. What a day!"

Meanwhile, in a small building on the edge of the airfield, the pilot, Andrei Ilyin, short, lean and dark-haired, lay resting, his eyes half closed. He jumped up when the flight controller poked his head through the door. "Ready?" he asked eagerly.

"Not yet. I'll call you. Try to get some rest."

"It's impossible. The doctor pushed me in here and ordered me to keep calm. But that only makes it worse. What's going on out there? Is the fuel aboard?"

"We start loading soon. The rocket is getting its final inspection."

The controller drew his head back. Ilyin glanced at his watch. Another hour and a half to wait. He was getting worn out with this waiting.

He shut his eyes again and tried to take his mind off the flight. Would Julia get here from Vladivostok in time? In any case, they had already said good-by over the TV phone.

She had joked, "You'll really outfly me this time." Ilyin smiled to himself. "My dear pilot-wife."

He was proud of her. She was one of the few women jet pilots on the long and hazardous runs, while he had given up flying to work as a designer. She had flown all his test models—all except this one, his space ship.

His thoughts returned to the flight he was about to make. Had everything been done? Shouldn't he take a last look himself?

He glanced at his watch again, impatiently. "Blast the doctors and their science," he said aloud. "I'm going outside."

Blast-Off

At exactly 8:50 P.M. Ilyin took his place at the controls. The hatches slid shut and were sealed. Through the portholes he could see the green patch of the airfield and everywhere around it the sea of faces stretching to the horizon.

At 9 P.M. the starter rockets were fired. In a cloud of smoky dust the white arrowhead slid up the guide rails of the tower, gathering speed. Then it tore off into the blue, rapidly darkening sky.

At first the red exhaust flame could be seen from the ground. Then the rocket disappeared from sight. The crowds peered into the sky, searching for the tiny speck, but the ship was already far beyond the horizon.

The members of the interplanetary commission were gathered round the radio transmitter in the control room.

"How do you feel? How's the ship working?" The chairman spoke into the microphone, his voice loud in the silence.

Ilyin's muffled voice came through. "Everything normal so far. The starter jets have dropped off and I've got the atomic engine going. Gaining speed and feeling fine. I can feel that extra G-force, as we expected."

"Where are you now?" the chairman asked, in an anxious voice.

"Just ticked off the first 600 miles. Speed: 16,658 mph. Engines working fine."

The listeners slowly began to relax, their faces lit up, smiling. "Well," the chairman began, "it seems we can congratulate ourselves on . . ."

A curious noise came from the receiver. Ilyin's voice was suddenly faint.

"Ilyin, Ilyin," the chairman shouted into the microphone, "what's happened? Can you hear me? What's happened?"

A long minute passed, then Ilyin came through again, almost inaudible. "I can't tell . . . the G-force has suddenly increased . . . acceleration is above normal . . . I can't turn off the engine . . . I'll have to wait until I run out of fuel."

In the control room of the airport, the scientists sat, listening helplessly to the voice of the chairman urgently repeating his question into outer space. "Ilyin, can you hear me? Ilyin, what's the matter?"

But there was no answer.

The Diary

July 25, 1977, 0010 hours: I am starting my diary. Whatever has happened, I am alive and can still carry on and make observations.

I left the earth at 2100 hours last night. Nine minutes later the rocket should have gathered enough speed to fly off on its course, but only six minutes after launching the speed increased suddenly and the acceleration pushed me back into my chair so hard that I lost consciousness.

My chest and back hurt, and I have bruises on my forearms and neck.

Then things got better and acceleration steadied to 130 feet per second. The gravity is four times normal.

The engine has been working for three hours now without a stop, but the instruments show only a very slight consumption of fuel.

I am now traveling toward the planet Venus. Mars is on my port bow, and I was unable to swing around toward it.

For some reason the steering isn't functioning. The speed is now 275 miles a second—it is incredible!

I have noted the figure, but I cannot believe it. I'm now over 1¼ million miles from earth. It is far away, and looks smaller than our moon usually does.

0300 hours: What is happening in the engine? It has used hardly any fuel in six hours' flight. Conditions have changed completely. The flame coming from the exhaust is much brighter than the sun.

July 26, 1977: At 2345 hours yesterday, I passed through the orbit of Mars, leaving it on the port bow. I am still traveling toward Venus, and have covered 125 million miles.

The engine is still working and acceleration is the same—130 feet per second. I don't think I could have stood the extra gravity for so long if not for the special training.

My head feels heavy and my feet—they're as heavy as elephants' feet! There's such a weight on my hands that it's hard even to write. I have to push the pen with the full weight of my shoulder behind it, as if I were sawing wood. But I must keep on writing.

The situation is bad. This pressurized cabin is like a cage: I'm safe, but helpless.

I can't control the engine. I have food, water and air to last me for eighteen months. That's my limit of endurance! So I shall live and take notes for a year and a half.

Who will read them, I wonder? A seaman throwing a bottle into the sea or a man burying a manuscript in the sand can hope that his message will be found by someone. What can I hope for?

2000 hours: This morning, 140 million miles away, I heard earth for the last time.

It's a long time since I stopped answering—my transmitter is not powerful enough. It was good to hear even that "Ilyin, where are you?" I am now all alone in interplanetary space.

July 30, 1977: Speed is 12,500 miles a second. I am five billion miles away from earth, on the boundaries of the solar system.

How few planets there are in our solar system! I have flown right through it and not passed anywhere near a single one.

Some were on the other side of the sun. Others, the closest ones, were 50 to 100 million miles away. They looked a little brighter than from the earth—but that was all.

My present speed is so great that I can only compare it to the speed of alpha particles in the fission of radium. But those are tiny particles which can't be seen even under a microscope, while this is a large complicated machine, with many instruments and a man on board. What's going to happen next?

Continued on next page

FLIGHT TO THE STARS *Continued*

The Speed Keeps Increasing

August 16, 1977: Speed is now 50,000 miles a second. It's unthinkable.

This immense speed has brought on the so-called Doppler effect. So far I have only used this effect to determine my speed, by measuring the displacement of the "yellow" line of sodium in the spectrum of the stars toward which I am flying.

September 24, 1977: I have now been flying for two months. It is amazing that I am still alive. By the Doppler effect I judged my speed to be 150,000 miles per second. I calculate that I am 3,800 times farther away from the sun than the earth is.

For two long months I have been leading a strange life. I have to crawl along the floor of my nine-foot-square cabin in the space ship. This is my world.

Beyond the walls of the rocket are the stars. The stars are much greater and brighter—their hues have changed—but the constellations are the same as seen from the earth. I can see Orion's Belt, the Great Bear and Cassiopeia; its 'M' shape is still the same.

How enormous must be the distances between these shining worlds, if the constellations do not seem to have changed, even at this distance!

To be accurate, of course, there are changes, but they can't be detected with the naked eye. With a telescope and star charts one could easily see that the nearest stars have moved: Alpha Centaurus by almost half a degree, Sirius by approximately a quarter, other stars have moved by even less than that.

Half a degree is the visible diameter of the moon, a noticeable magnitude. All the near stars shift in one direction, toward the constellation of the Ram, where I should see the sun, the brightest orange star. But I can't see it. The sun is behind my ship and blinding gases hide it from sight.

Recollecting the Past

October 2, 1977: It's your birthday, Julia. Your 26th birthday. I shall soon be 40. Although we are some 400 billion miles apart, my thoughts cover the distance easily.

You remember the day the Director of the Institute introduced us in his study? You were so excited that you were almost rude.

Now I understand that it was your embarrassment. But when you left, I asked the Director:

"Why are you letting this giddy girl test my airplane? Do you want to discredit the model? I shall protest. There's no sense at all in such testing."

But you made a brilliant test flight, and the Director often teased me about it afterward.

Do you remember when I proposed to you? Most people propose in the moonlight, in the park. But with us it was midday, with a hot sun shining on the beach.

It was at the holiday home, and you were leaving the same evening, and I was in a hurry to tell you that I loved you.

You remember I noticed that you had scratched the word "Darling" on a stone.

"Give it to me as a keepsake!" I begged. You blushed. "I never said it meant you. It's a song title." And you threw the stone away. I spent three days looking for it, but couldn't find it.

Why am I writing all this? If I die, you will never read my diary, and if I live and come back to earth, I will be able to tell you myself. But I doubt the possibility of my returning.

I am writing this for myself, just as lonely people talk to themselves in a room. It's just that as long as a man is alive, he must think, work and love. And anyone who does not think, work and love is dead, even though he still breathes.

The Engine Stops

October 18, 1977: It's very strange. According to my calculations, even the atomic process should have ended. The force of gravity is unchanged, but my speed is still increasing by the same 130 feet a second. It is already close to the speed of light. But this must surely be the limit!

Something must happen within the next few hours! I am so interested in it that I even forget to think of what's going to happen to me.

October 19, 1977, 0200 hours: At last the engine has stopped. I felt it stop even before I checked the instruments.

The oppressive weight has begun to ease up and it is easier to breathe and move about. . . Now weight has entirely disappeared and I am soaring in mid-air—just floating about.

It was so unexpected that I lost consciousness. That has passed, but I still feel nausea and dizziness. I am doing my best to get used to this absence of gravity.

I have lost the feeling of flight. It seems as if the rocket is hanging, surrounded by stars. The sudden silence makes my ears ache. The blinding light pulsating behind the rocket has died away.

0600 hours: The sky has changed noticeably in the last few hours. It is almost dark behind me. I can see a few dim stars, and some broad, misty shapes.

But before me everything is magnificently bright, and I can see spots of incandescent gas, clouds of stars. The whole sky looks phosphorescent. This is the Doppler effect to an extreme degree.

From the stars behind me I can perceive only the few extreme X-rays and gamma rays that we connect with rarefied high temperatures. From the stars in front of me I can see infrared rays. I can see the coldest stars, dimly shining, and can even make out the dark bodies.

Faster Than Light?

October 23, 1977: A body just cannot travel faster than light! Energy cannot be transmitted at speeds faster than the speed of light—that is a basic thesis of the theory of relativity.

An hour ago it seemed to me that either I was going out of my mind, or else I had refuted Einstein!

For some time I have not been able to measure my speed by the Doppler effect. The familiar dark lines have vanished, and lines and stripes unknown to me have appeared, all of them slipping by very quickly.

Now they are no longer slipping, but I cannot find them in the tables. And I have been trying to measure the speed of the ship by the movement of Sirius.

I was not able to do this before because the displacements were too small, and since the speed changed all the time I couldn't get a proper reading.

But in the last few days Sirius has shifted very noticeably, passed right through the Great Dog and has come closer to Orion.

I measured the shift over 24 hours, and my calculations showed that the rocket was traveling at about 25 million miles a second—133 times faster than light!

On second thought, this does not mean that I have refuted the theory of relativity. I have confirmed it, instead. In actual fact, the speed of my rocket is only close to the speed of light—it is over 180,000 miles a second.

This means that I have approached the speeds at which the relativity of time and space is very noticeable. The classical laws of physics are no longer valid for me, and it is impossible to determine the speed of the rocket the way I have done, by taking as a basis the distances we measure on the earth and the hours on the rocket.

Distances in the universe are not absolute, but grow shorter for a rapidly-flying body. And time, too, is not absolute.

In my rocket time passes more slowly than on earth, and all physical processes, too, take place more slowly—the fission of uranium, the passage of the hours, the life processes going on in my body. That is why my subjective determination of speed is quite incorrect.

So everything falls into place. Here it is, the limit of the movement of matter which man has not yet reached; the limit which has only rarely been studied in experiments with elementary particles. Everything changes—distance, mass, the rate of time—magnitudes which it is difficult to conceive of as real!

But then, what day is it today? If time passes more slowly in the rocket than on earth, perhaps from the earth's point of view I have already been flying for many months, and each "day" of mine takes me as far as "years" of ordinary travel on earth.

I must hurry with repairs to the engine. But how about the temperature? How about radioactivity?

Problems in Interstellar Space

October 24, 1977: The smallest thing becomes a problem in interstellar space. What could be simpler than cooling on earth?

You put a hot object in water, or expose it to air. But I have no water and no air to spare. I cannot use up the fuel, because I shall need it for the return journey. The engine is cooling slowly by the emission of radiation . . . while I wait, losing precious days and being carried I don't know where.

October 30, 1977: I have decided to get into the engine and set it working again. We hadn't envisioned this, so I have had to stitch metal sheets onto my space suit, to protect myself from radiation.

I left through the hatch, securing myself to the ship by rope—because in space, where there is no gravity, you could easily be close to an object but still be unable to put out your hand to touch it.

I soon found out what was wrong with the engine. The apparatus for lifting the uranium rods out of the atomic pile had been damaged, and that was why I had lost control of the engine. I set about the repair.

An hour later I stopped and asked myself: "Why am I doing these repairs? How will it help me?"

I forced myself to think the problem through. I was flying away from earth at a speed approaching that of light. I had to lose this speed, first of all. I had already flown an incredible distance, and while I was losing speed I would fly even further.

Flying at the ship's normal speed, it would take years to return to earth. I had neither time, nor food for that long a journey.

So I should have to brake, turn around, again reach the speed of light, and again brake as I approached the solar system.

But if I repaired the atomic reactor, I would be restoring a weak motor suitable only for a flight to Mars without landing, a motor only able to reach a speed of eight miles a second, which was insignificant indeed for my needs.

I did not even have enough power at my command to turn around! I would just use up all my fuel and lose hope forever.

What was the answer? There was only one—to restart the process which had brought me here.

It was a great risk, but there was no choice. I faced either slow death from suffocation and hunger in a year's time, or a risk that might cost me my life, and hope.

I made my decision.

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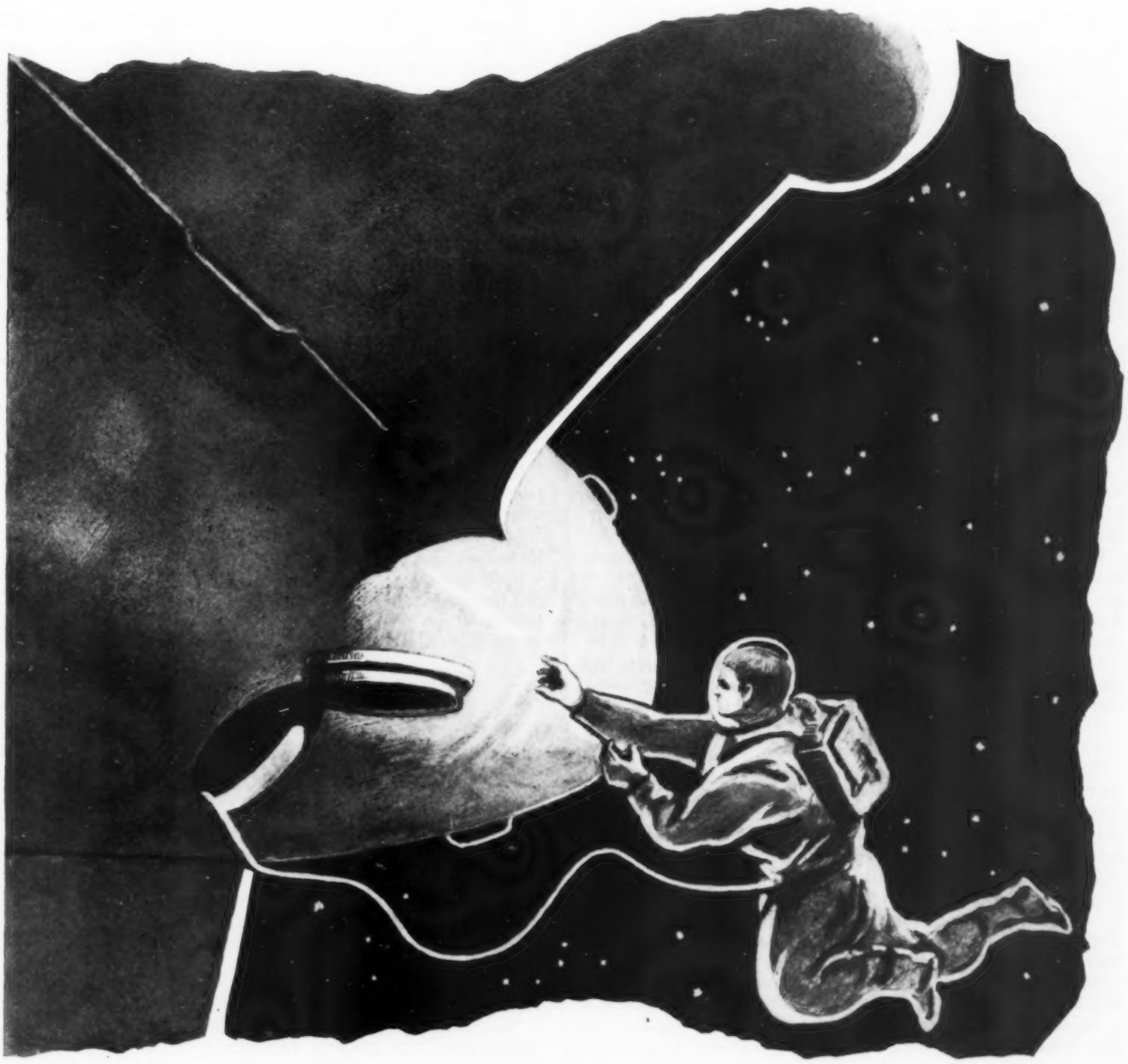


FLIGHT TO THE STARS *Continued*

Restarting the Engine

November 2, 1977: Everything is ready! Work on the engine took me two days. Then I reloaded atomic fuel, transferred ammoniac into the tanks feeding the motors. It was win or die! I flicked over the starter switch.

Ten minutes later I felt the unbearable heaviness once more. Again I was pushed back into my chair. But I was alive, and the repairs were a success.

I am still flying away from earth, but am already applying the brakes. The engine answers to the controls.

November 4, 1977: I must have flown an enormous distance because the constellations are distorted. Many bright stars have moved into other constellations.

I think I must be at least five light years away from earth, looking at it from the point of view of someone on earth, of course.

So this is the secret of interplanetary flight! At the usual speed of rockets, many human life-spans are needed to reach the nearest stars. but at the speed my rocket has attained, time inside the space ship almost stands still.

Man will thus be able to reach the depths of the universe. It is true that during these great flights, generation will follow generation on earth, and only the memory will remain of the brave men who set off to the distant stars to study their planetary systems and the life on these unknown planets. But sooner or later they will return to enrich science with priceless new data.

There are no boundaries to human travel in the universe—there are no unattainable worlds and galaxies!

December 7, 1977: My speed is already noticeably less than the speed of light. High speed effects have long ago disappeared and the sky has assumed its normal appearance—the same sky in front and behind me.

I have been taking photographs continually. I have flown far and seen stars from other positions, so my photographs are very important for determining the distance to the stars and their location in the regions close to our galaxy.

The Journey Home

June 4, 1978: I am flying home now. I must be patient for another two months! I managed to brake, turn around and start off again. and I have already been flying in interstellar space for two weeks in conditions of relativity.

Behind me are nine months of extra gravity load. and one month of suspension in space.

I have run out of film. It does not matter. In any case the most interesting part of the journey is over. Now I must see to it that the photographs are returned to earth.

I don't feel well—there are red spots on my skin, I feel pains in my chest and my temperature is above normal. It seems as though extra-gravity load for a long time isn't conducive to good health.

I try to sleep more, so that time may pass more quickly. But I sleep badly, even with sedatives.

Even in my sleep I listen to the hum of the engines. It would be terrible to die now . . . on the way home.

It is the photographs and notes that worry me. It would be such a pity if no one were to learn of my discoveries. If only scientists can see my work, then all this would make sense.

But it isn't only my work that I am worried about. I want to see my country again, green fields, Moscow streets, human faces.

July 31, 1978: I am coming into the solar system. I can see the sun as a small but blindingly bright disc. It is already beginning to warm the ship a little.

August 2, 1978: I can see the earth clearly. It is a bright bluish star. It is beautiful.

August 3, 1978: The earth is half covered by clouds. Speed is four miles a second. I am coming down to land.

Arrival

Crowds streamed from the railway station into the square and spilled out into the Moscow streets.

"Excuse me, is the Astronautical Institute where it used to be?"

"The best way is by subway, to Tsiolkovsky Station."

"Where's that?"

"Is it your first trip to Moscow?"

"No. I was here . . . a long time ago. Please tell me, what year is it?"

"Friday. Oh, the year! You want to know what year it is?"

"Yes, that's right."

"It's 1989."

"Thank you. That's what I thought."

The youth looked in bewilderment at the man in the blue overalls as he walked off. Then he shrugged his shoulders, glanced at his watch, and hurried on down the street.

Ilyin had been back on earth only a few hours. He had landed the ship on a big lake near Moscow.

When the ship had come to a stop in a dead silence, Ilyin, the noise of the motors still ringing in his ears, put his head out of the porthole and felt the breath of raw morning freshness against his face.

Mist hung over the water and birds rustled in the trees at the water's edge. The forest was still asleep, and the lake edge also. There was no one to meet the traveler.

Ilyin could not wait until people had awakened. There was nothing he had to do about the rocket—it wouldn't run away!

The shore was nearby, so Ilyin swam there and waded through the reeds and marshes to the thickly forested bank. An hour later he came out onto the railway. and . . . here he was in Moscow.

Relativity Laws Play a Trick

Twelve years had passed since he had last been here! Where should he go? Home to Julia? But twelve years had passed for Julia, too.

Suppose she waited a year, but after that . . . ? No, he'd go to the Institute first.

But what was the point? By this time they must have forgotten about him—his flight had been a momentary mishap in the history of cosmonautics.

What he had failed to do must have been done long ago. Other men must have flown around Mars, landed on Mars, Venus and on other planets of the solar system. He was twelve years behind!

The laws of relativity had played a dirty trick on him—the second Rip Van Winkle. That one had slept in the woods for 20 years, while he had lost 12 years in a few months in interplanetary space.

His reappearance, of course, would be a sensation—but he didn't welcome the thought of being a sensation.

Ilyin sat down on a bench in a small square. The noisy bustle of the capital passed before his eyes. A solid stream of cars sped along the street. Factory and office workers, school children, all hurried by.

Ilyin jumped to his feet. Why of course, he was no Rip Van Winkle! He had not been asleep. He had been at work—twelve years of work.

His photographs, measurements, catalogues were enormously important for science. His flight at maximum speed, his observations of the relativity of space and time, the very possibility of making such a flight, all this might be still unknown to scientists.

Astropilot's Memorial

When Ilyin came out of the subway, he saw a new suburb. In 1977 this had been a region of hillocks overgrown with shrubs. Now broad concrete roads ran in three directions. There were tall houses and tree-lined avenues—how it had changed!

One of the streets was marked Astronaut Boulevard. Ilyin walked a few blocks down to a white building with columns and a large glass cupola. On a column he read the inscription: Central Institute of Astronautics.

Ilyin went in, walked up a broad staircase. On the landing there was a bronze statue, and when Ilyin looked up at it, his heart skipped a beat.

There on a pedestal, shaped like a rocket, stood a statue of Ilyin, himself, just as he had been dressed on the day he left.

Hatless and in his overalls, he was looking calmly at the heavens. The bronze and marble glittered in the sunbeams.

There was an inscription on the base of the statue: ANDREI ILYIN—PIONEER OF THE COSMOS, 1938-1977.

Blood rushed to his face. He stood quietly for a moment to calm himself. So he had not been forgotten after all! How fast his heart was beating!

Well, it was all very nice to see a monument to yourself, but the date would have to be corrected! He hadn't died in 1977!

On the second floor he turned into a quiet corridor. On the doors were notices: "Professor of Astro-Navigations," "Physics Laboratory," "Professor of Jet Technique," "Radio Telemechanics Laboratory," "Lecture Hall," "Auditorium."

It was not only an institute for research workers. The young generation of astronauts was being taught here. Twelve years ago there had been no such institute.

The rooms were empty now—it was summer—but from behind one door came the sound of a lecture in progress. Ilyin listened. It was the unhurried, familiar voice of an old colleague.

"Today, my friends," he was saying, "you have come to our institute for the first time. You wish to devote yourselves to star travel, this difficult and noble branch of human knowledge.

"This science, which was only recently developed, demands selflessness and great courage.

"You know that in recent years not many flights have been made, and that the first of these ended with the death of the pilot—my old colleague, Andrei Ilyin.

"I must apologize for mentioning this in the presence of the hero's widow, Julia Ilyina," the lecturer went on.

Ilyin pushed the door open and entered the hall. The rows of seats towered upward in the sunlit auditorium. Hundreds of young eyes were concentrated on the platform, where the old professor was speaking. And beside him sat a tall woman, with streaks of gray in her flowing hair.

As the door opened she turned round, cried out and, pressing the arms of her chair, began to rise . . . so slowly . . . so slowly . . .

There was a buzz of excitement throughout the auditorium. Then the students ran down to greet him—a man who had just descended from the pedestal in the institute hall—the same lean figure in overalls. ■

SCIENTIFIC COOPERATION

Sputniks Aid IGY Research

Soviet scientists are engaged in 13 branches of the International Geophysical Year program. The data which they compile from their projects are sent to world centers designated to organize the information received from various countries. The Soviet Union is one of these centers.

Meteorological research is being conducted on an especially large scale. The observations made by Soviet scientists, along with data gathered by researchers of other countries, will furnish new information for correct forecasting of the weather.

Solar observations are another major part of the program. At the very beginning of the International Geophysical Year a powerful flash on the sun was registered that resulted in an extensive disturbance in the ionosphere, affecting the propagation of radio waves. Other processes on the sun which produced bright polar lights and magnetic storms have also been recorded.

As part of the IGY program the Soviet Union has established four research stations in different parts of the Antarctic. Recently Soviet explorers reached the pole of relative inaccessibility, the area farthest removed from the coast, where still another scientific station is to be established.

One of the most important projects of the IGY is the launching of artificial earth satellites equipped with instruments. The first sputnik, launched by the Soviet Union on October 4, 1957, had a 92-day career as a celestial body. Through observations and trajectory calculations it was established that it penetrated the denser layers of the atmosphere and disintegrated on January 4.

During its life Sputnik I made about 1,400 turns around the earth and covered some 37 million miles, which is about equal to the distance from the earth to Mars when it is closest to our planet. The final analysis of the sputnik observations is still to be made, but preliminary data have already yielded valuable information about the upper layers of the atmosphere and the laws governing the movement of artificial earth satellites.

Observations of Sputnik I confirmed the early calculations of scientists on its life span. With the aid of rapid electronic computers and methods worked out by mathematicians, observers could forecast the exact position of the sputnik at any given time.

Radio signals from Sputnik I on the 15-meter band were received at great distances, well in excess of the range of direct visibility, and in a number of instances reached up to 6,200 miles. Examinations of the signals revealed the formation in some layers of the ionosphere of specific conducting strata that facilitates long distance radio reception.

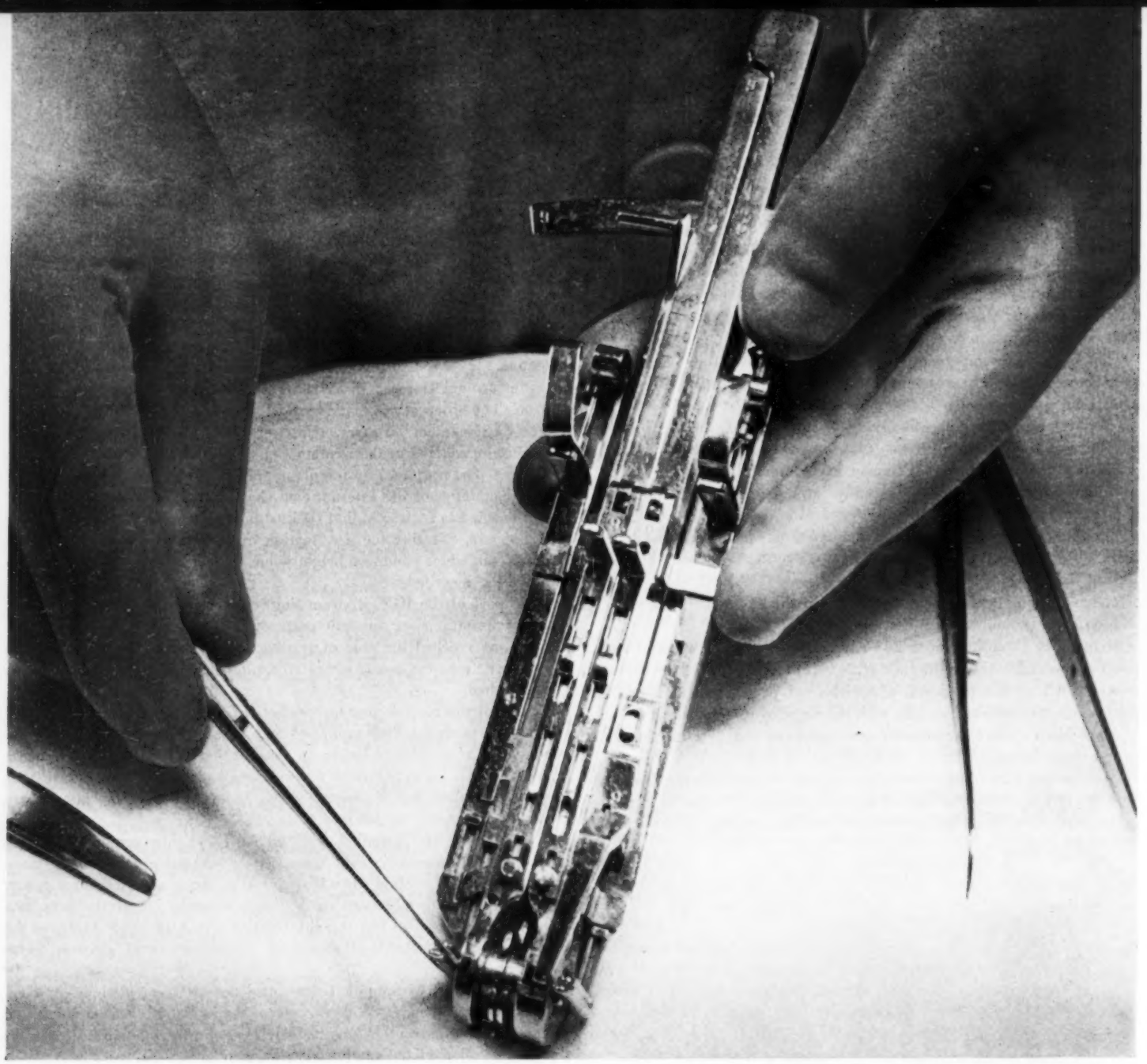
One of the important facts that was established by the sputnik's flight was that meteorites are not as formidable a danger to artificial satellites as had been believed. Sputnik I passed through meteoritic showers but remained unscathed for a long time.

Prior to the launching of the sputnik, numerous articles were published in scientific journals in the Soviet Union describing the methods and instruments to be used in observing its flight. Radio magazines carried advance descriptions of sets to receive the sputnik's signals, while astronomic publications gave instructions for visual observations of the man-made moon.

All of this publicity made it possible to organize the tracking of the sputnik in all countries. Monitoring stations and radio amateurs in many countries were of great assistance in collecting information on the first flight. The Soviet IGY committee received many hundreds of letters and cables reporting data from observers.

Valuable information came from scientists in Czechoslovakia, China, Poland and the German Democratic Republic. Observatories and stations in Ireland, Britain and some of the Latin American countries also reported their observations.

The Soviet IGY Committee has provided scientists and broad sections of the population of all countries with material on the most important features of the experiment with the world's first artificial earth satellite. In conformity with its obligations, the Committee has circulated a scientific report on the flight of the sputnik to the organizations participating in the International Geophysical Year. ■



MACHINE DESIGNED TO STITCH TORN VEINS AND ARTERIES HAS BEEN CALLED "THE SOVIET SPUTNIK IN MEDICINE" BY AMERICAN SURGEONS WHO SAW IT DEMONSTRATED.

SURGICAL ENGINEERING

NEW TECHNIQUE FOR SUTURING TORN BLOOD VESSELS

An Interview with ***Professor Pavel Androsov***

SURGEON and engineer combine their inventive skills to give Soviet medicine new instruments for healing. One such instrument, to suture torn blood vessels and nerves, was described by Dr. Pavel Androsov in a paper he read at a meeting of surgeons held in Atlantic City last October where he was one of a delegation of four Soviet physicians.

During the Second World War, a young engineer and aircraft designer, Vasili Gudov, returning from the front on furlough, was traveling on a medical train. All around him were badly wounded men, amputation cases, the surgeon in attendance told him.

"Was that the only thing that could be done—to amputate?" he asked the surgeon. "These young men to be left without arms, legs—crippled for the rest of their lives!"

"Maybe some day in the future we'll know how to save these legs and arms," the surgeon answered. "We just don't know enough today."

Gudov was fumbling with the idea, dim and very hazy yet. He asked the surgeon later, "The worst of it is that the bone is fractured, isn't it?"

The surgeon shook his head. "It is true that the bone is the foundation. the framework. But it isn't the bone and soft tissue which bother us. Bone has a tendency to unite. We can handle that part of it. What we don't know enough about is how to patch up the torn blood vessels and nerves—how to suture them properly—so that they can supply nutrition to the muscles."

Suturing blood vessels, the surgeon explained, was an old surgical technique. The difficulty lay in the method. Suturing with needle and silk was a primitive, lengthy and limited technique which brought its own problems. After suturing vessels with a needle, what usually happened was that the lumen, the opening of the vessel, was narrowed at that point. Then, too, small vessels could not be sutured at all. What it amounted to in practice was that you just could not sew a severed limb with needle and silk alone.

Dr. Pavel Androsov helped convert an engineer's crude model into exact surgical sewing machine.

A TV camera set-up in the operating room broadens the audience of doctors and medical technicians, who are thus enabled to watch Dr. Androsov as he performs an actual operation with the new machine.

Exciting Idea

Dr. Androsov takes up the story at this point. "A few years after the war. Gudov came with drawings and a model to the clinic where I was working at the time. 'This,' he said, 'is an idea I have for suturing blood vessels.'

"I looked it over and I thought the idea was very interesting. The idea—not the model. I told him the model wouldn't work, but the idea, even in this most rudimentary form, was exciting and imaginative.

"It was, I should say, like a beautiful and original melody composed by a man who knew nothing about the theory of music. What had to be done was to take the idea and relate it to the human organism. That was what we did—Engineer Gudov and we doctors.

"We got other people interested: engineers Nikolai Kapitonov, Leonid Kukushkin, Fyodor Polyakov, Alexei Strekopytov, Alexander Kakabyan; and doctors Natalia Petrova and Mikhail Akhalaya. They all contributed their talents to design and built the apparatus.

"It took some years of research and experimental work, with all the usual ups and downs, successes and failures, but we finally did it—designed an instrument that was quick and reliable.

"The conditions we worked under couldn't have been better; we have the government to thank for that. There was never any shortage of funds. We were given a specially-equipped laboratory at the Research Institute for Medical Equipment and did our experimental work at the Sklifosovsky Institute's Clinic. We did more than a thousand experimental operations on animals before we used the instrument on people."

Doctors and Engineers

Dr. Androsov continued: "The joint research of engineers and doctors proved so productive that a new institute was founded as a result—the Institute of Experimental Surgical Apparatus and Instruments. Professor Mikhail Ananiev, a surgeon, heads the staff, two-thirds of which are engineers and technicians. The Institute has, in the six years since it was founded, developed more than a hundred instruments."

Asked how the suturing instrument worked, Dr. Androsov said: "Try to visualize a severed vein or artery. The first job is to stop the bleeding. The instrument uses two clamps to stop the blood flow at both ends of the vessel. The vessel passes through special cylinders of an appropriate diameter. The surgeon turns the vein or artery inside out with pincers. Then the two halves of the apparatus are gradually brought together. When the ends of the vessel touch, a lever is pressed and tantalum wire sews the ends of the severed vessel all the way round.

"The results have been really phenomenal. Every single one of the 300 operations performed at the Sklifosovsky Clinic was successful. We've used the instrument in a case where the extremity was severed. Vera M., a young woman, was brought to the clinic after an accident which severed her right arm. The young girl, after treatment, went home not only with sutured blood vessels and nerves, but with a restored arm. Oleg L., a lathe operator, suffered a fractured shoulder. We were able to heal all the injured nerves and blood vessels with the help of the instrument. His shoulder is fine now and he's back on his job.

"I did a large number of these operations myself, but the instrument is so simple to operate that it needs only a minimum of skill. It can be used by the competent surgeon in a rural hospital." ■

The audience outside the operating room at the Institute of Experimental Surgical Apparatus and Instruments gets a close-up of just how it works.

NINA VESELOVSKAYA, STUDENT OF THE MOSCOW ART THEATER SCHOOL, MADE HER SCREEN DEBUT IN THE STARRING ROLE IN *THE SISTERS*, A MOSFILM STUDIO PRODUCTION.

THE SISTERS

Producer Grigori Roshal tells about filming the motion picture version of Alexei Tolstoy's trilogy *The Ordeal,* covering life in Russia during World War I, the Revolution and the Civil War through the lives of two sisters.

The changes in the lives of Katya (left) and Dasha reflect events in Russia through the First World War, the Revolution and the Civil War.

THE three books of Alexei Tolstoy's epic novel *The Ordeal* cover life in Russia during the First World War, the Revolution, and the struggle for the establishment of Soviet power. Combining the portrayal of historic events with profound revelation of the inner world of his characters, Tolstoy creates a moving chronicle of that grim and heroic epoch.

The "ordeal" that Tolstoy describes is the tortuous path which part of the Russian middle class had to take before they could find their place in the new society. The main characters of the novel—the Bulavin sisters Katya and Dasha, Katya's husband Smokovnikov, the poet Bessonov, worshipped for a time by both the sisters, Telegin, an engineer who eventually marries Dasha, and Roshchin, an officer who weds Katya after her first husband is killed at the front—all come from the middle class.

The worker Ivan Gora and his wife Agrippina, both fighting in the ranks of the Red Army, the sailors Chugai and Latugin, the peasant girl Anisya who afterward becomes an actress—these and many other people help the main characters of the novel find their proper place in life.

The first part of the film deals with the collapse of the old Russia and the birth of the new, with the Bulavin sisters, their mistakes, their joys and misfortunes.

Life takes the heroes of our film to all parts of Russia. Scenes are enacted in the Red Army, in the army of the counter-revolution, in the mountains and steppe, in the Crimea, the Caucasus, the Ukraine, the Volga country, in Petrograd and Moscow, in the homes of the rich, in peasant huts, factory workshops, in trains and on shipboard.

All members of the cast, which includes well-known and experienced artists as well as some talented newcomers, are very enthusiastic about the film. Katya is played by Rufina Nifontova. Two years ago, when she had just graduated from the Institute of Cinematography, I invited her to take part in the screen version I was making of Gladkov's story *The Freemen*. Her performance as heroine of the film won this young actress wide renown and at the international film festival held at Karlovy Vary she was awarded a prize for the best woman's performance.

Dasha is played by Nina Veselovskaya, a student of the Moscow Art Theater School. It is her first film.

The "sisters" Nifontova and Veselovskaya had never met each other before they started rehearsals. Now they are close friends and every day they seem to grow more like real sisters.

Nikolai Gritsenko, a popular actor of the Vakhtangov Theater, plays the part of Roshchin, the czarist army officer who at first sides with the counter-revolutionary forces and eventually becomes a commander in the Red Army. Roshchin has lived and suffered a great deal, he even reaches the verge of suicide when he realizes how fundamentally the old regime is against the people. It is then he comes to understand the great truth of the Revolution.

One of the main characters of the film is the engineer Telegin, an expansive man of great courage and devotion, with a broad understanding of people and events. The part is played by the young actor Vadim Medvedyev. It is not the first time that Medvedyev has acted on the screen and we hope his performance will rouse a warm response.

The part of the symbolist poet Bessonov, a gifted man but spiritually wasted and broken, is played by Vladlen Davidov of the Moscow Art Theater.

These are only the chief characters of our film. There are too many to mention them all.

The film's debut was warmly welcomed by audiences everywhere and the reaction of spectators and critics alike showed agreement that the actors had succeeded in conveying the book's spirit and message onto the silver screen in a vivid and lifelike manner. ■

Telegin, who marries Dasha, is one of the film's main characters. He is a man of courage, devotion and a deep understanding of people and events.

Her First Role Was Huckleberry Finn

NINA VESELOVSKAYA, *New Young Screen Star*

By Gennadi Sibirtsev

AFTER the Moscow premiere of *The Sisters,* the new wide-screen film based on Alexei Tolstoy's novel, a small crowd of reporters clamored to interview Nina Veselovskaya. She had created something of a sensation in her first motion picture as Dasha, one of the two leading roles.

The interview Nina gave followed the usual pattern of questions, with brief and somewhat different answers: She was 25 years old, a student in her third year at a theater school. Her parents were both accountants. She read a lot. She liked Pushkin, Shakespeare and Dreiser, and was especially addicted to Chekhov. She liked sports, especially swimming and skiing, and didn't care much for the more feminine occupations like sewing, knitting or cooking.

The interview had begun to fizzle out when Nina overheard a question passed between two foreign correspondents. She turned to them and said in English, "Pardon me, but I couldn't help hearing what you were saying. I don't mind answering your question at all. I'm not married."

There was a laugh all around. Nina forgot to be shy and the rest of the interview was fun and lively. One of the correspondents complimented her on her English. She smiled and said: "It's not surprising. I'm a teacher of English. Or at least I should have been. I majored in foreign languages."

"What made you switch to the stage?"

"*Huckleberry Finn,*" she answered.

The children in the neighborhood had built an improvised stage out of old boards in her backyard. An overhanging old lime tree supplied a partial curtain and the sets and costumes were whatever could be dragged out of her house and the neighbors' without the grownups seeing. Nina had played Huck because there were more girls than boys. Her performance may have been questionable, but the passion she acquired for acting was not.

Her family let her sing and act at school plays and concerts, but it was tacitly understood that she would become a teacher. Nina raised no objection, largely because she was very doubtful indeed whether she had the makings for professional acting.

But she spent whatever evenings she could spare from study at the student drama group and won major parts in all the productions. They put on plays by Molière, Schiller and Ostrovsky.

One summer three years ago, after graduation from the Tomsk Pedagogical Institute in Siberia, her parents saw her off to what they thought was a vacation resort in the Crimea. Nina never got to the Crimea. She switched trains to Moscow.

It was July, entrance examination period for Moscow's theater schools. There are six in the city. Nina chose the most difficult one to get into—the Moscow Art Theater School.

The odds were heavily stacked against her. There were more than a thousand applicants for the twenty vacant places. She thought, "And even if by a miracle I do get in, there are four more years of study ahead of me." It didn't seem to make much sense, particularly since there was a good teaching job waiting for her in September.

But she did get in and she did make good—very good indeed. After her first year she was awarded a special scholarship. Not only did it mean a larger monthly stipend than the average student received, but, even more important for Nina, it meant recognition of unusual talent.

Talking of the film, casting problems in general and of Nina in particular, Grigori Roshal, the producer, told reporters how and why Nina got the part.

There are special problems involved, he explained, in casting for a scenario adapted from a widely-read novel. The movie-going reader will have formed a preconceived picture of the character with details supplied him by the novelist. Alexei Tolstoy describes his Dasha as a girl "with soft-pink skin . . . ashen hair piled high on her head, a haughty child's mouth and searching eyes." Then there is the more subtle psychological portrait which the reader draws for himself.

A producer's problem, then, is to find the actress who can fill out this hazy outline portrait, give it dimension and body and individuality, so that the reader sees *his* Dasha live on the stage.

In the tryouts, Roshal was looking for *his* Dasha in much the same way as a reader-spectator does. He used as a test an episode in the scenario which calls for the most skillful reading.

It is three days after Dasha has been beaten by unknown assailants and left lying in a deserted street, her body contorted by the pains of premature labor brought on by shock. The child dies three days after birth. Dasha has lost all interest in life. Her husband, whom she once loved dearly, comes in. She must tell him at this moment that she no longer loves him, that they must part.

Nina, called for the audition, was given this part to read with no more than a few minutes of preparation. A harsh examination—but calculatedly so, Roshal explained, that only real talent could pass.

"As soon as Nina moved onto the stage and read her first line," Roshal said, "I knew I had my Dasha."

This film, *The Sisters*, is the first of a series of three motion pictures based on Tolstoy's trilogy with Dasha as major character. The others, to be filmed, are *The Year '18*, and *Dark Morning*.

Says Nina with a smile, "Dasha and I still have to live through the stormy events of the Revolution and the Civil War. I'm thinking of all the work and study ahead of me."

"Are you worried about it?" one reporter asked.

"Of course," said Nina. "But I love it." ■

The new star pauses in front of a billboard announcing the Moscow premiere of *The Sisters.*

Nina, who is especially fond of Chekhov, discusses her future role in his *Uncle Vanya.*

COLLECTORS

By Mikhail Grigoryev

THERE'S no accounting for collectors, or the things they collect. It's every man to his own oddities there—and some of the collections are odd indeed. Witness the man who collects cigarettes fabricated in all corners of the globe. Or the man who accumulates lead pencils, old ones preferably, and with ends chewed by famous personages. Or the very respected philatelist and numismatist—stamp and coin collector to the uninitiated—who decided that these two fields were overcrowded. He wanted uninhabited territory to explore, so he collects chunks of cast-iron pipe from buildings, new and old—a whole apartment full of them. What for? It's a question you never ask a collector.

Stamp and coin collectors, of course, are an ancient tribe and the brethren are to be found in large and flourishing numbers in the Soviet Union. But there are rare-book collectors and collectors of minerals, butterfly collectors and collectors of matchbox covers. Then there are those who collect old pipes, or rare cacti, or watches that strike the hour, or whatever else you can think of that is collectible.

Collectors are clubby people. There is the business of comparing your collection with the other fellow's, and bargaining for a trade,

Continued on next page

This is a typical evening scene at the Stamp Club. Age is no gauge for the eagerness with which these collectors pursue their pet hobby.

These school children are too young to belong to collectors' clubs, but they somehow manage to do their trading in stamps in any convenient place.

COLLECTORS *Continued*

OLD RUSSIAN MILITARY MEDALS AND ORDERS ARE THE PRIME SPECIALTY OF COLLECTOR ALEXANDER MAKAROV.

and then you need an understanding audience for the engrossing tale of how you finally tracked down this or that rare item. That's what stamp clubs and coin clubs and matchbox cover clubs are for. It must have been to make sure that no collector, no matter what he collected, would feel left out that a new club was added to the roster—this announced in the Soviet press a few months ago—a club for collectors in general.

Stamp Collectors

Among the stamp collectors—thousands of them in the Soviet Union—you find people of all ages and all walks of life. At the 1957 International Stamp Show in Moscow, the two bronze medal winners were the well-known Academician Pyotr Rebinder and fifth grade schoolboy Misha Falle, both members in good —and equal—standing of the Stamp Club, or the Philatelic Society, as you prefer.

The chairman of the Moscow Philatelic Society is Vyacheslav Merkulov, one of the most inveterate stamp collectors in the country. He is a young economist who graduated from the Moscow Institute of Economy last year.

His collection is the envy of many older and longer collectors, and so are his international contacts. Among the people abroad with whom he trades stamps are some American collectors—a schoolteacher in California, a business man in Illinois and a physician in Colorado.

Merkulov is a corresponding member of stamp clubs in England, Italy, Canada, Peru, Czechoslovakia and New Zealand. At the

This is the collection of rock specimens which helps artist Pyotr Pokarzhevsky select a color scale for his paintings.

1957 show his collection of rare Bulgarian stamps won a silver medal.

Sergei Kristi is an older member of the club. The stamp collection he now has is his second. The first one—it contained 100,000 stamps and took over thirty years to gather—was completely burned up when his house was bombed early in the last war. But this new collection is even larger. He is a specialist in Polish issues.

Coin Collectors

Some collectors double and triple in brass. Sergei Fortinsky collects coins, medals and bookplates. He claims there is a close and happy relation between bookplates and coins, even though it may not be apparent. He cites this in evidence.

In a secondhand book store which Fortinsky visits from time to time to search for bookplates, he met a venerable little lady who urged him to look at some old coins she had been keeping for nearly half a century. They were old enough, black with age and worn thin.

They didn't look like much at first glance, but Fortinsky can't resist a bargain, so he bought them—and a very lucky buy indeed for a coin collector, so Fortinsky says—a once-in-a-lifetime buy. Mixed in with the pounds of assorted valueless metal he found three very rare 300-year-old Russian coins.

Fortinsky up to now has divided his loyalties between coins and bookplates. In his interesting *Ex Libris* collection are bookmarks that belonged to Turgenev, Dostoyevsky and other famous Russian writers. His newest hobby is old books—memoirs in particular.

Book Collectors

Rare-book collectors are, so to speak, the aristocrats among collectors. Nikolai Smirnov-Sokolsky, the popular vaudeville actor, has the largest private collection of rare books in the Soviet Union. He has been book gathering for almost 50 years and his valuable first editions and autographed copies include some very rare Jonathan Swifts and one of the three copies extant of the original edition of Leo Tolstoy's *What Is My Faith?* The Czarist government

Continued on next page

MIKHAIL FRENKEL HAS A COMPLETE COLLECTION OF STAMPS ON SOVIET ARCTIC EXPLORATION SINCE 1930.

Nikolai Smirnov-Sokolsky, popular vaudeville actor, has one of the largest private collections of rare books in the Soviet Union. He has been book gathering for almost 50 years.

permitted only 50 copies of this book to be printed in 1884, and of these 47 were destroyed by the censor.

Smirnov-Sokolsky, like many bibliophiles, is a considerable scholar. He has written a hundred or more articles on the books in his collection.

Assorted Odds-and-Ends

Among the less orthodox collectors we have the artist Pyotr Pokarzhevsky, who collects minerals, butterflies and beetles. He is one of the few collectors who has a rationale for his hobby. He claims to be studying the fine shadings in color of rocks and insects.

Pavel Kiselev, an army man who retired after twenty years of professional soldiering, is a matchbox cover collector. He prefers to be called a philluminist.

And Alexander Makarov, who is a very peaceful bookkeeper in public, is a military hobbyist in private life. He collects weapons, swords, pictures—anything that has to do with Russian Army history.

Makarov has collected about 10,000 portraits of Russian generals, past and present, many of them autographed. He has nearly all the orders and medals with which Russian soldiers, from the 16th through the 19th centuries, were decorated.

Makarov knows the history of the most obscure old Russian Regiments and the long-forgotten details of military campaigns. He is often called on to act as technical consultant by film producers and theater directors.

And Georgi Baidukov, the flyer who made the epic non-stop flight from the Soviet Union to the United States over the North Pole, collects porcelain dogs.

As we started off saying—there's really no accounting for the things collectors collect. ■

COLLECTORS *Continued*

A first edition of Pushkin's *Yevgeni Onegin* (left) published during the poet's lifetime and an autographed copy of Chekov's stories are both from Smirnov-Sokolsky's collection.

One of three existing copies of Leo Tolstoy's *What Is My Faith?* also belonging to Smirnov-Sokolsky.

BEFORE THE SHIFT, THE AUTO PLANT'S POOL IS THE MEETING PLACE FOR THESE FRIENDS—AN ENGINEER, A TRUCK DRIVER, A DESIGN-ENGINEER AND A TOOL FITTER.

BUSY FACTORY POOL

By Victor Kuprianov

WORKERS' CHILDREN LEARNING TO SWIM AFTER SCHOOL HOURS.

IF YOU asked to be shown the Likhachyov Automobile Plant in Moscow, the engineers will take you around the different shops to give you an idea of how skill and material combine to make vehicles of various designs. And when you watch the new luxury ZIL (the Russian initials for Likhachyov Plant) cars roll off the assembly line, you'd think you had seen it all. But the tour doesn't stop there.

Your hosts will insist that you visit what they jokingly call the "physical fitness" shop. From the outside it looks like any other factory shop—the same dark brown brick and big, big windows. But you don't hear the hum of machinery there—just the hum of voices and laughter galore.

This is the swimming pool—Moscow's oldest, incidentally. It's old in years (completed in 1930) but modern in equipment. This was once the favorite site of the USSR championship tussles in swimming, diving and water polo. Although now it is eclipsed by Moscow's 50-meter pools, its popularity has not diminished in the least. It still gets a daily attendance of about 400 from the age of 5 to 60.

The pool is a 25-meter affair with lanes for racing, a sector for diving and all facilities for learning. They say if it has anything to do with water sports—you'll find it at the ZIL pool.

Activities are manifold. The pool's day begins at 7 A.M. to give the morning shift a bit of exercise and a swim before starting the job. This was the idea of tool foreman Boris Anufriev who once held the USSR diving title. He believes a man needs a bit of limbering up before the job, and swimming is his choice of morning PT.

No one is too old to swim, says Boris Anufriev. The oldest member of the early morning swim club is 60. Boris Anufriev is just a bit under that himself. His group is made up of all ages. You get the 18-year-old youngster churning up the lane in the hope of a record performance perhaps, and you find the older generation of granddads and grandmas paddling about with their leisurely strokes.

At 8 A. M. they all leave the pool and youngsters come. These are the children and grandchildren of those who were there an hour earlier. And all around the clock to midnight—one group replaces another.

The factory swimming pool is more than just a place to come for a good time. While you're having fun they'll teach you to swim the real way. They'll help you improve on your diving. People come for a number of reasons. Some want to learn how, others want to improve on their techniques, still others just want to have fun and some come to get rid of surplus poundage.

Water polo is an important part of the pool's activities. The factory teams rank among the best in the country. The pool also sponsors all sorts of contests on a local scale and sends teams to outside tournaments as well.

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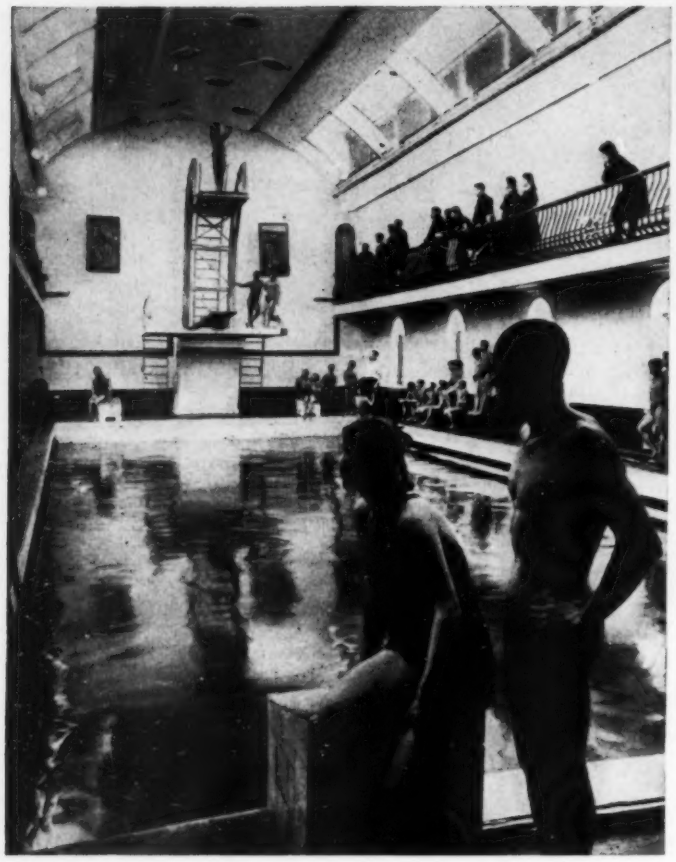


THIS FACTORY POOL CAN TRAIN BOTH ADVANCED AND BEGINNERS IN AQUATICS.

BUSY FACTORY POOL *Continued*

The swimming pool charges no admission. All that is needed to get in is medical clearance. The pool has its own medical staff which examines all comers regularly. And this medical supervision is strict.

Much of the day at the pool is given over to the youngsters. And it isn't just a matter of splashing around. The boys and girls are taught how to imitate the champions and are prepared for contests at all levels. While health is the main goal, the instructors at the pool have an eye open for future champions. Valentina Nikolayeva, who has been teaching swimming since 1939, takes particular pride in 17-year-old Ira Bogdanova. Ira first came along as an awkward and clumsy kid. But Valentina Nikolayeva succeeded in whipping her into shape and now Ira is taking a course in physical education in college. Her ambition is to become a swimming instructor herself and maybe a "real good swimmer."

Joining the swimming class is simple. All a youngster needs is permission of the school doctor. Then you come and see Valentina Nikolayeva who sends you to the pool doctor. But medical examination is nothing, the youngsters say. The worst is yet to come! I decided to find out what the "worst" could be and waited around to see.

I watched the youngsters gather at the entrance to the pool, with Valentina Nikolayeva seated at a table peering at a list of names over the top of her glasses. She'd look at the list, look up at the individual concerned and back again at some notes she had. Everything went well until her glance rested on 12-year-old Sasha. She had said nothing yet but I noticed Sasha becoming as red as a beet. Suddenly she looked up and asked: "Why weren't you here last time? Were you sick?"

Sasha mumbled something very incoherent. Meanwhile his eyes seemed to be drilling holes in the floor, and he was as red as a hot tamale.

"Oh, so you got a bad mark in arithmetic!"

Sasha shifted uncomfortably. He definitely wasn't enjoying this interview. And all the other youngsters snickered—some even made caustic remarks.

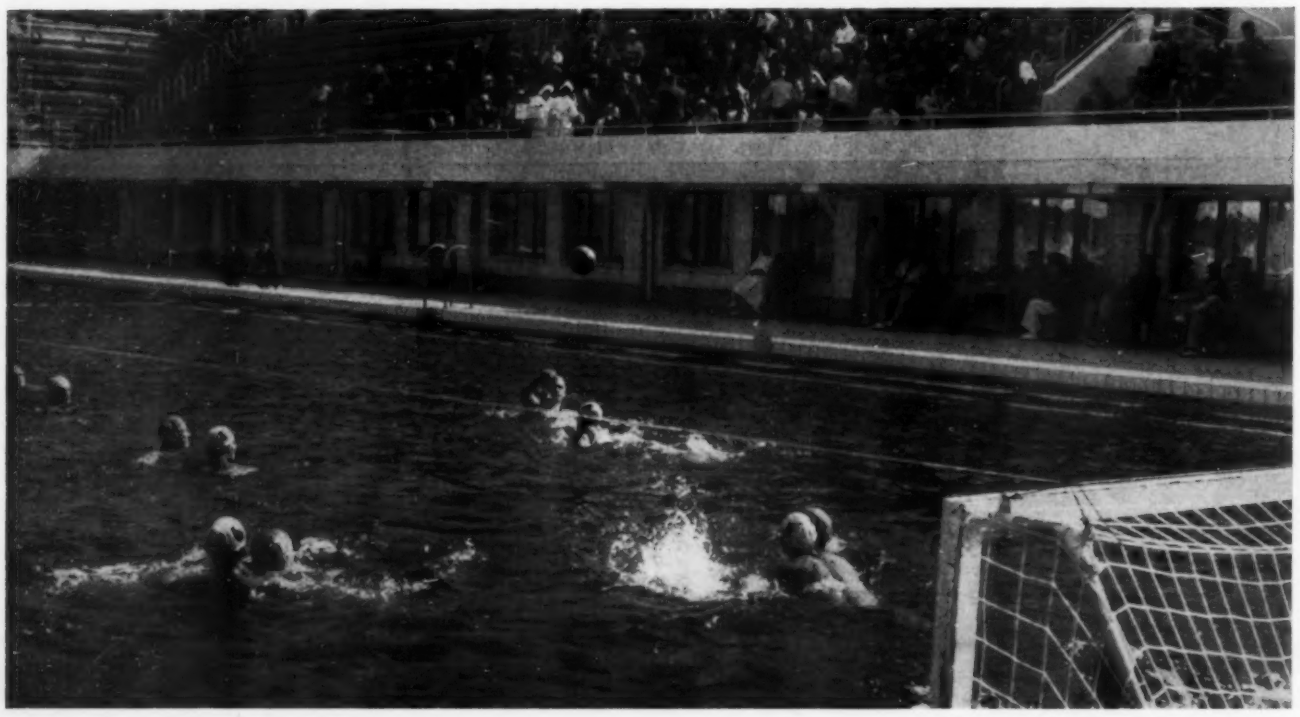
Valentina Nikolayeva later explained the procedure to me. "We're not only concerned with the youngster's health. We're interested in his scholastic work as well. Anyone who gets a bad mark is ineligible for training until he patches things up. And he can be held ineligible for as much as a month at a time."

"But suppose you're getting ready for some big tournament, isn't there a danger of one of your 'stars' being made ineligible this way?"

"We've got to be strict," was her reply. "At all tournaments the contestant is required to show his report card to the judges. If there's a bad mark in any one subject—out he goes. Then there are the parents, who are always afraid of over-emphasis on sports and they're prone to hold the instructors responsible for bad marks, so naturally they've got to be strict."

Valentina Nikolayeva's influence can certainly be felt. While the youngsters wait for their turn in the pool, they don't waste time. I saw them all with their books intently reading up on their assignments. No one wants to get sent home because of a bad mark. ■

WATER POLO CONTEST. COLLEGE, STADIUM AND FACTORY POOLS DRAW THE CROWDS TO AQUATIC EVENTS AND SWIMMING CONTESTS THE YEAR AROUND.



ARKADI VOROBYOV, ONE OF THE MOST POPULAR SOVIET WEIGHTLIFTERS, SET THREE NEW USSR RECORDS IN HIS PERFORMANCE AT THE WORLD CHAMPIONSHIPS IN TEHERAN.

Soviet Weightlifters

Win Six of Seven Championships

THE YEAR of 1957 has passed. The excitement of sport rivalry on the green soccer fields, black track lanes, tennis courts and rippled surfaces of rivers and lakes has subsided. The results of the season have been summed up and sport equipment stored away for a brief lull. The last to summarize achievements were the weightlifters.

For five days, November 8-12, the strongest barbell performers of 21 nations competed in the world championships in Teheran. During these five days Soviet athletes ascended the dais of honors six times while the band played the Soviet national anthem.

* * *

The first to launch the tournament, as usual, were the bantamweights. At the 1956 Olympic Games in Melbourne spectators witnessed a sharp duel between two outstanding athletes, Vladimir Stogov of the Soviet Union and Charles Vinci of the United States. The American won that time, amassing a new Olympic record total of 342.5 kg.

Vinci did not come to Teheran, but the bantamweight competition was closely contested and even more thrilling. After Stogov had scored a 107.5 kg. press, thus repeating the USSR record he had established, the onlookers realized that the Soviet lifter was in a position to chalk up a remarkable total. While in excellent form a little over a year ago in Melbourne, Stogov had then only succeeded in raising 105 kg. in the press, yet went on to run up a total of 337.5 kg.

The next exercise was the snatch. The barbell carried a record weight of 105 kg. Back in 1956 Stogov lifted 105 kg. but after the weigh-in, following the exercise, the athlete proved to be slightly over 56 kg. and this prevented the achievement from being recognized as a new official world high.

The situation in Teheran was quite different. The scales read 105 kg. exactly for the barbell weight and 56 kg. exactly for the performer. Thus, a new world record was established.

The last exercise was the jerk. Nobody by this time doubted a victorious outcome for Stogov, who was 12.5 kg. ahead of his nearest competitor. What aroused the excitement of the fans was whether they would witness a new triple movement record. Stogov registered 132.5 kg. in the jerk and regained the world bantamweight crown.

* * *

Two old rivals met again in the featherweight class—Isaac Berger (USA), the 1956 Olympic champion, and Yevgeni Minayev (USSR). In 1956 the former proved superior in paced movements and triumphed over the Soviet entrant. But a year had passed. During this time the young Soviet lifter's skill had improved considerably. He became the possessor of the world's best achievement—357.5 kg.

Meanwhile, Berger, too, had bettered his results. Whereas in Melbourne he lifted 107.5 kg. in the press, his best performance in Teheran equalled 115 kg. Minayev registered 117.5 kg. to eclipse the world high by 2.5 kg. However, the true weight on the scales amounted to 117.2 kg. and Minayev's new record went down in the official tables as equalling an even 117 kg.

Sebastian Mannironi, a young Italian strongman, proved the best in the snatch with a 107.5-kg. effort. Minayev came in second with 105 kg. and Berger, third—102.5 kg.

Minayev and Berger both started off in the jerk with 132.5 kg. The Soviet sportsman had failed with this weight in Melbourne, but now it was lifted with ease. Berger realized that his only chance was to stake his all. He let through one weight after another.

Minayev's last effort was 140 kg. which brought the athlete's total to a world record-smashing 362.5 kg. Mannironi lifted 142.5 kg. to score a 352.5-kg. total.

In order to catch up with Minayev, Berger approached the barbell when it carried 145 kg. But the weight was not lifted and Yevgeni Minayev became the world champion and record-holder in his category.

* * *

Two years ago the name of Victor Bushuyev, a Soviet lightweight, was unknown outside the Soviet Union, and only a few inside the country had heard of him. Together with thousands of other young people, Victor had helped build the Gorky Hydropower Plant on the Volga. His athletic career started in 1955 in the city of Gorky in the Energia Sports Society. He came to Moscow in 1956 to participate in the USSR Sports Festival. There he placed seventh with a 357.5-kg. total. But vigorous training in the following year produced brilliant results: in August 1957 Bushuyev captured the lightweight crown in the Third World Youth Games and set a new world record. He ended the year by taking the world title.

Many athletes had finished in the press when Bushuyev and Cziepulkowski of Poland ascended the competition platform. Bushuyev easily lifted 115 kg. and then 120 kg. An attempt to raise 122.5 kg.

Continued on next page

Soviet Weightlifters *Continued*

was unsuccessful. Cziepulkowski, too, could do no better than 115 kg.

After the snatch the Pole relinquished second place to Ivan Abadjiev of Bulgaria. Like Bushuyev, the Bulgarian started with 110 kg. and subsequently they lifted 115 kg. and 117.5 kg.

Once more, in the jerk, the majority had completed their performance when Bushuyev approached the barbell for the first attempt. A successful jerk and his total of 380 kg. proved unsurpassable and another Soviet sportsman won the world championship gold medal.

* * *

The rivalry between middleweights Fyodor Bogdanovsky (USSR) and Tommy Kono (USA) was resumed in Teheran.

Kono took the lead after the press. Bogdanovsky trailed by 2.5 kg. However, the situation changed after the snatch, where the Soviet contestant registered 127.5 kg. and the American had to be satisfied with 122.5 kg. following two unsuccessful tries at 127.5 kg. Bogdanovsky now held a 2.5-kg. lead.

The outcome depended on the results in the jerk. Kono scored 162.5 kg. and Bogdanovsky, 160 kg. Thus, both challengers had the same total of 420 kg. By weighing less himself than Bogdanovsky, Kono gained top honors. The Soviet sportsman received a silver medal as runner-up.

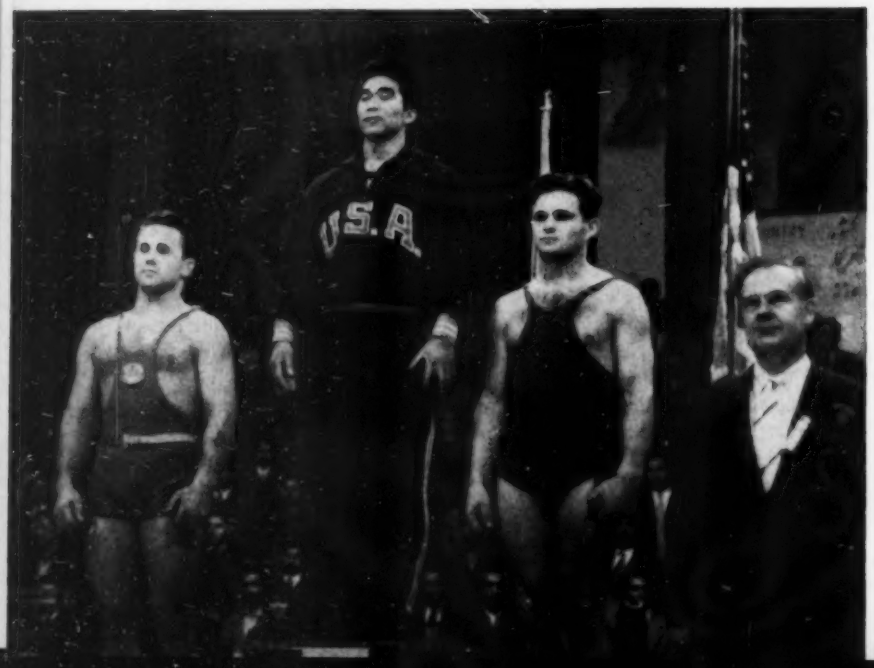
* * *

Trofim Lomakin. The name of this Soviet weightlifter first echoed in the sport world during the Olympic Games in Helsinki where Lomakin emerged victorious in a tense duel with the world-famous American light-heavyweight S. Stanczyk and won a gold medal. Since then Lomakin has been seen annually in the group of prize-winners in USSR and international tournaments. At the 1957 world championships Lomakin's most dangerous rivals were J. George (USA), holder of an Olympic bronze medal, and J. Mansouri (Iran). The latter two ended the press with the same result—130 kg. The Soviet athlete let the weight through and asked the judges to put 135 kg. on the barbell. He took this weight with ease. Lomakin still had two more attempts. Everyone expected that the weights would respectively be 135.5 kg. and 140 kg. But Lomakin's request was 142.5 kg. After one unsuccessful effort, the USSR lifter registered the weight on outstretched arms.

Lomakin and George both showed 132.5 kg. in the snatch, but the former again strode ahead in the jerk. He began with 165 kg. George twice failed to lift 167.5 kg.

At this point the new world champion, Trofim Lomakin, resolved to break the USSR record in the jerk and establish a new world high for the triple exercise. The first two tries with 175 kg. were failures but the third and last saw the weight taken faultlessly.

In the middleweight competition Tommy Kono of the USA team (center) won over Fyodor Bogdanovsky (left) of the USSR, who took the silver medal.



Among the light-heavyweights, Trofim Lomakin (center) made a new world mark in his event. J. George (USA) was second and J. Mansouri (Iran) third.

Two Soviet strongmen who enjoyed particular popularity in Teheran were Arkadi Vorobyov and Alexei Medvedev, who chalked up the greatest triumphs in the competition. They were scored in different ways: Vorobyov vied with metal (he lacked a worthy rival) while Medvedev met the challenge of Selvetti, the Argentine giant, who in the Melbourne Olympics had the same total of 500 kg. as the American heavyweight Anderson.

Arkadi Vorobyov marked up three USSR records simultaneously—145 kg. in the snatch, 180 kg. in the jerk and a total of 470 kg. In the press the army officer from Sverdlovsk repeated his own world record of 147.5 kg. shown in Melbourne.

Arkadi approached the barbell ten times and not once did he let the metal beat him. He really deserves the name of a "man of iron."

The battle between heavyweights Medvedev and Selvetti, the Olympic silver medallist, was exceptionally keen. In the press the Argentinian gained a 10-kg. lead over Medvedev who had lifted 165 kg. This could have decided the issue since Selvetti had already shown his strength in the next exercises before the start of the title tournament. The Soviet athlete, however, remained unperturbed. Medvedev launched the snatch exercise with 142.5 kg., whereas Selvetti could only master 140 kg.

Adding another five kilograms, Medvedev finished the snatch with a new USSR achievement of 147.5 kg. The Argentinian's lead was cut to 2.5 kg. Then came the all-deciding jerk exercise.

While the weight was not heavy on the barbell, Selvetti suddenly came up to the Soviet team doctor and asked for permission to inhale oxygen which Medvedev had just breathed. The Argentinian looked very fatigued. After he had been given oxygen as well as liquid ammonia, he felt better and resumed the battle.

The Olympic star lifted 170 kg. Mäkinen of Finland and Pigaiani of Italy did better than he. Then Medvedev came along with a 180-kg. lift. Selvetti asked for 185 kg. but this weight proved too much for him.

Medvedev scored a 187.5-kg. jerk and became the sixth member of the Soviet team to win the world title. His total of 500 kg. is a new Soviet record and repeats the Olympic high. Selvetti finished as runner-up with 485 kg. and Pigaiani finished third with 452.5 kg.

* * *

At the end of the tournament, one of the foreign coaches offering his congratulations to the Soviet athletes remarked that they fully merited the golden shower of medals in Teheran. The USSR team received six out of seven gold medals and one silver medal. The total for the USSR team was 33 points, or 24 points ahead of the Americans and Iranians, who occupied second and third places, respectively. ■

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GIRLS OF THE PAMIR MOUNTAIN REGION. *(See story on page 32)*