

SOVIET LIFE

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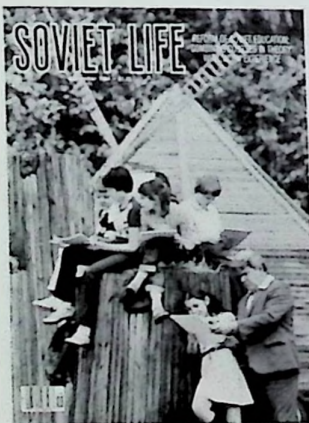
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Front Cover: Igor Volkhov (for right) is an industrial arts teacher in Reutovo, a small township in Moscow Region. See article on page 21. Photograph by Vladimir Radionov.

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Victor Karasin describes the role played by Kharkov students in the city's cultural life.



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Dmitri Dmitriyev tells how cosmonauts are helping geologists search for oil.



LETTERS TO THE EDITOR

As the International Chairman of the Green Party, I was pleased to see the emphasis your publication has placed on addressing environmental issues. Please keep the articles coming.

Randall Toler
Arlington Heights, Illinois

From reading your magazine people all over the world, including me, dream of peace, and maybe someday this dream will come true.

Christine Shillow
Columbia, Pennsylvania

Thank you for the excellent article on Gogol in your last issue!

Ute Cohen
Las Vegas, Nevada

We applaud you for your interesting and inspiring article about Boris and Valentina Tsitovich. [See "Sharing Their Love of Learning," SOVIET LIFE, June 1984—Ed.] We are most interested in learning the ways

of the people of your country. The article about Yelochka gave us a lot to think about in terms of creative teaching techniques. We hope to hear more about these good people and others like them in the future.

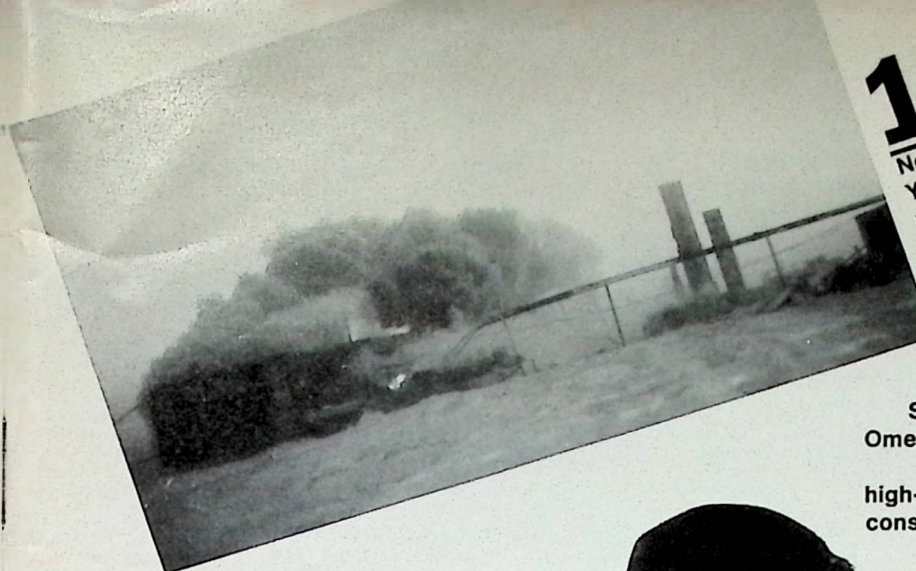
Bernice Massey
Bon Agwa, Indiana

I have subscribed to your magazine for several years; I have enjoyed it very much. It is very interesting and informative. Your writers and editorial staff do an excellent job.

Vernon Gilly
Ocean Springs, Mississippi

I find SOVIET LIFE a most interesting publication—I am particularly fascinated by the descriptions of folkways in the many different regions. The amalgam of these many peoples and their varying traditions has woven a very beautiful living tapestry.

Amy Hein
Cherry Hill, New Jersey



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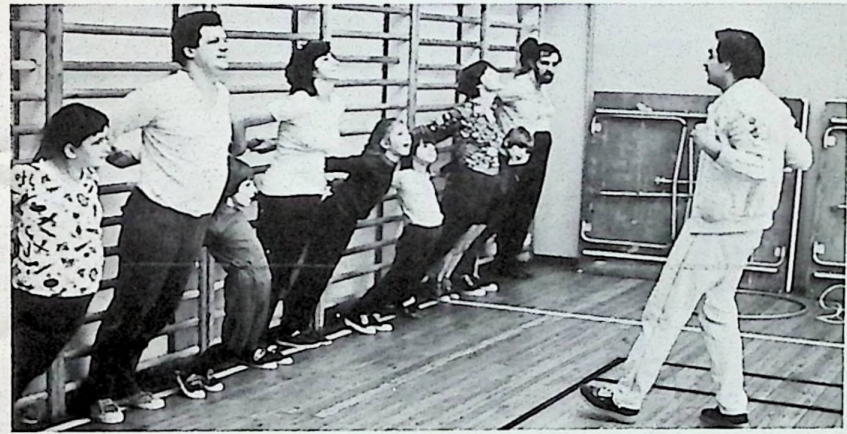
The folk arts of Khakassia are highlighted.



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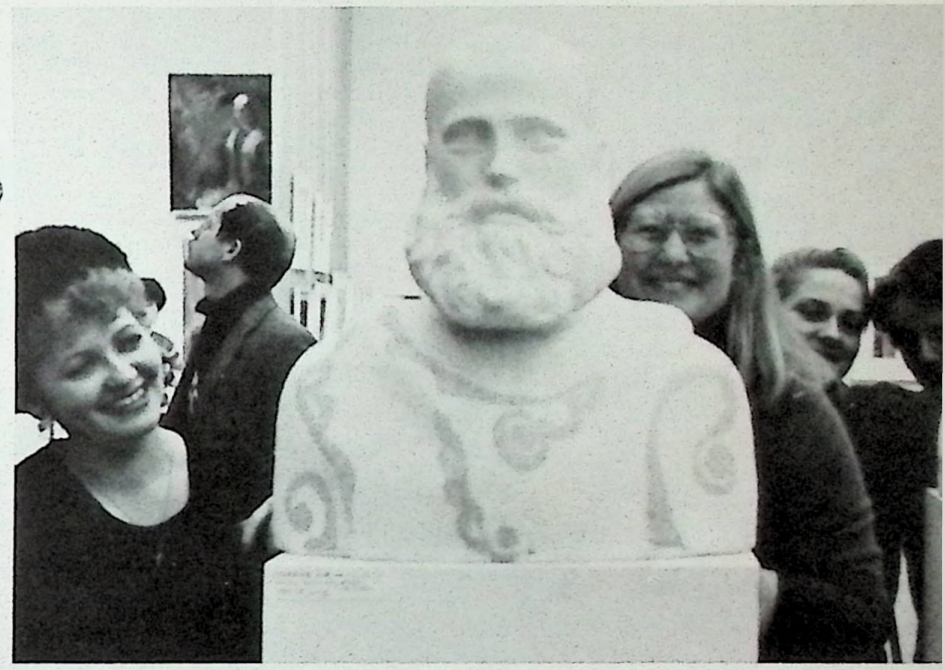
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16 Peace lessons have become a traditional part of opening day exercises at schools all over the USSR.



EDITOR'S NOTES

EVERY TIME someone asks me why I give so much of myself at school, I reply, "It's easy because I love my job and it makes me happy," says a schoolteacher from Yerevan, capital of Armenia. She is convinced that "every lesson can be and *should be* a creative festival, a quest for truth."

Examples of her lessons are only one item in a block of material in this issue devoted to education. Another is the round table of eminent scholars, educators, teachers and parents who discuss the Soviet school system. Our new commentator, Simon Soloveichik, shares his thoughts on the reasons for the "education boom" and on the kind of family environment in which children should be raised. This year September 1—the first day of school—will be a national holiday, the Day of Knowledge.

Last April the Supreme Soviet of the USSR passed a decree on the reform of general education and vocational training. Nine out of every 10 adults took part in the discussion on the school reform. The reform is not the bulldozing of the established system of education, but the improvement of it.

Vladimir Lenin's idea of a single labor polytechnical school underlies the Soviet school system. But during various evolutionary stages of the Soviet state it has been put into practice in different ways, according to the needs and resources of Soviet society. Combining study with socially useful work, with the universal vocational training of students, is the task we are now tackling.

The USSR Constitution guarantees citizens of the USSR the right to work, including the right to choose their trade, profession and type of job in accordance with their inclinations, abilities, training and education, with due regard for the needs of society. The school reform will help all pupils discover their interests and abilities and give them a new sense of involvement in the life of society.

And one more point: Besides the science courses that are being expanded, the number of courses in the humanities in our school curriculums are being increased. Why? Our ideal is a harmoniously developed personality, an imaginative individual who can create beauty and who can experience the supreme joy of being human.



EVERYONE FOR PEACE

By Vladlen Kuznetsov



IN A SPEECH to voters in Kuibyshev District in Moscow on March 2, 1984, Konstantin Chernenko said: "The policy of the powers possessing nuclear weapons is of particular importance in our time. The vital interests of all mankind and the responsibility of state leaders to the present and future generations demand that relations between these powers be subject to certain norms. In our view, these norms could be roughly as follows:

- To consider prevention of a nuclear war to be the prime aim of a state's foreign policy; to preclude situations likely to lead to a nuclear conflict. And should such a danger arise, to hold consultations without delay in order to prevent a nuclear conflagration.
- To renounce propaganda of nuclear war in any of its variants, either global or limited.
- To assume an obligation not to be the first to use nuclear weapons.
- Under no circumstances to use nuclear weapons against nonnuclear countries which have no such weapons on their territories; to respect the status of the nuclear-free zone already established and to encourage the creation of new nuclear-free zones in various parts of the world.
- To prevent the proliferation of nuclear weapons in any form; not to transfer such weapons or control over them to anybody; not to deploy them on the territories of countries where there are no such weapons; not to extend the nuclear arms race to new spheres, including outer space.
- To work step by step, on the basis of the principle of equal security, for a reduction of nuclear armaments with a view to finally destroying all types of them.

"The Soviet Union has made these principles the basis of its policy. We are prepared to reach agreement with other nuclear powers at any time on jointly recognizing norms of this kind and on making them mandatory. I think that this would accord with the fundamental interests not only of the participating countries but also of the peoples of the whole world."

September 1, 1939—the thoughts of people the world over constantly go back to that day when World War II broke out, to the consequences and the lessons of that war. This is only natural because the present and the future are not cordoned off from the past by an impenetrable wall. The past warns against repetition of mistakes. It exists for people to derive wisdom from it. Experience and lessons of the past are a storehouse of wisdom for us today, if only we avail ourselves of it in promoting the causes of universal peace and international security.

Humankind survived World War II at a cost of 55 million lives. But would it live through a third world war? Scientists and experts across the board are unanimous that it would not. For the first time in history countries possess the means of conducting warfare that would bring about the destruction of all life, the obliteration of civilization on Earth.

People in the Soviet Union believe that a new conflagration can be avoided, that war is not inevitable or fated. They believe this, first of all, because the potential for peace and of the opponents of war is in no way inferior to the potential of those who think that the use of arms is a "legitimate" means of resolving international disputes and is the most weighty argument in the struggle between ideologies and outlooks. Second, war, which is launched precisely to vanquish, has lost its original "meaning" and "rational" goal in that a war today would be an all-destructive conflagration, and no one would survive to claim the victor's laurels. Third, humankind has always possessed the instinct of self-preservation, and today the instinct is stronger than it has ever been, having been reinforced by the experience of two tragic world wars.

It is just as possible to avert a new war as it would have been to save the world from Hitler's aggression. But is it worthwhile to bring up now what might have been and what wasn't achieved, namely, that the Second World War might have been avoided? Indeed it is. This is not an idle or purely historical question, but a matter of vital importance, something of topical significance because once again preventing a world disaster, this time a disaster of apocalyptic proportions, is at stake.

A digression into history is, furthermore, essential because new generations, for whom World War II is an "unknown war," have grown up since 1945. Young people, in particular, ought to know how wars begin and how they are waged, what causes them and what they entail, and how to recognize the true culprits and instigators.

History

Hitler began preparing for war immediately after he assumed power, and the people who helped Germany rearm with the thoughts of directing its expansion eastward were feeding a monster.

Following rearmament, Germany embarked on forming military-political alliances. In 1936 a pact with Japan was concluded in Berlin. In 1937 Italy joined the pact. The Nazi dictator conceived the idea for the organization of a "great European coalition against Soviet Russia," and even if he were to fail to muster the full-blooded support of certain European capitals, he counted on their "tacit assent" or "well-disposed neutrality."

Reading the intentions of the Hitlerite clique, the Soviet Union proposed the establishment of a joint front against the aggressor, putting the combined strength, including military, of the USSR and the Western powers against it.

In 1933 the USSR first proposed setting up a system of collective security in Europe.

In 1933 and 1934, on the initiative of the Soviet Government, talks were held on a collective security treaty in Europe (a so-called Eastern Pact).

In May 1935 the USSR signed treaties with France and Czechoslovakia guaranteeing mutual assistance.

In March 1938 the Wehrmacht took over Austria. The Soviet Union was the only state to condemn this act of aggression.

In March 1939 the Nazis invaded Czechoslovakia. The Soviet Union was again the only power to condemn this act.

In April 1939 the Soviet Government sent a draft of a mutual assistance pact to Great Britain and France. It included the obligation to render each other immediate aid of all kinds, including military, in the event of aggression in Europe against any of the signatories. There was also a provision containing guarantees by the Three Powers to some of the weaker European nations—in particular, Poland—that might well be the next to suffer Hitler's aggression. However, no Anglo-Franco-Soviet accord was reached.

Thinking back on that time, Winston Churchill, a major statesman and the Prime Minister of Great Britain for most of the Second World War, was to write in his memoirs many years later that, in the light of historical perspective, Great Britain and France should have accepted the Russian proposal. He took the view that such a triple alliance in 1939 might have evoked serious alarm in Germany, and no one can prove that war might not have been forestalled.

What could the Soviet Union do in those circumstances? The last opportunity to put up a collective front against Nazi aggression and stave off a world conflict had passed. With all of the limited possibilities of reaching agreement with the Western powers on joint resistance to the aggressor exhausted, the USSR was obliged to accept the nonaggression pact with Germany. While in no way underestimating the fascist threat or harboring any illusions as to Hitler's intentions, the Soviet Union bought itself time (almost two years) to reinforce its defenses.

What History Shows

The confidential review of Soviet foreign policy prepared for Churchill's War Cabinet by the Foreign Office on April 29, 1944 (and since made public), recognized that the clearly defined goal of the foreign policy of the Soviet Government was to avoid war and, at the same time, to carry through imposing plans for industrial and social development.

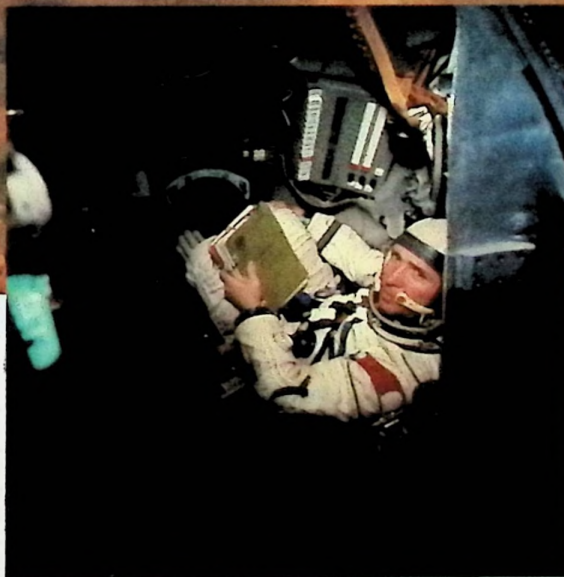
To save the world from the encroachment of Hitler's Germany through collective efforts was the aim behind all of the Soviet Government's endeavors. In its statement to the governments of Great Britain, France and the United States in 1938, the Soviet Government expressed its readiness to participate in collective actions decided on jointly to check the further development of aggression and eliminate the heightened danger of another world war. "Tomorrow, it may be too late," the statement read, while today there is still a chance if all countries, especially the Great Powers, adopt a firm and unambiguous stand in regard to the collective salvation of the world."

"Collective salvation of the world"—only a collective approach could save it. But this approach did not prevail.

Continued on page 9



This photograph taken in space shows the Kirghiz Range around the city of Frunze and the irrigation system in Southern Kazakhstan. Inset: Cosmonaut Valentin Lebedev aboard Salyut 7.



The Ust-Urt Plateau takes up about one-fourth of the territory of Kazakhstan, in Central Asia. Scientists maintained that theoretically the best geological conditions existed there for large deposits

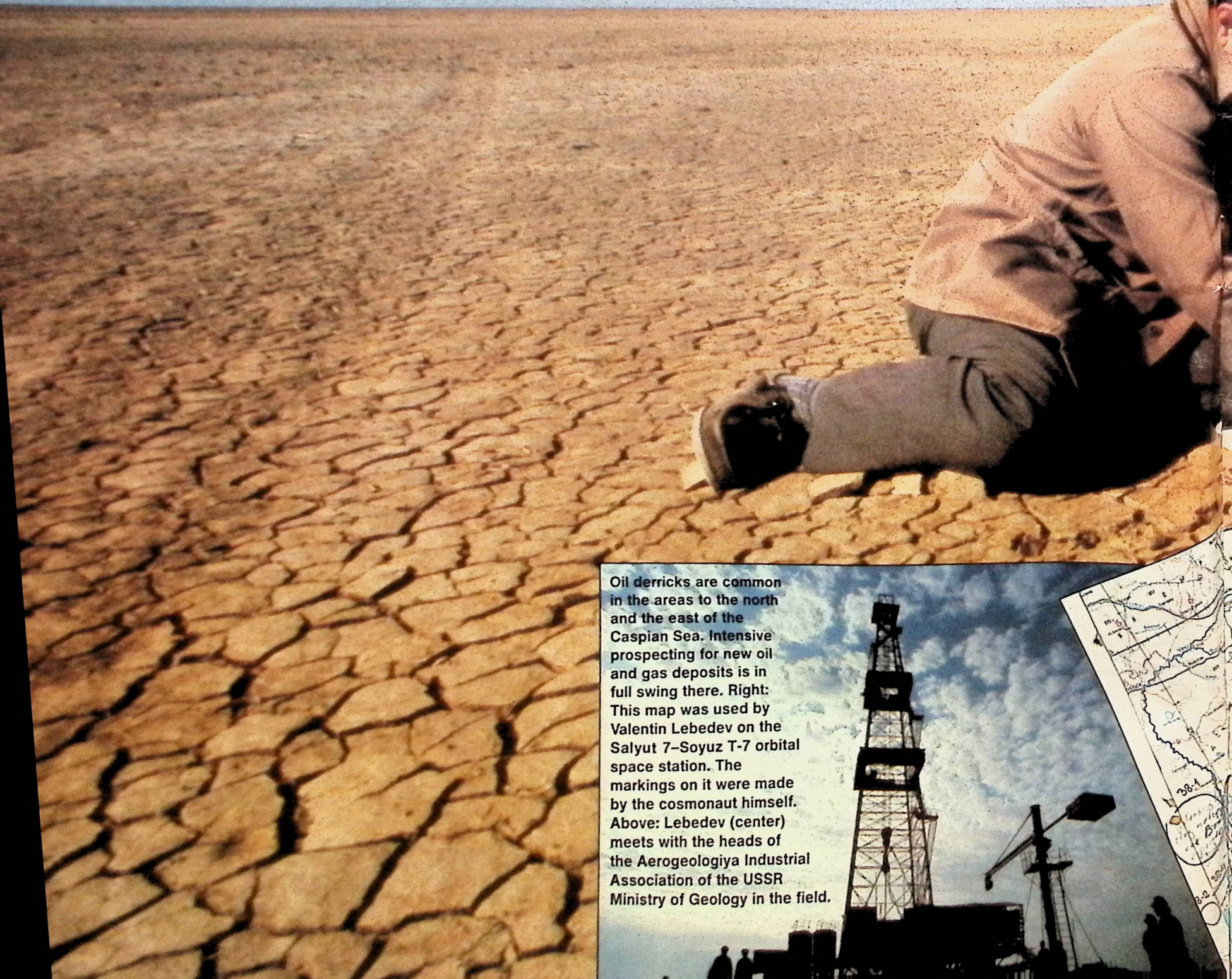
of oil and gas. But expeditions to the area were coming up empty-handed because of the layers of limestone, clay and sand covering the region. Then cosmonauts in space stepped in to lend a helping hand.

SEARCHING FOR OIL IN OUTER SPACE

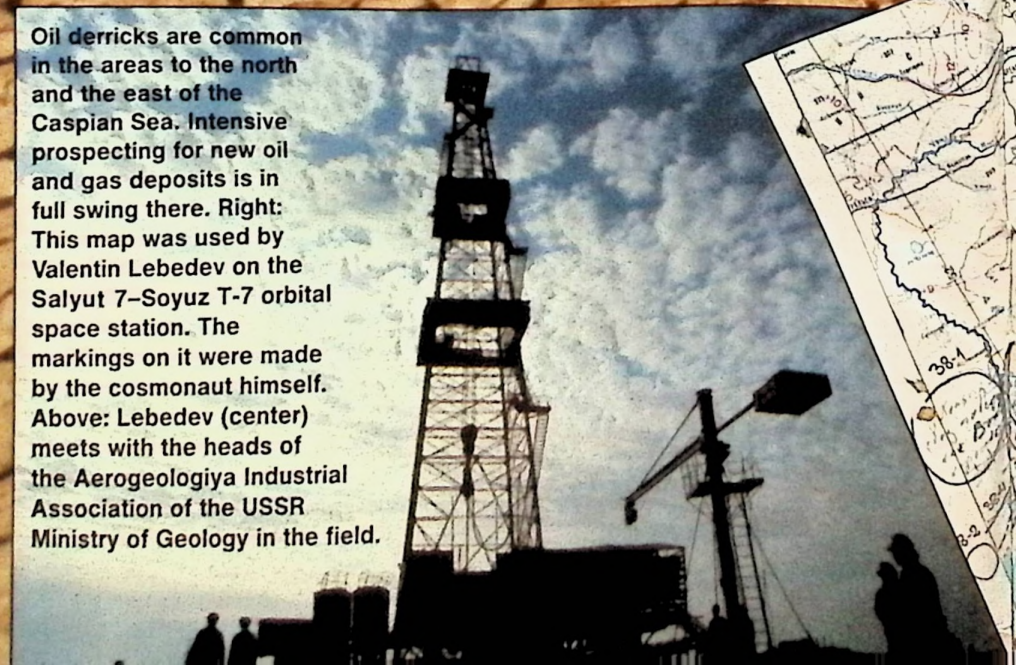
SEARCHING FOR OIL IN OUTER SPACE

By Dmitri Dmitriyev
Photographs by Vitali Karpov

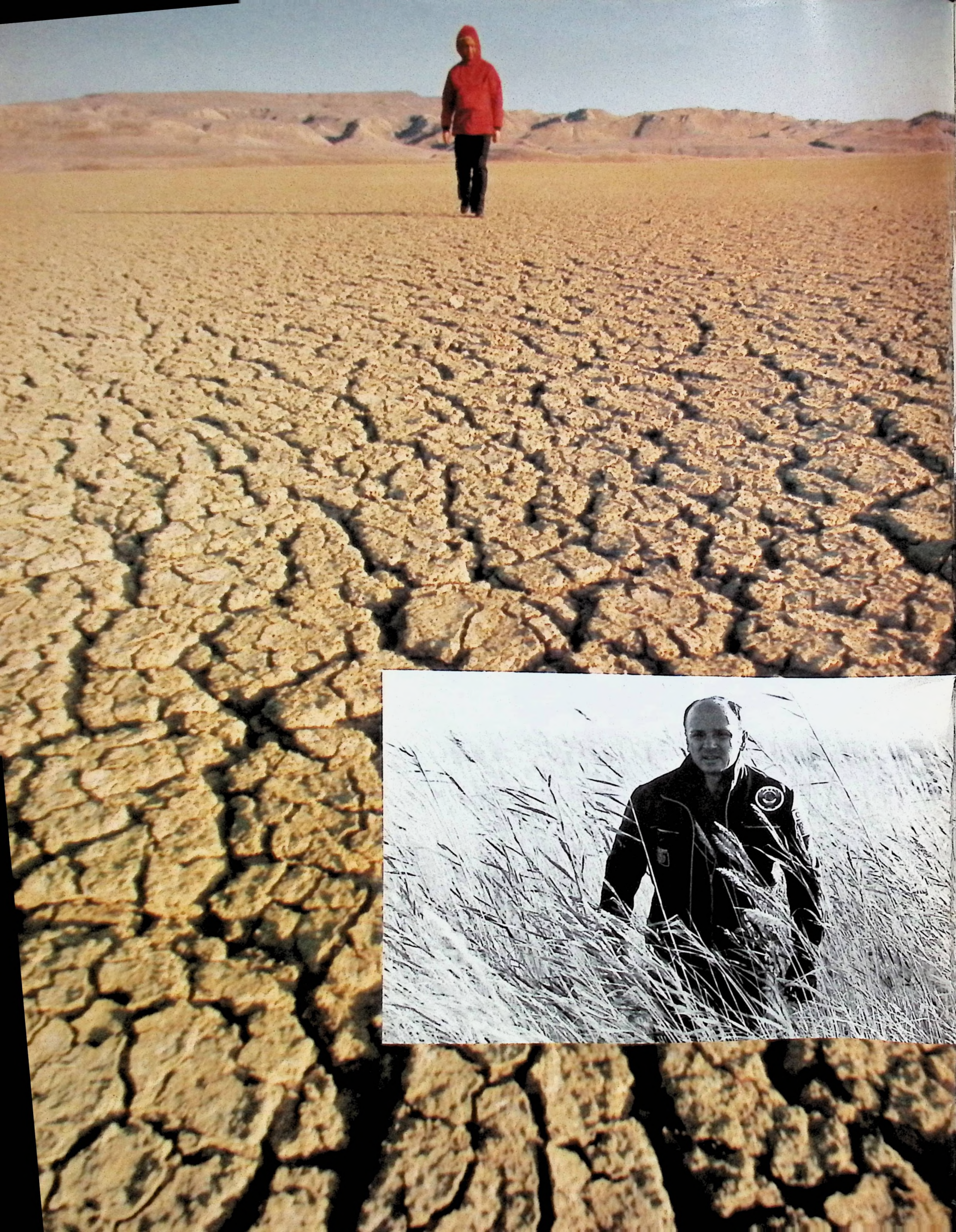
The Kazakh Steppes, as flat as a tabletop, extend for kilometers in all directions for as far as the eye can see. But from outer space Valentin Lebedev saw a strange circular formation about 40 to 45 kilometers in diameter located there. Work has begun to determine whether the site is suitable for an oil or gas field.



Oil derricks are common in the areas to the north and the east of the Caspian Sea. Intensive prospecting for new oil and gas deposits is in full swing there. Right: This map was used by Valentin Lebedev on the Salyut 7-Soyuz T-7 orbital space station. The markings on it were made by the cosmonaut himself. Above: Lebedev (center) meets with the heads of the Aerogeologiya Industrial Association of the USSR Ministry of Geology in the field.







Facing page: Something like a moonscape, this *takyr* (an area covered with clay) is located on the arid Kazakh Steppes. Inset: Water has revived the mud-cracked land. Artesian wells supply the thirsty soil with the scarce "liquid gold"—water. The irrigated hectares produce strong varieties of grasses.



In prehistoric times (prior to 65 million years ago) Tethys, a sea covered a vast territory, occupied almost the entire northern part of the Eastern Hemisphere. "All things change," a philosopher once said, adding that one cannot enter the same river twice. Today one cannot enter Tethys at all. Over millions of years the processes of tectonics elevated the sea floor, and in places where the processes continued, the Caucasus, Alps and Himalayan mountains appeared. The irregularities of the prehistoric sea bottom's floor smoothed out, and wind and waves wore down the sharp mountain peaks and razed hills to ground level. Fractures in the Earth's crust, evidence of Plutonic processes, gradually filled with crushed rock, and many mountain regions became tableland.

One such region, the Ust-Urt Plateau, which takes up about 25 per cent of the entire territory of Kazakhstan, lies near the eastern coast of the Caspian Sea. A deep fracture splits the plateau, and the friable rock in it goes down to a depth of 20 kilometers. Theoretically, scientists believed that the ideal conditions for the accumulation of salts and organic matter—the basis of oil, natural gas and bituminous shale—exist there. Many scientific expeditions traveled to Ust-Urt, but they were unable to locate any deep fractures because of the thick blanket of limestone, clay and sand covering the region.

Then Soviet cosmonauts Valentin Lebedev and Anatoli Berezovoi stepped in to lend a helping hand. Aboard the Salyut 7 orbital station they photographed a broad section of the Caspian region from a height of 300 kilometers. Apparently large geological formations are easily distinguished only from great heights. Studying the photographs taken from space, scientists found that they clearly show deep structures hidden under sediments and sand dunes, sand and peat deposits and forests. Incidentally, they also discovered that the higher the point of observation, the deeper the insight into the region. The photographs from space can be called fluoroscopic since they provide a glimpse into deep structures and help distinguish fractures that extend for thousands of kilometers.

Scientists have found that space-based geology greatly accelerates the time needed to study structures conducive to fuel deposits. Geological prospecting based on space photography and orbital observations has revealed 87 such structures in a matter of five months. Some of them hold a promise of containing commercial oil and gas deposits.

Six geological parties are currently completing bore-drilling operations in the floor of the former Tethys Sea in the Caspian region. Cosmonaut Valentin Lebedev participated in this part of the work, too. He was recently awarded the badge of honor "For Merit in Geological Prospecting."

These rock formations on the Ust-Urt Plateau took millions of years to form. Above: On several occasions Valentin Lebedev took over the controls of an AN-2 biplane to survey the area he had photographed from space.



THE DIALECTICAL UNITY OF THEORY AND POLITICS

Selected Speeches and Articles by Konstantin Chernenko

Politizdat Publishers, the publishing house of political literature, in Moscow has recently issued a book of selected speeches and articles by Konstantin Chernenko, General Secretary of the Central Committee of the Communist Party of the Soviet Union and President of the Presidium of the USSR Supreme Soviet. The collection, titled *Party and People United*, covers the period from 1976 to April 1984.

KONSTANTIN CHERNENKO has played a major part in elaborating the most important task pertaining to the ongoing progress of developed socialism, the social and economic strategy of the CPSU, and in formulating the CPSU's long-term policy in the sphere of ideology. Chernenko plays a most active role in shaping the foreign policy of peace pursued by the Soviet state and in the CPSU's efforts to consolidate the world communist and working-class movements.

Party's Role in Soviet Society

The title of the book is derived from the first speech included in the collection, "Party and People United," which was delivered at a meeting with voters of Moscow's Kuibyshev District on March 2, 1984. Many other speeches and articles included in the book are on the same theme, for instance, Chernenko's speech at the session of the commission of the CPSU Central Committee for drafting a new edition of the Party Program on April 25, 1984. With good reason this speech can be considered a remarkable piece of creative Marxism. It contains the governing principles for drafting the main ideological, theoretical and political document of the CPSU, whose purpose is the ongoing progress of developed socialism.

The supreme goal of Communists is to build a communist society, a society of self-government. As we advance toward this goal, the role of the Communist Party as the leading social force keeps growing, not dwindling. These are the dialectics. What is more, the growing role of the CPSU and the further development of socialist democracy are a single, integrated and natural process. Though it may seem contradictory at first glance, there is no contradiction here at all.

The reasons for the higher prestige enjoyed by the Communist Party in Soviet society are set forth in the collection. One is the greater scope and increased difficulty of the problems tackled by the party and the Soviet people, which demand political and organizational leadership at a new and higher level. Another is the growing political activity of working people, which requires an experienced and wise force to direct that activity toward social progress. The Communist Party is exactly that force. Konstantin Chernenko emphasizes the enhanced role of the trade unions; the Young Communist League; the unions of writers, journalists, artists and other public organizations. This, in turn, calls for more competent political guidance. Last but not least, the increasing importance of the Marxist-Leninist theory, advanced by the party, is of exceptional importance in enhancing the CPSU's role at this stage of developed socialism.

The Role of Theory

The speeches and articles in the collection devote a great deal of attention to the role of theory in the CPSU's revolutionary activities. Chernenko points out that the principles and conclusions mentioned in the documents of the Twenty-fourth, the Twenty-fifth and the Twenty-sixth Congresses of the CPSU and the resolutions adopted by the plenary meetings of the CPSU Central Committee are rightfully regarded as one of the recent achievements of Marxist-Leninist theory. The most salient of these achievements is the concept of well-developed socialism, which has helped determine the CPSU's strategy in the national economy and political, social and cultural development.

Of exceptional importance is the CPSU's recent analysis of the current stage of development of Soviet society. Chernenko points out that it "has entered a historically lengthy stage of developed socialism; to perfect it in every way is our strategic task." In detail, Konstantin Chernenko points out that Soviet society is at the beginning of a period during which profound qualitative changes in the productive forces and appropriate improvement in the relations of production and in the entire social structure will take place.

Ways of Solving the Problem

Konstantin Chernenko offers solutions to the problem. For example, there should be a quick and continuous renewal of all economic branches on the basis of the latest achievements in science and technology. This is fundamental. Social progress is unthinkable without it.

The Soviet leader notes that an improvement in the economic situation has been attained recently mainly because of utilizing reserves, which have always been there. The Soviet Union has begun tightening up the organization of production and labor discipline. This has yielded immediate and appreciable economic results. It is necessary, however, to go further, toward profound qualitative changes in the national economy. It is precisely this and, above all, the intensification of social production that will be the main emphasis of the Twelfth Five-Year Plan period. Addressing the Extraordinary Plenary Meeting of the CPSU Central Committee on February 13, 1984, Konstantin Chernenko noted: "The new five-year plan should become, above all, the beginning of profound qualitative changes in production, a five-year plan of the decisive turning point in the intensification of all branches of our national economy. The present material and technological basis and the managerial system should acquire new, higher qualities."

A highly efficient economy is a means to improve the living standards of the people, not the end in itself. "Steadily raising living standards is the unshakable general policy of the Communist Party," Konstantin Chernenko noted in his speech at a meeting with workers of Moscow's Serp i Molot (Sickle and Hammer) Metallurgy Plant. This is corroborated by life itself. Since the early seventies real per capita incomes have grown by more than 50 per cent. The USSR has built more housing in the past four years than it did in the entire postwar period.

On the Leninist Style of Work

Another topic focused upon in the collection is the Leninist style of managing the affairs of the CPSU and the Soviet state. Its components are as follows:

- 1) a scientific, composite and realistic approach to the solution of all problems in the development of communism;
- 2) a unity of theory and practice, of what is said and done and of decisions made and their realization; and
- 3) the principle that party leadership should be on a collective basis with the development of inner party democracy, criticism and self-criticism and systematic and effective control.

Konstantin Chernenko especially emphasized the importance of strengthening the close contacts between the CPSU and the masses and lists many forms that these contacts take. For example, workers write letters to CPSU committees and organizations, government bodies (the Soviets of People's Deputies) and to the mass media. He points out that Communist Party leaders, rank-and-file Communists and all officials should never forget that every letter represents a person with needs and aspirations.

The further development of socialist democracy and the activities of the Soviets of People's Deputies, which form the political basis of Soviet society, are constantly in the center of the Soviet leader's attention. At the plenary meeting of the CPSU Central Committee in April 1984, Chernenko spoke of the need to remove the existing discrepancy between the ample opportunities at the disposal of the Soviets and their application in practice. This remark is quite appropriate. Presently the Soviets of People's Deputies at all levels are more actively using such methods as deputy's inquiries and deputy's reporting back to voters on how they have been carrying out their mandates. More and more often the Soviets of People's Deputies are working with industrial enterprises in their jurisdictions.

International Issues

Konstantin Chernenko is a prominent figure in the world communist movement. This important aspect of his activities has been reflected in the published collection. It contains the Soviet leader's speeches delivered at the Second Congress of the Communist Party of Cuba, at the Twenty-fifth Congress of the Communists of Denmark, at the Tenth Congress of the Communist Party of Greece, at a meeting of workers in Sofia, the capital of Bulgaria, and at a meeting with working people in the suburbs of Paris, France.

The unity of Soviet domestic and foreign policies, the problems of world politics, and the struggle waged by the CPSU, the Soviet Government, the community of socialist countries and all peace champions against the growing danger of a nuclear conflict are also prominently featured in the collection.

Konstantin Chernenko is a staunch supporter of the principle that any disputable international issue can and should be settled by negotiation, not force. All that is required for this to happen is the good will of countries with differing social systems.

Addressing the Extraordinary Plenary Meeting of the CPSU Central Committee on February 13, 1984, Konstantin Chernenko noted: "We are open to peaceful, mutually beneficial cooperation with the states on all continents. We are for the peaceful settlement of all disputed international problems through serious, equal and constructive talks. The USSR will in full measure cooperate with all states prepared with practical deeds to help lessen international tension and create an atmosphere of trust in the world. In other words, with

those who will really pursue a policy leading not to preparing for war but strengthening the foundations of peace."

Norms for Relations Among Nuclear Powers

Of exceptional importance for reducing the risk of thermonuclear war and strengthening confidence among states are certain norms for relations among nuclear powers. Konstantin Chernenko formulated them in his speech at meeting with voters in Kuibyshev District on March 2, 1984.

"The Soviet Union has made these principles the basis of its policy," Konstantin Chernenko stressed. "We are prepared to reach agreement with other nuclear powers at any time on jointly recognizing norms of this kind and on making them mandatory."

The publication of this collection of speeches and articles by Konstantin Chernenko is a major event in the history of the CPSU and Soviet society. Its importance transcends the limits of the USSR because it explains in a simple form the policy of Soviet Communists on socialism and peace. ■

Party and People United, a collection of speeches and articles by Konstantin Chernenko. 496 pages. Politizdat Publishers, Moscow, 1984.

EVERYONE FOR PEACE

Continued from page 2

The Soviet Union took the blow of Nazi Germany, the main and heaviest blow, and withstood it. The USSR thwarted the plans, code-named Operation Barbarossa, to blitzkrieg it, in this way frustrating Hitler's designs on world domination.

An objective, unbiased general public evaluated the deeds of the Soviet Union as they merited. The English historian Peter de Mendelsohn, for example, wrote that one conclusion can be made. It is irrefutable. Had Hitler's estimations of the Red Army been correct and had the march on the Soviet Union really ended after three or four months, no force on Earth could have stopped Hitler from fulfilling his ambition. Had the Soviet Union not held out, no one else would have—there is no doubt of that. But things went differently: The Soviet Union held out, thereby, enabling everyone else to endure.

The anti-Hitler coalition of the war years was a belated recognition of the Soviet idea of collective security. For the first time in history real political and military cooperation was achieved between countries with opposing social systems and ideologies. Within the anti-Hitler coalition that routed the fascists, the ideal of collective security and collective resistance to the aggressor was realized, that very idea which the Soviet Union, from its birth, had been endeavoring to prove to the others.

The communiqué issued by the leaders of the USSR, the USA and Great Britain at the Yalta Conference of February 4-11, 1945, expressed the value of this cooperation as follows: Only through continued and growing cooperation and mutual understanding between our three countries and between peace-loving peoples can the highest aspiration of humankind, that of a strong and lasting peace, be realized.

Wherein Lie the Roots of Evil?

What gives rise to the threat of war and the outbreak of hostilities? What leads to tension in international relations?

If you think deeply about the origin of such phenomena, you will come to the inevitable conclusion: Military force and its threatened or actual use are to blame. These are the roots of evil in international relations.

Can the use of military force be justified, for example, in contemporary conditions? No, it cannot. It is not a monopoly on the most powerful kinds of weapons, in particular nuclear armaments and their delivery systems, has been attained and maintained. Ideas of gaining a position of "absolute strength" or "decisive superiority" have proved ineffectual. The military strategic parity existing be-

tween East and West, the Warsaw Treaty and the North Atlantic Treaty Organization is evidence of this.

Second, the development of military technology and the appearance of the most destructive means of conducting warfare have led to a kind of devaluation of these weapons, to a contraction of the sphere in which military force can be employed to achieve rational political goals. Military force is losing its value and, perhaps, even faster than it is growing. There is no strategy with even the slightest degree of logic that can involve eliminating an adversary without putting oneself in incredible jeopardy or, in effect, at the cost of self-destruction.

The policy of détente that followed the cold war period has already shown that the East and the West not only can coexist but can even work together on a basis of equal security as opposed to a "balance of fear." Many matters causing rifts between the East and the West, for example, West Berlin and the immutability of postwar frontiers in Europe, have been resolved by means of talks and political solutions. Indeed, "power politics" for many years impeded the satisfactory resolution of such issues. Postwar history proves that force, pressure and threats are not the methods that bring results in the world of our times. No one in their right mind can conceive of solving the historical dispute between capitalism and socialism by force of arms.

With force out of the question, isn't it better to compete not in an arms race or in producing new and more destructive weapons systems, but rather in the areas of trade, science, technology and culture?

"No" to Power Tactics

The Soviet Union has never concealed its deep dislike for power tactics, and it has never worshiped force. To a like degree it finds new-fangled versions of such a policy unacceptable. Building international relations "from a position of strength," considering such a position the mainstay of international relations, means dooming the human race to life on a powder keg.

Obviously, force, including military force, cannot be excluded in a world brimming with armaments. When some are forging swords, the rest can hardly beat theirs into plowshares. For this reason the Soviet Union has been bolstering and will continue to bolster its might. However, this might is not of an aggressive nature: It furthers the cause of peace just as a peaceful citizen does who knows his strength and doesn't abuse it. It is a shield rather than a sword.

There is more than one interpretation of the word "strength," and the central issue is how people choose to construe it.

Power should not be an end in itself. The Soviet Union proceeds from a principle of power for peace in increasing its defense potential. Peace for itself and security for all, security for itself and security for all—this is the only way things can be under the threat of a worldwide nuclear holocaust.

The USSR proposes the most reliable materials and methods for building a common foundation of security for East and West. It involves curtailing the arms race and material preparations for war and promoting disarmament wherever and whenever possible as a preparatory step toward general and complete disarmament. It means creating moral and legal barriers to force or threats of force. The Soviet Union proposes that these measures should be accomplished concurrently.

Truly just and democratic peace should be based on respect for the rights, sovereignty and legitimate interests of all countries, without exception. Nations, rather than learning how to more subtly manipulate the so-called balance of strength, should once and for all exclude the use of force from relations with other peoples.

The world cannot feel secure while the arms race continues. Likewise, it has no assurance against disaster while repudiation of the use or the threat of the use of force is not the rule in international affairs.

It is said that the arms race goes on because it's hard to break an old habit. This, of course, is a simplification, although inertia undoubtedly plays a role. A fundamental change in an outlook like that is essential. The arms race is not continuing: People are making it continue! And to clear up another point, the arms race is not fated to be, and the armed forces is not an "eternal institution" of civilization nor an ineradicable evil.

Humankind must and will break the habit of war and preparation for war if politicians choose the path of reason and political realism.

Through the use of brute military force, Hitler intended to set up a thousand-year "Reich" and gain world domination. And how did that "dream" end? Twelve years after his coming to power, the body of the would-be "ruler of the world" was soaked in paraffin and burned near the bunker in the Imperial Chancellery.

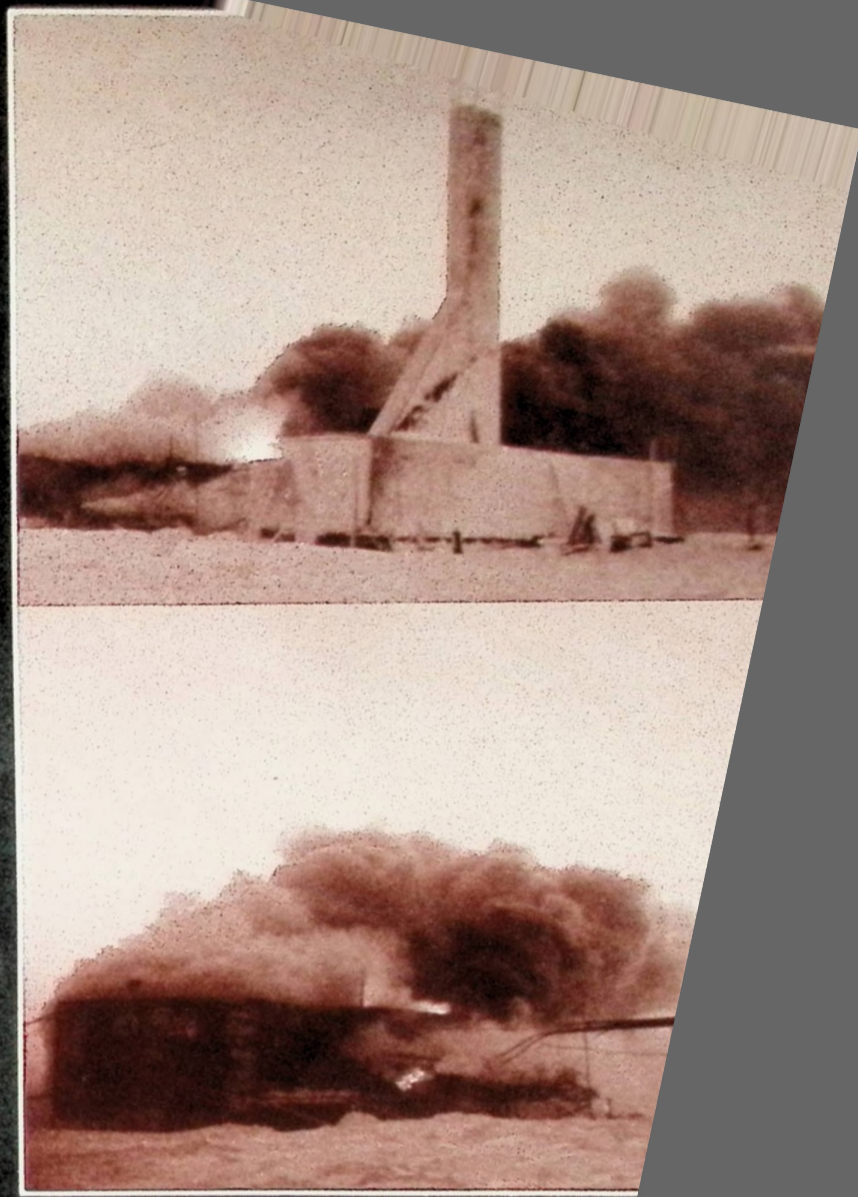
Yes, force crushed Hitler, but most of all it was reason that prevailed, reason in the form of countries poles apart in their economic, social and ideological systems pulling together in one anti-Hitler and anti-fascist coalition.

One would think that two world wars would have brought the world to its senses: The highest authority on Earth should be reason at the state level. So long as force retains embodiment in the form of various weapons, it must be checked by reason. Force must be taken under reliable control.

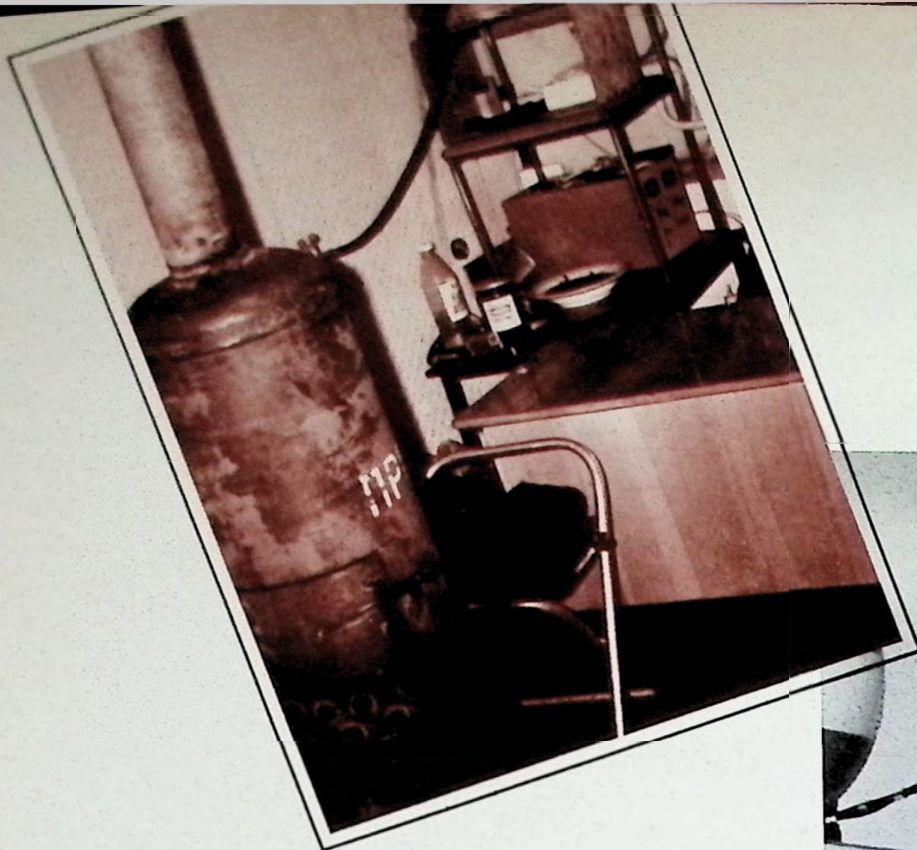
Park his peaks

ON APRIL 12, 1982, A FIRE DESTROYED THE POWER PLANT AT VOSTOK STATION IN THE ANTARCTIC. THE TEMPERATURE OUTSIDE HAD DIPPED TO 70 DEGREES BELOW ZERO CENTIGRADE. THE MEN AT THE STATION HAD ONLY 30 MINUTES TO DECIDE WHAT TO DO.





Members of the expedition that experienced the hardest winter at the South Pole. Vello Park is seated far right. Above: The power plant goes up in smoke.



After the fire, life at the station became extremely difficult. Fortunately, stoves like the one at left were found and quickly put into operation. They couldn't provide enough heat to keep everybody warm, but they could keep them from freezing. Below: This international signpost stands at the South Geomagnetic Pole.

It was nighttime when meteorologist Vello Park heard the fire signal. He quickly dressed himself and ran outside. There he saw the diesel-powered generating plant blazing away. Fires are disastrous any time and any place, but in the Antarctic they are especially critical. The first Soviet expedition to Antarctica arrived in 1955. Since then, more than 15,000 Soviet people have traveled here, made over 70 expeditions and built 14 research stations. The life of each station is guided by the specific scientific function it performs. When the experiments are completed, the station is closed. At present seven stations are functioning in the region. One of these is Vostok Station, which is quite unique. Firstly, it is situated at the pole of cold, the only spot on Earth where the temperature once dropped below 88.3 degrees centigrade. Secondly, it is situated on a glacier that is 3.5 kilometers thick. Ice cores recovered from its depths have supplied scientists with very interesting data about the nature of Antarctica and the planet itself. Thirdly, the air here is so thin that even motor vehicles lose up to one-quarter of their power, and healthy people adapt only slowly and with difficulty—even then, they cannot walk briskly. Add to that the darkness of the polar night and the muted colors—color deprivation—of the polar day.

But strange as it may seem, all of this attracts rather than repulses scientists. Since 1957 experts from not only the USSR but also Australia, the German Democratic Republic, New Zealand, the United States, France, Czechoslovakia and other countries have worked here. The point is that the station is located at yet another pole—the South Geomagnetic Pole—and the natural phenomena that occur here cannot be observed anywhere else in the world.

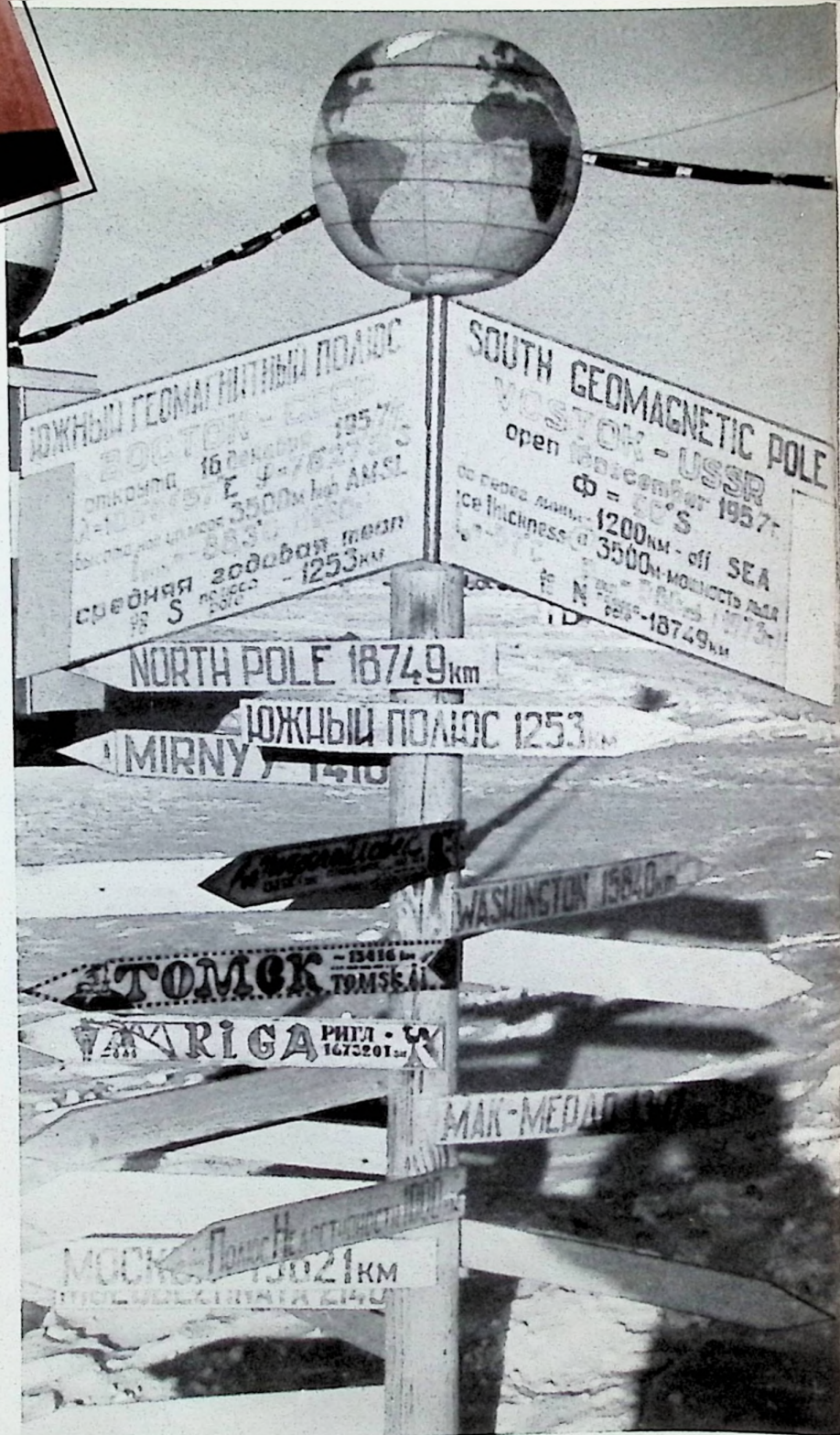
Antarctica and Mountains Are Related

It was no accident that Vello Park found himself at Vostok Station. Before that he had spent three winters in the Antarctic. As a mountaineer, he knows that each new peak scaled must be higher than the previous one. Furthermore, by the age of 45 he had become convinced that living a life that would make his children proud was also a type of ascent, no matter where he was—in the icebound Antarctic, amid the Pamir rocks, at scientific centers in Lenin-grad or at home in his native Estonia.

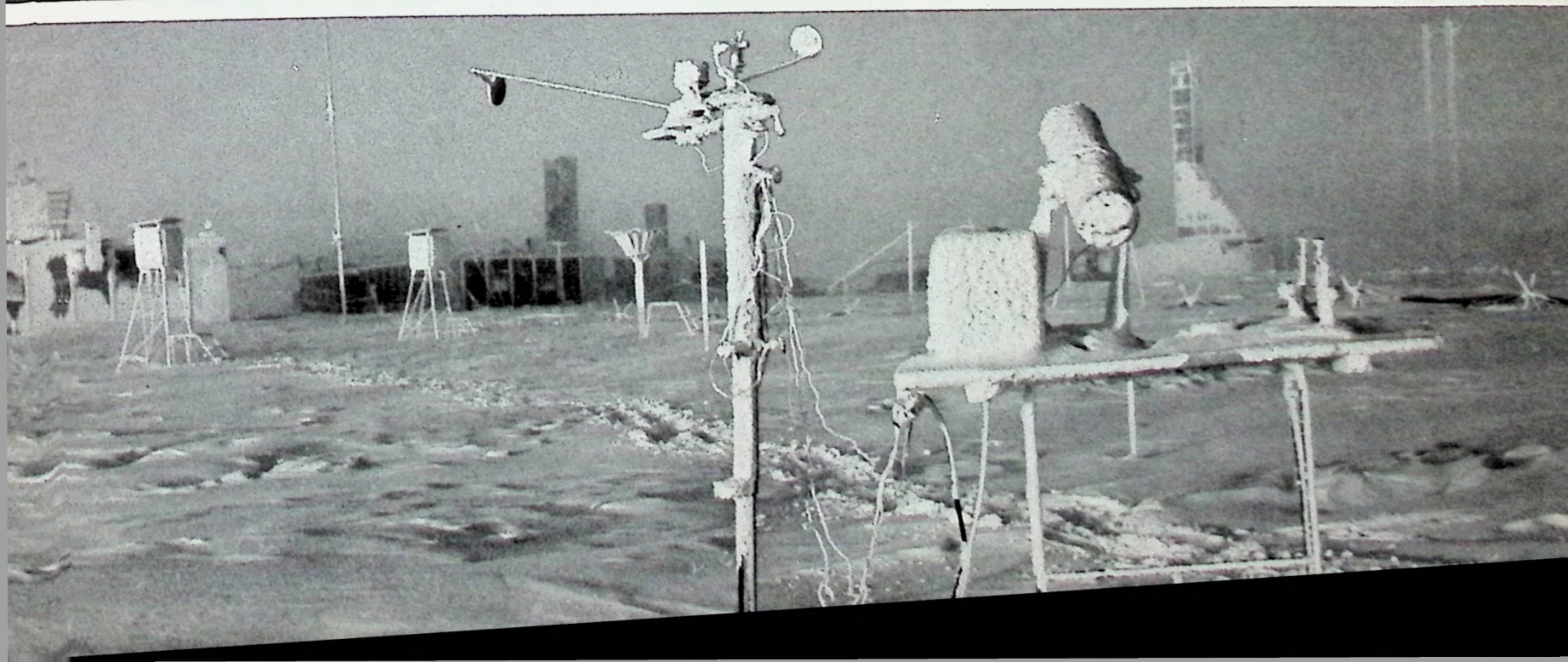
Vello was born into a large family. He was the youngest of 11 children. During the war four of his brothers were killed; then his parents died. The other brothers and sisters went their separate ways, and eight-year-old Vello was left to fend for himself. He was taken in by the family of a collective farmer. When Vello finished high school, he left for Tartu University but spent his vacations with his foster parents. Vello was in the Antarctic when they passed on. To most people this circumstance would justify his absence at the funeral, but it doesn't sit well with him.

What his foster parents did for him was morally a peak, and Vello vowed to remember it. As he grew older, he would always seek peaks like it for himself. At the university he chose what he believed was the most difficult field of studies—physics. Then he took up parachute jumping. It was the mountains that attracted him most. For more than 10 years he was president of Firn, the mountaineering club. On one climb in the mountains, when the summit was within reach, three of his friends were swept away by a sudden avalanche. It was a miracle that he himself survived. Vello descended the mountain and called in a helicopter. Violating all instructions, the pilots quickly reached an altitude of almost 7,000 meters without oxygen masks. Vello pointed out the area where the tragedy had occurred, and they searched for several hours, gazing into the beautiful white slope, but found no one.

"The mountains had nothing to do with that," Vello said later. "It was purely an accident." And he resumed climbing. Sometimes he would secretly sneak away from home, telling his wife Margit he was going on a business trip, but she always knew in her heart where he was headed.



Facing page, top to bottom: Vostok Station is located at the pole of cold. Polar explorers say, "If you haven't spent a winter at Vostok, you have no idea of the Antarctic." After the disaster the men slowly adapted to the harsh conditions and even began making *pelmeni* (meat-filled dumplings). The weather station at Vostok.

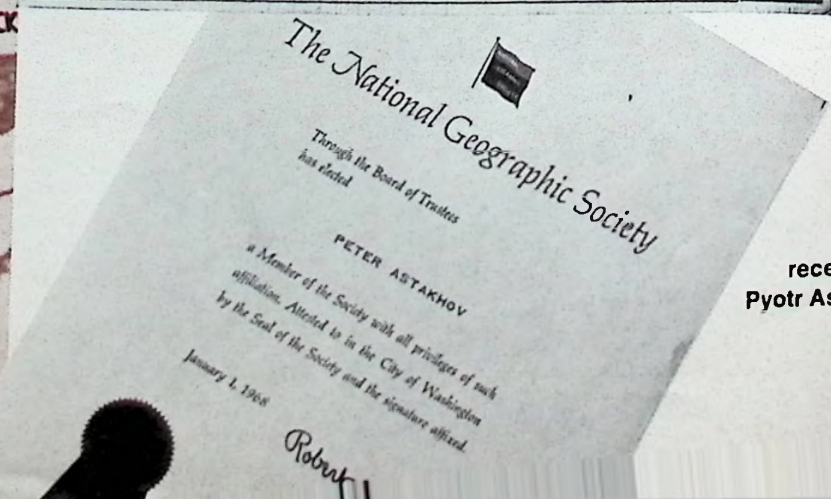
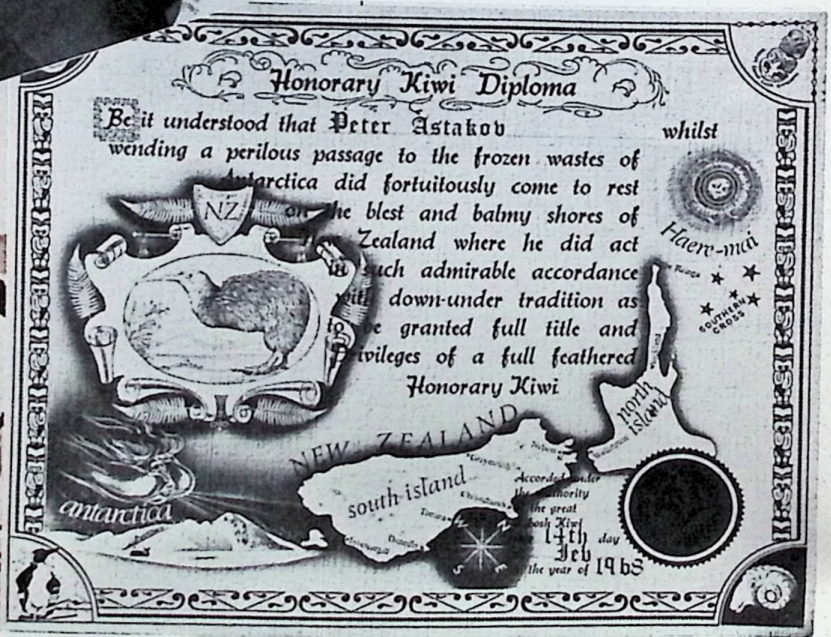




Vello Park at home with his wife Margit and one of their children. Left: Two friends—Vello and Pyotr Astakhov (right)—at a banquet in Leningrad after being awarded the Order of the Red Banner of Labor. Below left: Astakhov (far right) visits his American colleagues at their base in 1973.



Pyotr Astakhov (left) and an American colleague hoist flags at the South Pole in 1968.



Awards received by Pyotr Astakhov in 1968.

He scaled Communism Peak and Lenin Peak twice, which are summits in the 7,000-meter category, and his ambition now is to ascend Victory Peak. Mountaineers who have conquered three 7,000-meter peaks are given the title of Snow Leopard. Vello wants to become one, although outwardly he bears no resemblance to the animal. At Christmastime his friends jokingly suggested that he should be the Snow Maiden. Like a true Estonian, he has fair hair, blue eyes and a slim and well-exercised physique.

Vello had planned to link up with the Soviet team that was preparing to climb Mt. Everest—the highest mountain in the world—but the organizers of the venture advised him against it because of his age. Around the same time he was offered a job at Vostok Station. Antarctica and mountains are related, Vello thought, and accepted the offer.

had difficulty burning because of the thin air. Fat flakes of soot floated a the room. Those who were closest to the stove had flushed faces, while further away felt a bone-chilling cold creeping up their backs. The men turns being next to the warmth.

"How should we answer Moscow?" asked Astakhov.

The first to rise was Vello Park: "We haven't frozen yet during these few hours," he said, "and most likely we won't, which means we will be to continue our work here. There is enough fuel and food to last us spring. If we keep our spirits up, if we continue to work, we will survive. Calling in pilots now is risky. They could die. Personally, I want to continue with my work."

Anatoli Kalmykov, the cook, agreed, saying that he had been able to make breakfast on the stove, so he didn't see why he wouldn't be able to provide three meals a day for the men. His words were not only comforting, they were important. Astakhov radioed back that they were declining the offer. Their request was that their relatives not be informed of the situation.

Thus began eight months of wintering that were unprecedented in the history of polar exploration.

The Main Thing Is to Act

The problem of warmth was solved by makeshift drip-fed stoves. These were constantly supplied with fuel, carefully watched over round-the-clock and well guarded against any possible mishap. Beds were arranged around them, and everyone took turns sleeping. Though ice was encrusted on the inside walls of the living quarters, the men were able to get dressed in front of the stoves.

There was one drawback, however. The stoves smoked heavily, and soot seeped into the clothing and covered everyone's face.

"My documents smell of fuel oil to this day," said Vello. In one of the storehouses he came across a supply of paraffin wax and successfully attempted to fashion candles. In fact, candle casting almost became a "cottage industry" among the men. With this, the problem of illumination was resolved. Next a tiny bathhouse was assembled.

As before, Vello made his rounds of the instruments on schedule. The readings were needed by aircraft taking off in some other part of the world. He measured the speed and force of the wind, the temperature, the humidity and the air pressure. He calculated that every day he had to run some 20 kilometers from his hut to the weather station and back again.

And as before, the Mayak Radio Station continued to broadcast its regular world weather reports after midnight. After the broadcast the lights would go off in one apartment in Tallinn, Estonia. Margit, having put the children—two sons and a daughter—to bed, would not turn in until she heard: "Today's temperature at Vostok Station in Antarctica was..." These words became a message of love from her husband and brought her reassurance. Or maybe she knew the truth again?

At the end of November a tractor-drawn train of sleds arrived from Mirny. All of the men in the wintering group went out to greet it. Everyone was healthy and sound.

On January 17, 1983, one of the members of the wintering party, Alexei Karpenko, was buried. By coincidence, the remains of Captain Ivan Man were committed to the ground on the same day. The famed winterer, whose name is associated with Soviet exploration of the Antarctic, had died at his home, in bed, from old age, but he had asked to be buried in the Antarctic. The eulogies at the gravesites contained the words: "They came here to stay forever."

Antarctica enters into the fate of everyone who has been to it.

He Is Going There Again

In the report of the Twenty-seventh Antarctic Expedition to the board of the Arctic and Antarctic Research Institute in Leningrad, Pyotr Astakhov stated that, despite extremely difficult conditions, Vostok Station had carried out 75 per cent of its research. He stressed that weather observations were conducted on schedule, except for the day immediately following the fire.

Later all of the members of the wintering party were invited to Moscow, and each was decorated with the Order of the Red Banner of Labor.

"Haven't you stopped loving the Antarctic after such an ordeal?" I asked Vello Park.

"The Antarctic has nothing to do with it. It was purely an accident again," he answered.

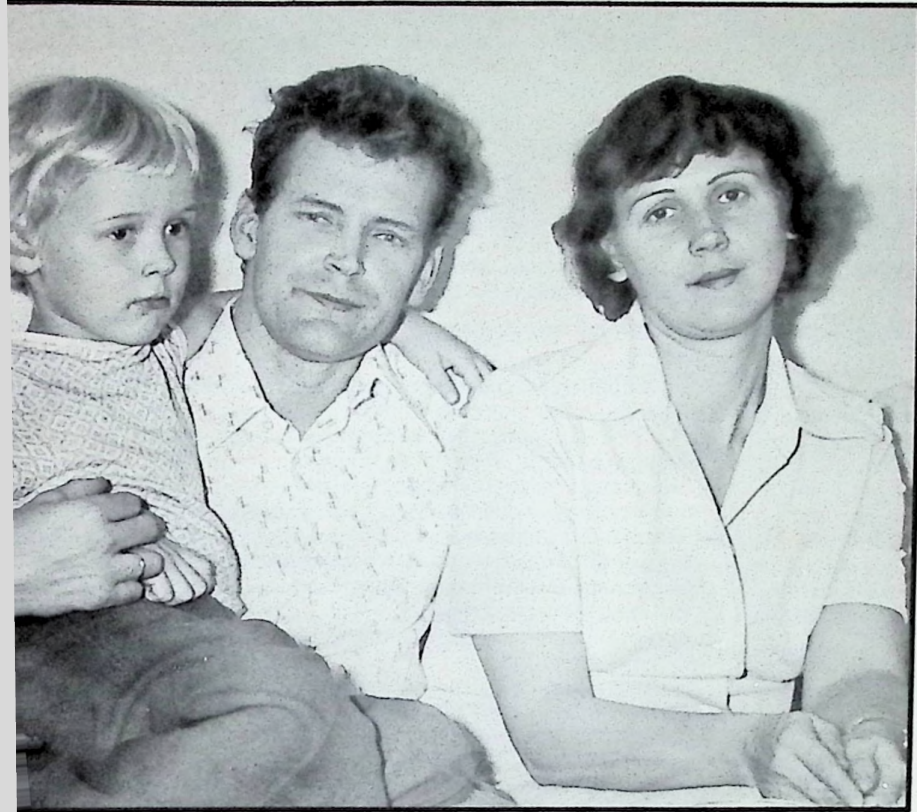
"You are now called an 'Ice Leopard.' Isn't it time you stopped trying to become a Snow Leopard?"

"Absolutely not. I am planning to scale an unnamed peak in the Caucasus with an Estonian team. If we succeed in reaching the summit, we'll christen it Tallinn Peak after the capital of Estonia."

Today everything is running smoothly at Vostok Station. In the meantime, in Leningrad, plans are being outlined for the next expedition to the Antarctic. Again a research fleet will be headed for the continent and specially equipped planes will fly on the Moscow-Antarctica route. Scientific research will be carried out in practically all fields concerning the Earth, under all international programs, under plans of the Scientific Committee on Antarctic Research (SCAR), an international nongovernmental organization for Antarctic exploration. All provisions of the Antarctic Treaty will be observed as before.

"Vello, I heard a rumor that you were going to the Antarctic. Is it true?" I asked.

"Yes, it is. And I'll be back."



"We Will Survive"

The Antarctic has taught Vello many things. "In Antarctica, just like in the mountains, a great deal depends on who is at your side in a pinch," said Vello. "On the night of the generator fire Pyotr Astakhov stood beside me."

Pyotr Astakhov is the geophysicist who headed the Twenty-seventh Soviet Antarctic Expedition. He was no newcomer to Antarctica: The Astakhov Glacier on that continent is named after him. The naming, incidentally, was done by members of an expedition from the U.S. who had come to know him personally because he was a frequent visitor at McMurdo, the American station. In 1967 Astakhov also worked at Amundsen-Scott Station. "There were no heroic exploits then," Vello recalled. "I simply did my job, which involved taking part in vertically probing the atmosphere, photographing the polar lights, measuring the absorption of radio waves into the atmosphere, registering levels of radiation, raising the American and the Soviet flags on the flagpole, pledging fraternity in the mess hall and just being a good companion."

After the fire was extinguished, Astakhov had 30 minutes to reflect on what had happened and to take care of the important details on which the lives of men as well as his own life depended. The first thing to be done was to protect the radio transmitter. If it became covered with frost, it would never function again. Saving the food was also necessary: The below-freezing temperatures could turn potatoes and onions to stone and burst all tin cans. Also, water had to be quickly drained from the radiators in the huts. But after an ordeal the men were greatly in need of food and warmth.

Luckily three old kerosene stoves were discovered outside the building. One on a flat top, which was ideal for a kettle. It was set up in the mess hall, and lit. The food was gathered nearby, and everyone huddled around it. A second stove was put into operation in the radio hut. One of the previous expeditions had brought with it a small generator for extracting cores from the snow. It would be used to save 20 lives. After the generator was inspected, it was started up, the station went on the air. Other research stations in Antarctica—and later, Moscow and Leningrad, too—heard what had happened at Vostok.

The winterers at Mirny on the coast of Antarctica were the closest to the fire—1,410 kilometers away—but they were unable to rush emergency aid there. No tractor-drawn train-sleds can cover such a long distance in the Antarctic. Officials in Moscow offered to drop a new power supply by plane. They waited for Vostok's reply. While the men at the research station huddled near the stove, which

PEACE LESSON

The school year begins on September 1 in the Soviet Union. On the calendar of life this date is imbued with a special meaning of its own and, by rights, is as much a red letter day for a person as a birthday, first day of work or wedding day.

September 1 is a turning point for every small person entering school in the USSR. It is the day when our children take their very first step into the big world. And as we watch them take this step, our aspirations and thoughts soar upward and forward into the future. When the clock ticks off the last seconds of the twentieth century—this difficult, menacing and yet great century—the first graders of today will be 23 years old. Naturally, we cannot foresee fully and in detail what life will be like then, but we should ensure that the Earth, their common home, will be a peaceful and happy place to live and work.

On the morning of September 1, school bells will ring throughout the entire Soviet Union, from east to west, following the Sun, from one end of this vast land to the other, calling 45 million children to school. The boys and girls will come and listen attentively to what the teachers will say. And their teachers' very first words will be words about peace. This is now a tradition.

The lessons of peace will be conducted at the entrances to schools, where little first graders stand side by side with seniors at the obelisks that for almost 40 years have marked the graves of known and unknown war heroes, and in the ivy-covered assembly halls and sunlit classrooms of new school buildings. This first lesson will be an appeal to the younger generation to join with grownups, from the very first steps of their conscious life, in active struggle for peace in our world.

The first to see humankind's home from space was Yuri Gagarin, a citizen of the USSR. It was he who said: "Isn't our Earth . . . a spaceship hurtling through the expanses of the universe? That ship belongs to all of us, to all peoples, and its crew must live in peace and friendship."

The younger generations in the USSR are being brought up with these noble ideas of peace and friendship. Our young people are playing an active part in the large, truly popular Soviet peace movement. Evidence of this is the peace marches, rallies, candlelight vigils and the money they have donated to the peace movement.

How many hearts will be moved by the lessons of peace? How many young people will be raised to noble action, to practical deeds for the triumph of life, for the future?

"May It Never Be Repeated"

The village of Temir lies on the shores of Lake Issyk-Kul, in Kirghizia. There are 800 farmsteads and two 10-year schools in the village. Last year, on September 1, the children and teachers started their peace lesson by observing a moment of silence to honor the memory of those who had fallen in the war against fascism.

"Almost all the men of our village left for the front lines," said history teacher Nasirdin Alamanov, beginning the lesson. "And two out of every three never returned. Grief came to every home. I

was a ninth grader at that time, and I had to substitute for the teacher who went off to fight. In the morning I taught the little kids, in the evening I took courses myself."

Seventy-year-old Nasirdin Shakshylykov said: "I took part in the liberation of Poland and Rumania and was wounded several times. A couple of shell fragments are still deep in my body, and my wounds continue to cause pain to this day. Damn the war! May it never be repeated!"

"For 40 years our people have been living in peace, but the wounds of the mothers who lost their children and of the children who lost their fathers have not healed," said the principal of the school, Konokbai Kakshiyev.

One of the oldest men in the village, 80-year-old war veteran Asankun Bekturov, remarked: "I firmly believe common sense will triumph over insanity. That was how it always was, and that is how it will be now. The clock cannot be turned back. The portending black nuclear mushroom will not hide the light of life from us. Humankind's desire for peace is invincible, so peace will be preserved."

Words of Peace

In Georgia's 2,000 schools the peace lessons began with the words of an ancient Georgian song:

We shall not permit the beauty of the Earth to be turned to dust and ashes.

Former soldiers who had come for the occasion told the children stories about the high price that was paid to uphold peace in the world. And war veteran Grigol Abashidze, a well-known Georgian poet, spoke words of kindness and words of peace.

"Humankind's responsibility for preserving peace on Earth grows from day to day," he said. "Especially now that the menace of war has so monstrously increased. The moment of grievous silence that has united us old people and you youngsters has brought back the memory of those who fell on the battlefield."

In Tbilisi, Georgia, one school was visited on opening day by a group of tourists from the Federal Republic of Germany, France and the United States.

When the words of the ancient song were translated for Edmond Lequebet, a member of the French army, he said: "The ashes of those who fell in the past war—millions of Russians, Frenchmen, Poles—are beating in our hearts. We will not allow our cities to be turned into lifeless deserts. We must avert the danger together."

Cochlette Zurner, a teacher from the U.S., said: "We join ranks with the champions of peace and disarmament and support those who are standing up against a new spiral in the arms race."

In the school lobby the group saw a small case holding the photographs of those who, more than 40 years ago, had gone to fight for their country straight from the classroom. They paid for victory with their lives. The faded photographs seemed to be calling out: "People, see that you do not let it happen again!"

A VISIT TO SCHOOL NO. 739

By Marcella H. Saunders

While we were preparing this issue on education, we received an article from a teacher from California who had visited the Soviet Union last year. The timing was perfect, and we thought that the readers would be interested in hearing what she had to say.

It was September 1, the opening day of school. A sea of flowers, excited children, proud parents, graduates and enthusiastic teachers filled the area in front of the school. Our group of California teachers was immediately infected with the festive spirit of the day. There was music, balloons, welcoming words from students, the president of the parents' council, a representative of the school's sponsoring factory and the principal, Aljbina Artemeva. The children being honored, as they are every year, were the incoming first graders. This was the most important day of their lives. They were entering the wonderful world of knowledge. To help them along on this new adventure, each had a senior boy or girl who was to be their "big brother" or "big sister" throughout the year.

A small hand grasped the school bell and began

to ring it. Thus, the new school year had begun.

As grade after grade entered the building, each pupil carried flowers for their teachers. Now I understand why, as I had driven across Moscow, I had seen so many children carrying bouquets. This scene was being repeated in schools all over the city and, as I found out later, all over the Soviet Union.

Principal Artemeva graciously welcomed our group to the school, and though it was an especially busy day for her, she escorted us from classroom to classroom. We found it interesting that all grades—first through tenth (the equivalent of the first through twelfth grades in the U.S.)—are taught in the same building. We observed lessons in progress, examined textbooks and asked teachers and students many questions.

We were told that September 1, 1983, had been declared a day dedicated to promoting peace all over the Soviet Union, and the first lesson in every school was to be a peace lesson. It seemed fitting, therefore, that our group visit the school's Museum of Glory, a museum that honors those who fought and died defending the Soviet Union during the Second World War.

The entire museum was conceived, designed and is now run by students. Housed in the basement of the school, it has several rooms filled with display cases, exhibits, maps, photos and informative notes. The central focus of the museum is an eternal flame that was designed and constructed by the students. The main hall contains exhibits that clearly depict the horrors of war. At the same time, they

Continued on page 40

This past April the USSR Supreme Soviet adopted the Decree on the Guidelines for Reform of General Education and Vocational Training.

THE SOVIET SCHOOL SYSTEM: TIME FOR CHANGES

- *Why did 90 per cent of the Soviet adult population taking part in discussions on the draft reform believe that the reform was necessary?*
- *What changes will be introduced in the schools?*
 - *What traits and abilities are characteristic of educated people?*
 - *Is it possible to discover the hidden talents of every schoolchild?*
- *Are the school system and the parents in agreement on priorities in children's education?*

These are only a sample of the questions discussed by top Soviet scholars, educators and representatives of teachers and parents at a recent Novosti Press Agency round table in Moscow. Pavel Naumov, chairman of the board of Novosti Press Agency and a deputy to the USSR Supreme Soviet, acted as moderator. Excerpts from the discussion are published below:

PAVEL NAUMOV: Apart from the nationwide discussion of the Draft Constitution in 1977, there has never been as wide a discussion in the country as there was on the Guidelines for the Reform of General Education and Vocational Training. One hundred and twenty million people took part in the public debates alone, to say nothing of the discussion that went on in the press. After careful study of the amendments and suggestions that were proposed by the general public, the Commission of the Politburo of the Central Committee of the Communist Party of the Soviet Union, which was presided over by General Secretary Konstantin Chernenko, incorporated about a hundred amendments, improved definitions and addenda into the final text of the Guidelines.

That people were so involved in the discussion is highly understandable. There are around 44.5 million students in school in the Soviet Union and almost 2.5 million teachers. Besides, most Soviet citizens are parents or grandparents, and like everywhere around the world, parents here love their children.

Gianini Rodari, a prominent Italian writer who has visited the Soviet Union several times, said that the premise about our country's having no enthroned ruler was not true. "It is children who are enthroned in this country," he said—and he was absolutely right. The Soviet school system is the best proof of our

state's concern for children. Every Soviet child is entitled to a secondary education—free and equal for all. The British newspaper *Financial Times* recently reported that in Great Britain, a country noted for its high culture, upward of 60 per cent of the students in public schools do not study foreign languages because they are considered to have no talent for them. This situation sounds preposterous to a Soviet ear: Foreign languages as well as other subjects are an integral part of our unified nationwide curriculum. They are studied in big cities as well as tiny rural communities, irrespective of who the parents of the children are.

Education is a pillar on which our socialist society rests, and foreign delegations keep coming to our country to view our achievements. *Why*, then, was the reform suggested by the CPSU Central Committee and unanimously approved by the population so urgent?

VADIM MONAKHOV, a corresponding member of the USSR Academy of Pedagogical Sciences: Let me go straight to the heart of the matter. The school reform by no means implies restructuring our well-founded educational system. It means streamlining it, mapping out guidelines for school development. Today's school-age and preschool-age children will be adults at the turn of the twentieth century, and it is they who will be called upon to shoulder the grand historical task of making every

field of Soviet science, economy and culture fully correspond to the most sophisticated requirements of the day. This will entail their having special knowledge and general erudition, an open and bold mind, social awareness and many practical skills. The technological revolution makes high demands not only on scientists, but on every working person. Young people—the Guidelines stress—will have to meet those demands of our society, and for that they must have the best up-to-date education combining theoretical knowledge with practical knowing and vocational training.

IGOR BESTUZHEV-LADA, a professor and co-president of the Committee for Futurological Studies of the International Sociological Association: You're right! We are always being bombarded with information, which nowadays becomes obsolete with breathtaking speed. Therefore, what we need is an updated educational system. As I see it, our society has outgrown the old one.

Let me explain. First, to make accurate predictions, you must know the past. In 1917 the Soviet Republic inherited from czarism a country in which 75 per cent of the population was illiterate. To fight illiteracy, what were known as lower-level—elementary—schools were set up throughout the country. Although they were universally accessible, only one child out of every 10 graduated from these schools in the 1920s.

Secondary schools—high schools—were also set up at the time. The shortage of intellectual cadres was catastrophic, and a new, socialist intelligentsia had to be formed. That made general education—9- and later 10-year—schools a kind of preparatory stage for higher education. However, only one out of every hundred pupils managed to finish such a school in the 1920s. The cultural and economic progress of the Soviet Union was tremendous, though, and schools mushroomed in cities as well as the countryside.

By the end of the 1940s the country was in the process of healing the wounds of the Second World War. The economy, devastated by the Nazis, had to be restored, and that required a great number of skilled people. Only one out of every 20 pupils grad-

Citizens of the USSR have the right to education. This right is ensured by free provision of all forms of education, by the institution of universal, compulsory secondary education, and broad development of vocational specialized secondary, and higher education, in which instruction is oriented toward practical activity and production; by the development of extramural, correspondence and evening courses; by the provision of state scholarships and grants and privileges for students; by the free issue of school textbooks; by the opportunity to attend a school where teaching is in the native language; and by the provision of facilities for self-education.

**Article 45
of the Constitution of the USSR**

uated from a 10-year school during that period. This was an achievement in comparison with the 1920s, but it meant regrettably little in terms of filling the national need for a well-trained labor force. By the mid-1950s the number of students graduating from high school amounted to half the number that had enrolled, and the country, so recently illiterate, was justly proud of the figure.

By the mid-1960s more than 60 per cent of the country's teenagers had a full secondary education. The percentage reached 75 by the mid-1970s. In 1977 the Constitution of the USSR proclaimed free secondary education compulsory for all Soviet children.

Traditionally, the general education school was seen as a place where youngsters prepared for the institute—college—and the university. I would say most children saw it that way. This view was justified when only a few students were graduating from high school, but it became a contradiction in terms when a 10-year secondary education became the norm.

That's why I see the aim of the reform as transforming the school from a kind of "preparatory department" for the university into a laboratory of life, in the broadest sense of the word. High school graduates should receive a sound general school education, which they can add on to by themselves throughout their lives. To me, it is as absurd for people to believe that they can acquire enough knowledge in high school to last a lifetime as it is for them to think that they can consume enough food at one meal to last them a year.

PYOTR ATUTOV, a member of the Academy of Pedagogical Sciences: Your definition of the aim of Soviet education is correct, but you are wrong when you say that the need for greater career orientation in schools is a recent development. The Soviet educational system is based on Lenin's idea of a unified vocational polytechnical school, and this is still true. It couldn't be any other way in this country, which has proved by its very development that it is labor which creates everything, from material wealth to human personality. Vocational training was not only the school's concern. At every level, including Communist Party congresses, how to train industrious young people has always been discussed—young people with a progressive world outlook and a feeling of involvement in every concern of the nation, young people ready to take on responsibilities when they grow up. But the problem is how to make sure that the children are able to do that. This means that the schools must train students for definite trades.

Our society has resolved this problem as best as it could at every stage of our development. There were vocational schools that offered courses in a trade and elementary education. Simultaneously, the school sought for forms of vocational training, that is, "work lessons," for example. Today the drawbacks of this method are perfectly clear. It's impossible for youngsters to learn a trade in the classroom alone, where students—for the sake of teaching them to be industrious—have been making items of no practical use.

Today the country can afford to provide schools with more help than ever before. By this I don't mean only audio-visual aids, though they have already become indispensable to teaching. I think the very concept of education has taken on new meaning—not only in general theoretical knowledge but in definite, practical and vocational training. This idea was expressed very precisely by Konstantin Chernenko at a meeting with his constituency that had gathered to discuss present-day social concerns. "You understand, of course, that we do not have the slightest intention of diminishing the importance of general culture and knowledge or of introducing something like compulsory labor," he said. "A person with no vocational training cannot become a conscientious builder of a new society—herein lies the crux of the matter."

PAVEL NAUMOV: Sociologists note that the general population showed enormous enthusiasm—95 per cent approval—for the very premise of the draft reform, for combining academic studies with socially useful labor and for universal vocational training for schoolchildren. What do you think about that?

LUDMILA SHVETSOVA, a secretary of the Central Committee of the Komsomol (Young Communist League): That reaction was expected since the idea for the reform did not spring out of thin air. It was born out of practical experience and is fairly longstanding. The Komsomol, the largest and most representative youth organization in the Soviet Union, has organized summer projects for teenagers for the past 11 years. These projects were designed to provide not only fun and relaxation but also work experience. Every year 10 million high school seniors work at factories, where they produce goods valued at 600 million rubles a year—and they enjoy it. Working on shop floors gives them the feeling of being an adult and a useful member of society.

BORIS NIKITIN, the father of seven children: Parents are quite happy with the projects, too, I assure you. I was invited here, to the round table, along with my wife Elena, as a representative of the vast number of parents in the country. My wife and I have a large family, which we are bringing up in our own way. The press has even called us creators of a new educational system, but we don't agree. "The Nikitin system" is no new discovery—it's the natural way. Making demands on a child that correspond to his or her abilities is good. Believe me, they are much greater than most people think. For instance, my children became active in sports, literally in infancy. We've even turned one room in our apartment into a gymnasium. They started reading books at about age three and were asked to help with chores as soon as they could understand what



Pavel Naumov: "Education is a pillar on which our socialist society rests."



Pyotr Atutov: "It's impossible for youngsters to learn a trade in the classroom alone."

they were doing. This conflicted not only with the schools our children were attending, but even with the Academy of Pedagogical Sciences. But our results speak for themselves. Our children are healthy, industrious and progress faster than their peers who have been coddled by their parents. Unfortunately there are many of the latter.

LUDMILA SHVETSOVA: I agree. Such children are afraid to take jobs, and they grow up socially immature and lacking in civic consciousness. We adults must take some of the blame for this. Then there are the farm children, who for a long time have objected to the law that prohibits persons under 18 years of age from driving cars, trucks and tractors, as well as other vehicles. Teenagers in town have also demanded new forms of career orientation at school. To quote one Moscow schoolchild: "Organizing teams of senior students to help out at local construction projects and factories during the time allotted for work lessons should be allowed."

PYOTR ATUTOV: The basic premises of the reform will be translated into reality by 1990. In the future, I think, the general education schools will merge with the vocational ones. They are coming closer even today, but it's a lengthy process. In the meantime, more schooltime is being spent on job training, and the content of the classes is changing. Schoolchildren are no longer merely practicing on raw materials; they are creating items of real value instead.

This is not easy: Factories and plants, and training departments at factories, will have to be started up, with several million very specific jobs set aside for schoolchildren. About 90,000 teachers will be needed, and they've got to be trained. Also, what

Vadim Monakhov: "The school reform by no means implies restructuring our well-founded educational system. It means streamlining it."



Sofia Lysenkova: "Teachers will grow and develop along with their students."

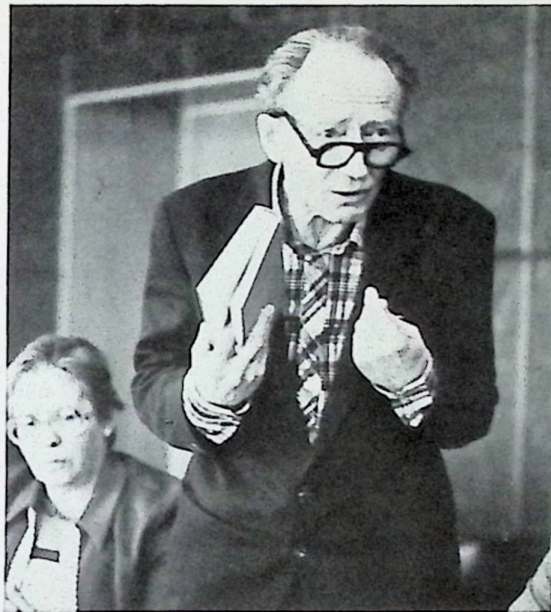


Igor Bestuzhev-Lada: "I see the aim of the reform as transforming the school from a kind of 'preparatory department' for the university into a laboratory of life."

Ludmila Shvetsova: "The reform did not spring out of thin air. It was born out of practical experience."



Yuri Yakuba: "Making a mistake in choosing a profession or a trade is a misfortune not only for the person but also for society."



Boris Nikitin: "Making demands on a child that correspond to his or her abilities is good."

about equipment, raw materials and technology? The state will have to allocate a lot of money for all of that.

YURI YAKUBA, a member of the USSR State Committee for Vocational Training: Vocational schools providing general secondary education are the best way to solve the problem. There are 4,500 of these schools in the country at present, and 96 per cent of the students who attend them receive a sound secondary education while they learn a trade. Incidentally, schools like that cost the state much more than general education schools.

Vocational schools prepare skilled workers for 1,500 trades, some of which have only appeared recently with the revolution in technology, for example, jobs like adjusting programmed lathes and industrial robots, working with microprocessors, and so on. All high school graduates are guaranteed a job for which they have been trained. It is justly said about the Soviet Union that in our society jobs seek people, not people seek jobs. Under such circumstances, making a mistake in choosing a profession or a trade is a misfortune not only for the person but also for society. To rule out such mistakes, we are tirelessly refining the system of vocational orientation, and in this, science comes to our aid.

The number of students attending vocational schools will soon double. This will pose quite a challenge to our committee.

PAVEL NAUMOV: At this point I'd like to ask a question that many parents have asked me. Presently a 15- or 16-year-old has three ways to finish his or her secondary education: the general education school, which is usually followed by attempts to

enter a college; the vocational school, which guarantees a secondary education plus training in a trade; and the specialized secondary school, which turns out technicians and other skilled workers with a secondary education.

The Decree on the Guidelines says that teenagers choose a profession according to their personal desires and abilities and the needs of society, in particular, the requirements of the localities in which they live. But what happens if the needs of society are greater than a person's own desires? What happens if a young man or woman who dreams of doing genetic research, let's say, or of studying the art of the Incas lives in a locality where metalworkers or computer operators are badly needed? Wouldn't a potential genius be lost in this case?

By the end of 1983 the Soviet Union had 155.3 million people who have a higher and secondary (8- or 10-year) education. This number represents 87 per cent of the able-bodied population. At present 44.5 million students attend the 142,000 general education schools in the country. There are 2.4 million students learning a trade and acquiring a secondary education simultaneously in the 4,700 vocational schools and 4.5 million students being trained as mechanics and nurses, among other occupations, in the almost 5,000 specialized secondary schools.

Guidelines for Reform of General Education and Vocational Training adopted by the Supreme Soviet of the USSR on April 12, 1984

IGOR BESTUZHEV-LADA: A counterquestion: Can anyone recall a case where a young person eager to do research in genetics was forced to work in a factory? People of genius are free to make their own choice. Talent is not only personal wealth but social property, Lenin said.

Now let's look at the problem from society's point of view. The recent situation was as follows: Previously 75 per cent of the eight-year school graduates went on to the ninth grade with the intention of entering a higher educational institution, and the remainder enrolled at vocational schools. The proportions were different in some places, though. In Leningrad, for instance, vocational schools have clearly demonstrated their benefits in providing excellent secondary education and working skills. Fifty per cent of the city's eight-year school graduates entered vocational schools—but even that isn't enough for the national economy to run smoothly. After all, we need more hands than scientists. Therefore, the proportion must be like this: 75 per cent of teenagers going to vocational schools; 25 per cent, to the university. But the choice has to be voluntary and conscientious and follow a serious assessment of one's abilities. Meanwhile, most boys dream of becoming space pilots, and girls movie stars.

But, as is said, the proof of the pudding is in the eating, and you have to try your hand in real work before you can assess your abilities and talents. I say this to you not only as a sociologist but as a father: Vocational schools are much better than traditional schools.

secondary education, they give them a trade, which implies civic maturity and independence, both financial and psychological.

Last but not least: Graduates of vocational schools desiring to enter colleges or universities have the same chances as graduates of traditional schools. And more than that, if they have chosen a specialized college in the same field in which they have excelled, they are given preferential treatment.

Today the rapid and harmonious development of the economy and culture, the improvement of social relations, the political superstructure and the individual as the principal productive force and our greatest social wealth call for a new and broader approach to the education and molding of coming generations. The Communist Party is working to make the aim of education not only the sum total of knowledge but also the fostering in people of the awareness of being citizens of a socialist society, active builders of communism, armed with the corresponding ideology, morals and interests, who possess high standards of work and behavior.

PAVEL NAUMOV: So we needn't worry about talented young people; they won't perish in obscurity. Besides, a teenager's choice of career is often dictated not by his or her own preferences but by parental ambitions: About 40 per cent of Soviet school graduates choose careers on their parents' advice, but parents are not always the best counselors.

Now it will become easier for our teenage children to make serious and unbiased choices, and they'll have a better chance to fulfill themselves and avoid disillusionment. This is very important: Our children are not merely future workers, scientists or farmers but, above all, people. How does that intricate, strictly individual process of personal formation in that enormous institution called the Soviet school system develop? What have the Guidelines to say on the matter?

LUDMILA SHVETSOVA: I don't think it would be an exaggeration to say that the very problem of building personality underlies the entire reform: We are convinced that a vital creative society must consist of individuals, not of obedient and indifferent slaves to somebody else's strong will. That is why the new law envisages a qualitatively better education because to become a truly actualized person, one has to be well educated, and not simply with a large amount of mechanical information crammed into one's brain but with knowledge that is creatively assimilated.

In other words, what the Soviet educational system is after is for every person's talents, human potential and individuality to be actualized. The new curriculums, teaching methods and new measure of schoolchildren's participation in the social effort, production included, promote personality development. The schools have already been doing work along these lines, but the reform will provide an impetus for more to be done.

PYOTR ATUTOV: Some people see our job as providing early and broad vocational training for schoolchildren, as dictated by the need of our national economy for workers in certain branches. To

look at things in this way implies a very narrow-minded view of things. Vocational orientation by no means sets personal desires and social interests against each other; on the contrary, they coincide here. The economy gains workers who have chosen their trades according to their *inner motivations*. The all-round personal development of people who have not yet found careers in keeping with their talents and abilities is not worth talking about seriously. Someone once said long ago: Craftsmen who know and love their art are heads above and much happier than boring poets, pedantic scientists or mediocre generals.

IGOR BESTUZHEV-LADA: The humanization of education is another crucial aspect of the question. Isn't it somewhat paradoxical that in our technological age, with its demands on mathematics, physics and the other sciences, the Soviet Union is expanding its school curriculums in the humanities? That's how eager our society is to educate not merely recipients of information but harmonious personalities endowed with creative gifts, kindness and a sense of justice—people to whom supreme joys are accessible. Those are the kind of people who are in demand in Soviet society.

PAVEL NAUMOV: I'd like to offer another question for discussion. The Guidelines note that education will increasingly take up more of a child's leisure time. In addition, with six-year-olds entering school, the transition from 10- to 11-year schooling in the country is beginning. Does this mean that the home will play a lesser part in a child's upbringing?

SOFIA LYSENKOVA, a schoolteacher: I have been teaching for almost 40 years, and I am certain that the question should be expressed the other way around: How can one combine and blend education in the school and in the home? We are deeply alarmed by the fact that many parents fail to spend enough time with their children. The result of this is that the parents feel hampered in communicating with their children, and they lose their "parenting abilities." They, too, will be helped by the new law, which has a direct bearing on the need for educating parents in their primary profession, that of being a father or a mother. There are at present many channels through which this might be achieved—though they are not used as often as they might be. For example, there are popular teaching books, television, movies and family counseling centers, among other things. At one center in Moscow, social psychologists counsel both parents and children. They are helping fathers and mothers understand their youngsters and are exploring ways to better communication in the family.

A new structure of general secondary education and vocational training will be established: Elementary schools will include grades 1-4; intermediate schools, grades 5-9; general education secondary, specialized secondary and vocational schools, grades 10 and 11.

IGOR BESTUZHEV-LADA: Here is an idea that would be ideal. Soviet teachers have much work to do besides their classwork: chaperoning class trips, sponsoring clubs and societies, and so on and so forth. Now they'll be even busier. Though teachers receive extra money for these activities—there are special allocations for extracurricular activities—they are also human!

It occurred to me that teachers don't have to be superhuman at all. Why shouldn't parents shoulder at least some of this work? Aren't there parents who would like to become involved in the schools and who are qualified to do so? Imagine fathers

coming to the school once a month to take a class on a field trip, another parent refereeing a school soccer game, still another debating philosophical ideas with a class; in short, parents should assist teachers. I am sure all teachers will find parents willing to help them educate their own as well as other people's children.

I wrote an article outlining my idea, and I received so many letters that I saw I was not the only one who had it. Actually, it was far from being original. Many schools are doing just that, and with great success. It is up to us to support their efforts. I am glad that the new law will do just that.

PAVEL NAUMOV: All our hopes are focused on teachers; the state and the family are looking to them with special interest. It isn't for nothing that teachers have been nicknamed "society's solicitors," those to whom we entrust our dearest possessions, the minds and futures of our children.

Children also expect a lot from teachers. I remember reading an article in which they defined

About 11 billion rubles is being allocated from the USSR State Budget to carry out the reform. During the Twelfth Five-Year Plan period (1986-1990) it is envisaged to build schools for seven million students (almost double the present five-year plan period's school objective), 800 vocational schools and many facilities for extracurricular activities. The salaries of teachers and other workers in education will be raised by 30 to 35 per cent on the average. About 6,000,000 people will benefit from the increase.

their ideal teachers as people who are kind, understanding, just, intelligent, loving, approachable, honest, sincere, industrious, endowed with a sense of humor, well dressed and who never say to their pupils, "First finish the university, then you'll have the right to argue with me!" This list is far from complete, of course.

SOFIA LYSENKOVA: Add another quality: proficient and eternal quest. Teachers will grow and develop along with their students. And teachers will be respected. They do a very difficult job. As I observed the discussion of the school reform—I even wrote down its crucial points in a diary—I heard many people stress that the prestige of teachers be increased. The variant adopted by the USSR Supreme Soviet took those opinions into consideration: Teachers' salaries have been raised by 30 to 38 per cent on the average. Their housing conditions will also be improved. The best and the most talented people will receive moral and material incentives, too.

We teachers have much to do as well. We have to constantly update our education and improve our work. It is no longer sufficient to give children an idea of what humankind has long since discovered: We must foster in them the ability and desire to constantly progress and provide guidance in the direction of that progress. The school is not a preparatory stage for life; it is life itself at its beginning—a beginning not only of an individual's life but of society's future.

"Today's children will tomorrow become our judges; they will criticize our opinions and actions. They are entering the adult world to perform the inspired work of creating new forms of life," said Maxim Gorky, a writer of great insight and wisdom. I believe those words with all my heart.

CREATIVITY IS MOST IMPORTANT

I am an industrial arts teacher, and my most important task is to develop in students a respect for making things with their own hands and using their imagination because I believe people do their best work when they put something of themselves into what they are doing. But how can the right vocation be determined for teenagers if often they themselves do not know what they want to do? How can I help them discover their own talents and develop them, rather than stifle them?

Most of my students wanted to be sea captains, but even if you take into account that Moscow, which is quite nearby, has an outlet to five seas through a broad network of rivers and canals, such a large number of skippers would surely not be needed all at once. Therefore, my students and I decided to explore other possible vocations together.

We didn't do this by talking but by working. Reutovo is landlocked, but there is a large room in the school that has a machine tool and all of the equipment needed to build ship models. We began by putting them together. The first things we tackled were learning to read diagrams, to use a chisel and to distinguish between a mainmast and a topmast. All of the students were excited by the idea—we read travel books, studied maps and even learned English. The students knew that they couldn't become skippers overnight, but they began to realize that fantasizing about it could be just as interesting.

In the beginning all of our activities were limited to the industrial arts class time, but soon they began to take up more and more afterschool hours, too!

Our Motto

"To know and to be capable of doing many things" has become the motto of the class. I try to encourage students to come up with original ideas and to make reasonable digressions from standard models and programs. I also insist that they look for similar features in different items and differences in similar things. In short, I try to instill in my students a love for work, which, I believe, is impossible without developing professional skills, a knack for doing things and a quick mind.

Of course, you cannot teach someone how to be creative in the literal sense of the word—it is, so to speak, a "super-task." But every student has something he or she is interested in, for example, building ships, drawing or making models or many other remarkable items. Pictures made by students hang throughout the school, and the carved wooden panel at the entrance to the building was designed and made by my students. They have also invented various games for first graders to play during recess. For us, teachers and parents alike, our task had a far-reaching aim—to bring out hidden talents and help students choose a profession.

The Right to Make a Choice

From the ages of 10 through 12 children are actively searching for their true identity, and experts consider the early teens the most critical period in a child's future vocational orientation. Therefore, by that time youngsters should have an inkling as to what they want to do and if they are capable of doing it. Schools should provide guidance only.



"To know and to be capable of doing many things" has become the motto of the industrial arts classes taught by Igor Volkov (left).

To me, this period in a young person's life is very aptly described by the German word *Irrenjahre*, meaning "the years of error," the restless years. Young people must be given help in finding their gifts, in coming to understand themselves and in getting their bearings in the world around them. That is why the teens are considered years of discovery, a period which in many respects determines their future success.

These problems are not new; they have always been with us, and teachers have always found their own solutions to them. What I consider to be decisive in this respect is the teacher-student relationship. For the most part my school tends to take a traditional view of the problem. For a long time I, too, followed the pattern according to which the teacher conveys the information to the pupils who then assimilate it. Metaphorically, knowledge is poured from a full vessel into an empty one, with, so to speak, one giving charge to the other. But, in reality, the youngsters are saturated with information.

This again brings me to what I consider the most important word in education—creativity. It implies making something new, whether by yourself or with others—your teacher or your classmates. Whether they are building a small boat or putting together a model of a large ship, whether they are constructing a table or a model of a unique monument of ancient Russian architecture, I always want my students to learn as much about the topic as they can from books and to become completely involved in what they are doing. Then they will be able to experience the satisfaction of a job well done.

In my opinion, teenagers who exhibit self-confidence, who say, "we are capable of doing many things," will be able to make a wise choice when it is time to decide on a profession.

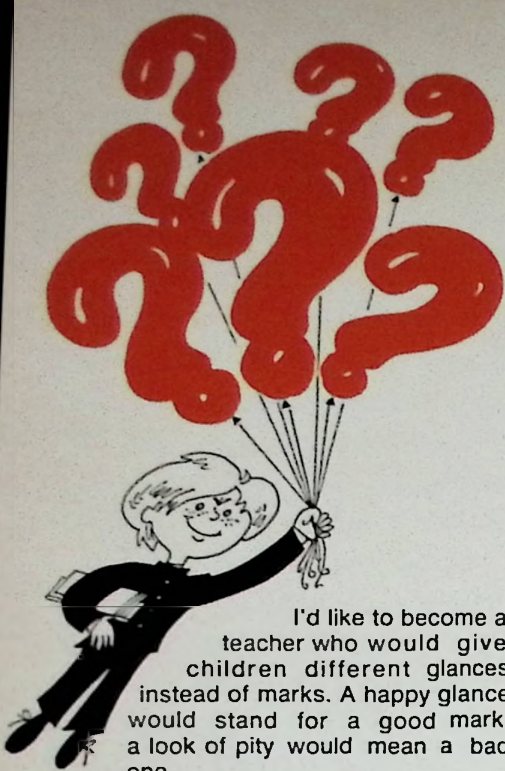
During the past 50 years there has not been a single day in the USSR when a person was told that his or her hands, skill, ability or profession was not wanted. This is still true today. However, in our age, in the 1980s, the age of the scientific and technological revolution, the complicated economic machinery calls for a better matching of "I want," "I can" and "I must." People must not only do their job skillfully, they must do it willingly or, if you like, with all of their heart and soul. ■

Although books by schoolteacher Igor Volkov have come out in rather large editions (300,000 in all), they never remain on bookstore shelves for long. They sell out in no time both in Reutovo, the small township in Moscow Region where Volkov lives and works, and in Moscow, capital of the USSR. Volkov's books are bought not only by teachers but by parents, too, because they are about a very important subject: teaching children how to be creative. Here is what the well-known educator and writer told SOVIET LIFE correspondent Lyudmila Ivanova.

If I were a teacher

Drawings by Valeri Belyakov

Close your eyes and imagine that you've suddenly become an adult! And not just any adult but a teacher—a math teacher, a geography teacher . . . or even a school principal. How would you teach your students? What would you change about school? In general, how do you picture the school of the future? These questions were asked of boys and girls, 7 to 14 years of age, in various schools all over the USSR. The answers they gave were very different and, at times, unexpected, funny or even quite serious. Some were very immature, others surprisingly sophisticated. Presented here is a cross-section of the responses that were received.



I'd like to become a teacher who would give children different glances instead of marks. A happy glance would stand for a good mark, a look of pity would mean a bad one.

An angry look would make the worst student fear that his favorite teacher was angry and no longer loved him! I suggest smiles and love for marks.

Anton Korolyov, 14
Novosibirsk, Western Siberia

I'd do away with homework assignments! Now we have to solve problems at school and solve problems at home!

Andrei Tikhomirov, 12
Moscow

I'd introduce a new subject—which would involve singing, painting, literature, to be taught at theaters, museums and libraries. Our teachers would be musicians, painters, writers.

Ira Ovcharenko, 13
Vinnitsa, the Ukraine

I'd introduce dancing lessons. Then I'd be dancing with Katya Ivanova all the time. Now she won't even look at me.

Denis Khranchenkov, 10
Dubna, near Moscow

If I were a teacher, I'd never call parents in to see the principal! As yet, nobody has become the better for it!

Alyosha Yermalayev, 12
Sverdlovsk, the Urals

I'd do away with marks! Bad marks only cause trouble. Well, if I had to, I'd leave only excellent marks. They are pleasant to receive, and they always make Mother happy.

Seryozha Kazachok, 9
Zolotonosha, the Ukraine



If I were a teacher, I'd allow children to bring their pets—cats and dogs—to school. My cat Belka stays home alone all day and misses me terribly! And I miss her, too.

Ira Chesnokova, 8
Village of Mokhiryovo
Sverdlovsk Region

If it were in my power, I'd make September 1st—the day the school year begins—a holiday, and our parents wouldn't go to work but would come to school with us.

All the streets would be decorated with flowers and autumn leaves. All adults would be smiling as they watched us go on our way to school. And on that day we'd be given gifts at school.

Olya Krapivina, 8
Tyumen, Western
Siberia

If I were the principal, I'd permit pupils to decorate and paint the school themselves, inside and out. Particularly outside. I'd paint it in such a way that even from a distance everybody could see that it is a place where children are kings. My school would be done in all different colors.

Denis Starukhin, 11
Moscow

I'd build a school in a big glade in the forest. The door of each classroom wouldn't lead into a corridor but directly into the forest. And in the forest would grow wild strawberries and lilies of the valley.

Oxana Derevyanko, 13

I want to become a geography teacher and teach all of my classes in the forests, the fields and the streets. I'd like to take my students all over the world. We'd study Africa in Africa and learn about America in America. I love traveling very much.

Kolya Lishin, 14
Moscow

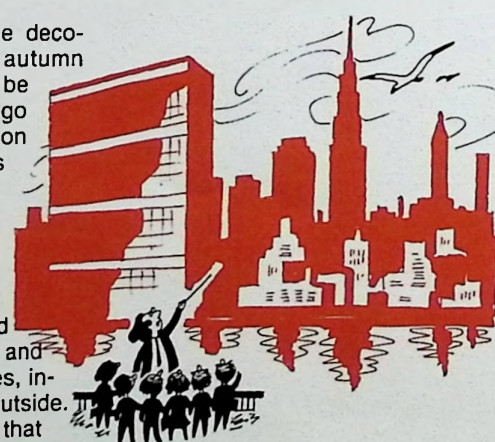
If I were the principal, I'd make all classes very small, say 10 pupils in each. The children could join any class where their friends were. And they themselves would choose their teacher. And the ones not chosen would have to leave the school.

Slava Revus, 14
Vinnitsa, the Ukraine

If I were the principal of a school, I wouldn't hire any teacher who didn't smile. Children want cheerful and kind people. Let angry ones work someplace else.

Tolik Bakeyev, 10
Krasnodar, Southern Russia

It seems to me that only young teachers should teach at school so we could go on excursions, play soccer during recess and share our secrets. I've been wondering for a long time how we could keep teachers from growing old, and I've decided that all the



medicine already in existence and any yet to be invented should be given to teachers first. And those who don't want to be eternally young, should retire on pension at the age of 35.

Nikita Pruntsov, 11
Nalchik, the Caucasus

I wish we'd be given ice cream at school every day. At home I'm not allowed to eat it because I have a bad throat.

Zhenia Mezentsева, 7
Dubna, near Moscow

I'd teach many different languages in the school of the future—five or even eight—in order to understand people from different countries. Maybe then all the countries would agree to live in peace.

Vadik Nosov, 13
Lobnya, near Moscow



If we were teachers, we'd have an hour each day to answer all of our pupils' questions. Here, for instance, are some we'd like to ask:

Which will go faster, a robot or a man, jumping over different holes and barriers?

Are there islands in the world with only one inhabitant?

What are false teeth made of?

Will fish swim in hot water if a volcano unexpectedly erupts on the bottom of a lake?

Lena Vlasko, 9, and
Olya Yurkova, 8
Village of Severoonezhsk
Arkhangelsk Region

I wish the teachers would sit at our desks at least once a year, study our curriculum, do our homework assignments and sit still in class. And for the smallest infraction they should be given bad marks, and their parents should be called in to see the principal. Then they'd understand us!

Andrei Melentsov, 13
Sverdlovsk, the Urals

I don't believe that there will be any schools in the future. We'll be taught in our sleep. And in the daytime we'll paint, sing, make models, read and, of course, go in for sports.

Natasha
Yermolenko, 12
Murmansk,
Northern Russia

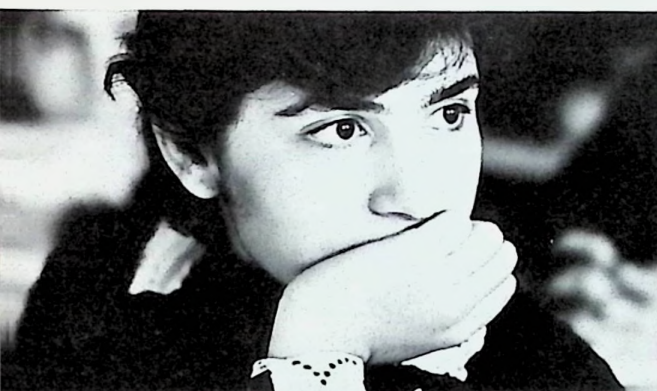




Emma Karapetian, an Armenian who teaches Russian in an Armenian school, maintains that students taking her course will expand their horizons, and a myriad of new areas to explore will open before them.

LEARNING RUSSIAN OR WHAT TO SAY AS AN ARMENIAN COSMONAUT ON VENUS

By Henrietta Repinskaya
Photographs by Vsevolod Tarasevich



"Any subject can be fascinating if there is good rapport between the teacher and the students," says Emma Karapetian.

"Stimulating their minds, and keeping them stimulated, is my most important function. I'm not simply interested in hearing students give the correct answer; I want to know how they arrived at it."

Top and above:
Classroom scenes.



love of one's homeland and of one's native tongue, so typical of every person, has special meaning for Armenians. For millenniums foreign invaders tried to destroy the Armenian people as a nation, and it was only the immense love of their land and of their language that helped them survive despite unbearable hardship.

Emma Karapetian, an Armenian, teaches Russian in an Armenian school.

"When I enter the classroom," says Emma, "I face 30 kids bursting with energy. They'd much rather fidget, play games and make noise, but it's my job to teach them grammar. Once when I walked in, I spied one boy who had cheeks covered with smudges of colored chalk and pens sticking out of his hair like feathers. He looked me straight in the eye. What am I going to do with him? I thought. Schools are one of the most conservative institutions by nature, a place where almost everything is forbidden. Pushing and shouting are not permitted because they are regarded as rude behavior, and one is allowed to run and sing, but only in P.E. and music classes.

What I was facing, however, was a little boy who was playing Cowboys and Indians. I felt compelled to make my class more exciting than the prairies across which he was galloping oblivious of any teacher."

Lesson One: Space

From the moment Emma Karapetian enters the classroom, time flies. To help the students master their skills in reading and speaking, she constantly goes out of her way to refute the conventional idea of Russian being an extremely difficult language. She believes in getting everyone involved as soon as possible so she quickly fires questions at the students, which they answer in turn. First someone in the front row raises a hand, then someone in the back. Finally the middle row starts to come alive. Emma conducts her lessons like a theater producer directing a major performance. She takes in everything that is going on, for example, the somewhat hesitating hand raised from a desk in the middle row, or the bewildered look of a pupil who hasn't quite grasped the meaning of a new word. She encourages the meek student and introduces the "strange" word in a string of synonyms.

"Who would like to go into outer space?" she asks, starting a space game in Russian. "Surik. How do you become a cosmonaut?"

"You must train yourself physically, get good grades at school and study foreign languages," he retorts.

Now Emma assumes the role of a TV announcer: "Twenty years have passed since the spaceship commanded by Surik Zakarian was launched."

"Let's congratulate Surik!" the class chimes in unison.

"How should we do it?" the teacher asks.

"Send him a telegram," one boy shouts out.

"Phone him," says another.

"Okay. Let's say we phone him," says Emma. "Arik Arutunian, you're Surik's best friend. What would you say to him?"

"Hi, Surik. This is Arik Arutunian."

"Arik? I don't remember any Ariks," says Surik, somewhat bewildered.

"So you've forgotten your friends now that you've become famous?" shoots back Arik.

"Surik has no right to go into space if he's going to forget his friends," a small voice adds, obviously perturbed.

"I agree," says the teacher turning toward a young girl, "but let's say he has misheard the name. Now, Class, think up some questions you would want to ask the cosmonaut. First, Surik, what would you say if you landed on Venus?"

"I don't know," the cosmonaut replies.

"Why don't you say: 'Hello, where can I get a good shashlik here?' " somebody prompts.

Then Emma switches on a recording of the world's first cosmonaut, Yuri Gagarin, and the class listens attentively, never doubting for a moment that he was addressing them personally. "You are to discover other worlds and new planets. Be worthy of it. . . ."

"This has been a good lesson," says Emma, in conclusion. "I'm happy, and I hope you are too. Happy people feel like loving others, are generous and make others happy."

Lesson Two: Bread

"Why do people stand up to cut bread?" asks Emma.

"Out of respect," answers a boy in the front row.

"Old people say that it's the man's job to cut bread. Why?" the teacher continues.

"It's a man's job to grow grain, so it's a special honor for him to be the first to touch what he has grown," remarks a black-haired girl.

"Show me how you serve bread," Emma requests.

At this Russian lesson the children have learned that one of the world's oldest varieties of wheat was found in archeological excavations in Armenia in 1934. They have also been told that the grain grown in the republic can only feed the population here for several months of the year. That's why Armenia receives bread supplies from other republics of the USSR.

The children have also found out about farmwork: plowing the soil, sowing seeds, protecting the crops from pests and weeds, irrigating the fields (2,500 liters of water are needed to produce one kilogram of bread), and harvesting

Three faces of Emma. Right: At home with her family. Facing page, top and bottom: The teacher spends many off hours preparing her presentation so she will be bright-eyed and cheerful in the classroom.



crops, taking grain to the elevators, grinding it into flour and baking it into bread.

"Now tell me," Emma says. "What kind of bread do you buy at the store?"

"Bread that smells good," "is tasty," "fresh and cheap," the students say, one after the other.

"It is cheap, for sure," says Emma, choosing the word she needs at the moment. "Cheap as far as price goes, but if we take into account the effort that was needed to produce it, then bread becomes priceless, invaluable. Please write down, 'I-N-V-A-L-U-A-B-L-E.' This is our word for today."

Emma begins a discussion on how Robinson Crusoe dropped to his knees when he saw a sprout of wheat. Next the class recites Armenian poems about bread, critiquing their artistic merit in Russian. Then the students jot down the topics for their homework compositions in their notebooks: "Our Daily Bread" and "Man Does Not Live by Bread Alone."

Today the class has focused on only one new Russian word, but it has been looked at from many angles.

The school bell rings. The lesson is over.

Emma's Ideas on Teaching

A school corridor. A door marked "Ninth Grade." A youthful voice is heard behind it. The young man is reading from a book by Leo Tolstoy: "What I would like to say is that all ideas of great consequences are always simple. The gist of my idea is that if vicious people are linked with one another, thus presenting a force, virtuous people must be the same. This is that simple."

It is extremely difficult to read Russian prose with proper intonation, but this student is not just reciting it, he is delivering it with feeling.

"Students always return to you what you give them," Emma says. "If you as a teacher are completely open-minded, your students will be the same. If you are neatly dressed and alert and approach a lesson enthusiastically and creatively, you are bound to impress and influence them."

A colleague of Emma's who teaches history says: "When I enter Emma's classroom, I see 30 intellectuals in front of me." This is a great compliment.

School juniors recall that after their very first lesson with Mrs. Karapetian they must speak only Russian in the classroom, though their teacher's native language is Armenian and she has a perfect command of it. Emma firmly believes that a person must master his or her native language before tackling other languages.

"The Russian language," she says, "exposes students to boundless sources of information. It gives them an opportunity to become acquainted with other cultures, and, in turn, to familiarize others with their own Armenian culture. In my very first class I point out that the Russian language will expand their horizons and open up new areas of study to them. It will help them learn many new things and give them a better understanding of what they have already learned."

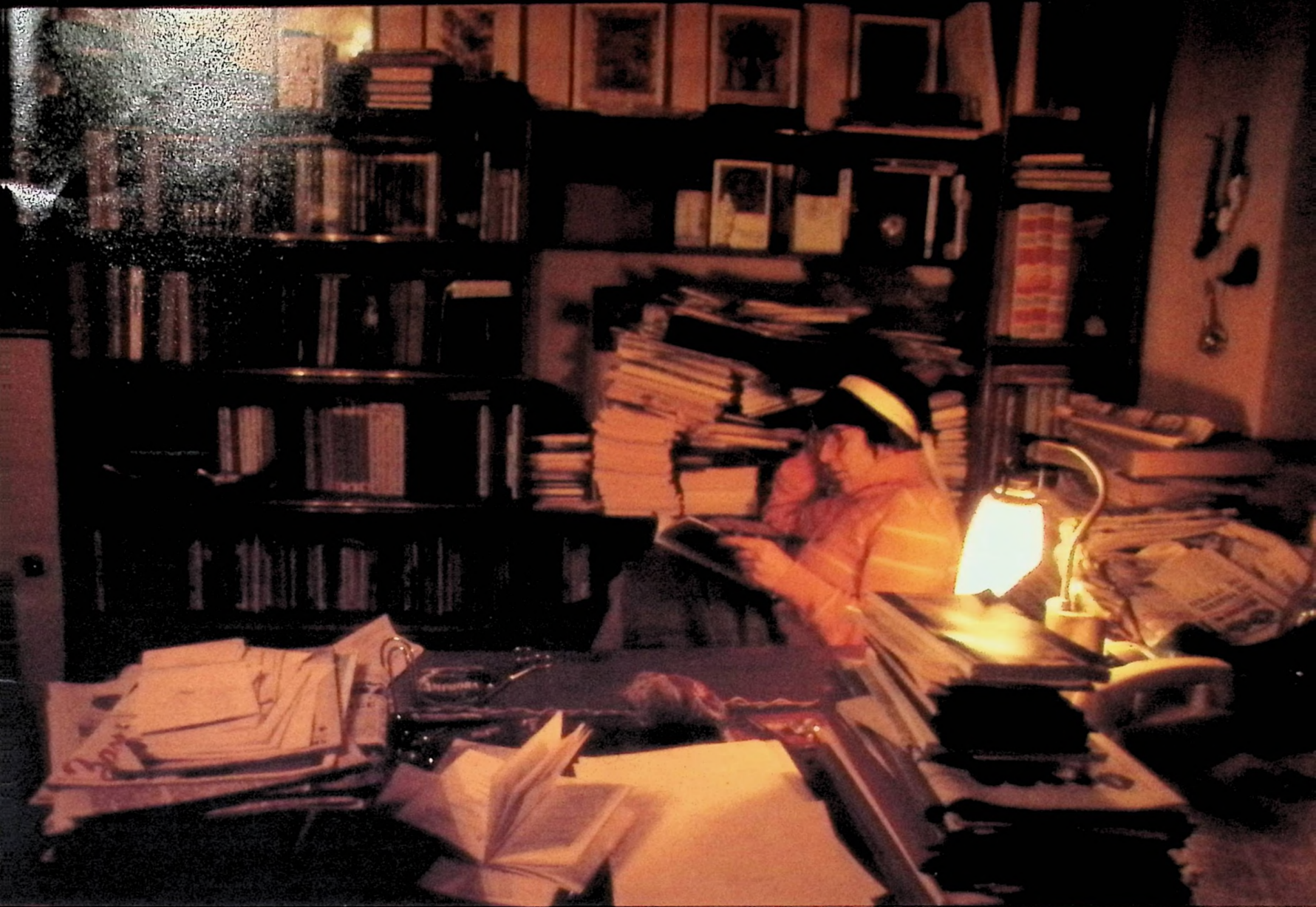
At first her students are positive she knows everything about everything, and the teacher doesn't try to dissuade them. On the contrary, she supports this initial impression.

"It is only when they are absolutely convinced that I know more than anyone else—only then and not before—that I feel I can admit I don't know something, by then it has become something natural," says Emma.

Knowledge doesn't come on its own. Modern music, movies, the latest scientific achievements and new books—Emma's students are eager to discuss any topic with her. They don't like to think about her wanting to spend time with her husband and children or about the many hours she spends at night preparing her lesson plan.

"I sometimes feel that I'm the only one who knows how hard it is to be a teacher, that my school responsibilities consume all of me and give me nothing in return. But every time someone asks me why I give so much of myself at school, I reply, 'It's easy because I love my job and it makes me happy.'

"I'm convinced that every lesson *can be* and *should be* a creative festival, a quest for the truth. This means that everyone who joins in is bound to be intelligent, talented and beautiful. I am proud to be a teacher. It is a profession that brings me so much joy, refreshes me and affords me a great deal of independence. I can't imagine my life without teaching."





EDUCATION BOOM

By Simon Soloveichik
SOVIET LIFE Commentator

WHEN THE EDITORS of SOVIET LIFE magazine approached me to write a series of articles on children's upbringing at home and education at school, they said that they didn't want me to describe education in the USSR but to comment on all major problems facing educators around the world and to show how they are being dealt with (or, alas, not being dealt with as yet) here. I quickly accepted their challenge because I've been specializing in education since 1947. That was the year I was first entrusted with 30 children (not my own) for the summer months and the year I received my first paycheck for helping in their upbringing. In hindsight the money was wasted on me because I was an exceptionally bad teacher, but I learned very quickly that any contact between grownups and children immediately creates a snarl of solution-proof educational problems.

Since then I have been a village schoolteacher and a supervisor at a teen center. I have also worked for a children's magazine and a youth newspaper. I have written nearly a score of books, plays and TV scripts for children and about children, not to mention the fact that I have also raised (of course not by myself, but along with my wife) three children.

Although I've been involved in education for over 30 years, a very basic question, which somehow never occurs to parents, teachers or educators, has finally dawned on me. What are the minimum requirements needed for a family to bring up its children to be good people? What is the cornerstone of upbringing?

However, even after thoroughly analyzing the question and making all possible comparisons with real life, no conventional answer totally satisfied me as the final truth. And we mortals are weak! We are constantly searching for the definitive answer, the ultimate truth, because it is that answer, that truth, that gives us courage. The stronger our faith in the truths that are known to us, that is, the firmer our convictions, the more stable we are in real life. In other words, the courage we show is dependent on whether our truths are universal and on the strength of our convictions. Our success in educating children depends on the same factors, too. Here I offer you the result of years of reflection. Please ponder it. It goes as follows:

A child's moral character fully (100 per cent) depends on whether his or her parents or any other person involved in his or her upbringing believe in the existence of truth on Earth and in the possibility of adhering to this truth throughout their lives.

The problem, as you might guess, is not a simple one. It may be unsettling because of its obvious impracticality and ambiguity, and it may give rise to many questions, for example, you might wonder what I mean by the word "truth."

The Russian word that is synonymous with the English word "truth" has somewhat broader implications, which is why it is so difficult to translate. The Russian word means both the real state of affairs and justice (the truth as opposed to a lie) and something ultimately sacred, some superior ethical value. It is not, therefore, fortuitous that many peo-

ple try to pass a lie over for the truth and that no one has ever tried to pass the truth over for a lie.

During the October Revolution of 1917 or the Civil War that followed, both periods when people fought and died for their cause, they would say that they were fighting and dying "for the truth." This awareness of the ultimate truth, often subconscious, is present in the minds of the majority of people inhabiting our planet. The truth looms in every human heart, and we try our best to pass it on to our children. This is what I call "upbringing." The upbringing of children is not simply teaching them to be well-behaved or to have good manners. Actually, it doesn't mean instructing them in anything. Upbringing is the awakening and instilling in children a faith in the truth, and in this way we pass our own faith on to them.

Now let's look at the educational situation in the world today. Sometime around the 1950s the world experienced a demographic explosion, and the populations in many countries, though not all, grew rapidly and unexpectedly. Several years later talk about a so-called education boom began. Unfortunately, this phenomenon only occurred in advanced countries, and the number of children receiving a relatively high standard of education rapidly increased. General primary education was first introduced in the USSR only after the 1917 October Revolution, and not in all parts of the country. In the early 1930s we lagged 50 years and, in some spheres, even a whole century behind our Western neighbors. But immediately after World War II compulsory eight-year education—later compulsory 10-year education—was begun in the country. All of these facts are fairly well known.

However, we haven't fully comprehended that sometime around the early 1970s a third boom, one which I call "the upbringing explosion," took place in some advanced countries, for example, the Soviet Union and the United States. There are no studies published about what I call "the third boom," and there are no terms to define it, but the situation is quite obvious. The thing is that most people have shown a sharply increasing interest (explosive interest is more like it) in how they bring up their children. By this I mean how they raise their own children in their own family. While marriage counseling and family therapy programs have been developing in the U.S., the Soviet Union has been introducing intensive guidance courses in parenting at schools. Some schools have also been holding lectures on methods for teaching children and on child psychology. The amount of information presented in these lectures has been twice the amount given in the same classes at teachers colleges. The family counseling center run by the Department of Psychology at Moscow State University is especially popular today. The center also puts out a monthly series of pamphlets on education, which are written especially for parents. The entire circulation of the booklets comes to around half a million copies. Today any how-to book on raising children, regardless of the number of copies printed, is usually sold out well before it hits the shelves of bookstores because of advance orders. Also, many national and local newspapers have begun publishing items and even whole columns with tips for bringing up children.

For many years foreign observers have called the upbringing of children "A Russian hobby," but never before has the "hobby" (let's leave it at that) been as popular as it is now. Nothing can quench our parents' thirst for educational material. There is indeed an education boom going on in the Soviet Union. That is why the educational reform now under way here provides, among other things, for introducing courses in parenting for adults free of charge.

The reason why an upbringing boom is occurring is sufficiently clear. Never before have living conditions been changing as quickly as they now are. This means that each new generation of parents must rear its children under absolutely new conditions, different from those under which they themselves were brought up. It is not surprising that the knowledge they have inherited in this area from their own parents does not apply in the present situation. That is why they must always search for additional sources of information. Besides (I should have mentioned this first), the value of children in the world has grown significantly. The latest sociological studies show that in the Soviet Union, for instance, the cares and joys associated with having children are greater than any other human joys and cares. Of equal importance is that children growing up in large cities become independent at an earlier age than children living in other areas because they see less of their parents. Hence, many mothers and fathers feel they cannot cope with their sons and daughters without seeking the help of counselors. There are probably other reasons, too, but the most essential point is: How can this universal "thirst" for education be quenched?

I recently read an article that said that a university for parenting has opened in the country. The first lecture given there attracted 900 people—a large number of individuals indeed! However, only 90 people attended the second one and, later, according to the author of the article, "the number went down in a geometric progression." American statistics, too, show that even the most elaborate techniques for instructing parents result in figures close to zero.

The conclusion I've arrived at is that educators are not yet ready to meet the needs arising from the third, upbringing, boom. Today the study of education is a science dealing with the art of bringing up children—not all children, only other people's. As far as one's own kids are concerned, the theories don't work and upbringing goes haywire. This is at least how it appears at first sight anyway.

I admit this is a rather superficial analysis. We continue to incorporate the techniques developed by professional educators in a nonprofessional sphere, namely, our family, while we regard fathers and mothers as second-rate teachers, while we keep asking ourselves: "What can we do if our child is untidy, rude and disobedient and is doing poorly in school?"

The point is that the answers to all questions concerning education lie on an entirely different plane—on the moral plane of truth and one's faith in that truth. Therefore, we must continue to be good examples for our children to follow, and we must be honest with them!

*A portrait of Denis Davidov.
Lithograph from the original
drawn by Karl Hampeln.*



POET AND PARTISAN

DENIS DAVIDOV

By Arthur Tolstyakov
Candidate of Science (Philology)



ROMANCE

*Do not awake, do not awake
My wildest fantasy and passion.
My fleeting dreams' serene perfection
Oh, do not rake, Please do not rake!*

*Say not again her name. It reins
My memory—in grief, and tears.
The banished exile groans and fears
Not death, but songs of native plains.*

*Do not call back, do not call back
Misfortunes long forgot, consumed.
Do not disturb my bleeding wound
Let trembling passion rest, relax.*

*But nay! Drop off the gilded cover!
Thy willfulness will topple my grief,
And coldness—heart's eternal thief—
And peace, deceptive as a lover.*

1834

Denis Davidov (1784-1839) was a famous Russian poet, the creator of hussar lyric poetry. A celebrated hero of the war of 1812 against Napoleon's troops, he developed the idea of vigorous partisan warfare. He himself commanded partisan detachments that struck staggering blows to the French army. Sir Walter Scott admired him and maintained correspondence with him. Leo Tolstoy thoroughly studied his military works and memoirs for *War and Peace*. The great Russian poet Alexander Pushkin and the poet and translator Vasilii Zhukovsky were close friends of his.

Davidov was born in Moscow into an old aristocratic family. His father, Vasilii Davidov, who had been in the military all of his life, was an intimate of the outstanding Russian General, Field Marshal and then Generalissimo Alexander Suvorov. One time, while inspecting the regiment commanded by Vasilii Davidov, Suvorov noticed his nine-year-old son and predicted he would win three battles. Thereafter, as Denis Davidov facetiously wrote in his autobiography, he "threw away his prayer book and, brandishing his saber, put out his tutor's eye, pierced his nurse's cap and cut off the tail of his borzoi, thus fulfilling the prophecy of the great man." As a matter of fact, the legendary general's jovial prophecy did come true later. One surprising coincidence was significant: Denis Davidov spent his childhood on his father's estate in the village of Borodino near Moscow. In 1812 the decisive battle between Russian and French troops took place there.

"Rayevsky's redoubt was built on a hillock where I once played and dreamed," Davidov recalled, "where I avidly read about Suvorov's capture of Italy and the peal of thunder of Russian arms on the border of France." (The place where the battery of General Nikolai Rayevsky stood became the center of the Battle of Borodino.)

Davidov's happy childhood was ended by a trag-

edy that befell the family. In 1796 his father was accused (unjustly, to all appearances) of embezzlement and convicted. His estate was confiscated. The family was plunged into poverty. Davidov, deeply hurt by this distressing incident, considered himself a victim of the "tyrant" Paul I, Czar of Russia from 1796 to 1801. At the age of 17, Davidov became a cadet in a mounted regiment. An officer who continued the remarkable traditions of Suvorov, he advocated humane treatment of the soldiers, protesting against the harsh discipline that the new czar enforced in the Russian Army. His rebellious nature came out in the fables and epigrams that he wrote at the start of his literary career. His early works contained a number of bold and biting allusions mocking the higher nobility and going so far as to threaten the czar. His satires spread quickly and soon became popular. Due to his rebelliousness, the young officer was transferred from St. Petersburg to the Kiev region, and it was only several years later that he returned to the capital. Davidov first participated in the hostilities with the French in 1806, in the capacity of adjutant to Prince Pyotr Bagration, an outstanding Russian commander who was later killed in the Battle of Borodino. Then in 1808 and 1809 he fought against the Swedes and Turks. By 1812 Davidov had experience in three wars, which undoubtedly helped him demonstrate his outstanding military talent during the battles against Napoleon.

On the night of June 24, 1812, Napoleon's troops, having occupied most of Europe, crossed the Neman River and invaded Russia. The Russians had less than 225,000 against 420,000 French soldiers. The Russians were forced to retreat, surrendering one city after another to the enemy. After the fall of Smolensk, General Mikhail Kutuzov, the favorite of the Russian Army, appointed commander in chief, decided to show Napoleon a decisive battle. The bloody Battle of Borodino, which Napoleon, like Kutuzov, proclaimed his victory, lasted for three days, from September 5 to September 7, 1812. History acknowledges that it was for the most part a Rus-



All of the silhouettes for this article were made by Fyodor Tolstoy (1783-1873), a Russian medalist, sculptor, painter and illustrator. The silhouettes depict episodes of the Patriotic War of 1812—maneuvers, an artillery encampment, and the like. The final silhouette shows the parade of the Pavlovsky Regiment.



sian victory. In order to save his army, Kutuzov surrendered Moscow without a new battle, knowing full well that the French army, which was suffering from food shortages, would not be able to carry on the hostilities for very long in a huge enemy country so far from home and in such an unusually harsh climate. His plan worked. On October 19 and October 20, 1812, the French army left Moscow, retreating westward. It was disintegrating under the blows delivered by the Russian troops. Only about 30,000 French soldiers crossed the frozen Neman River on December 12, 1812.

The war of 1812, called in Russia the Patriotic War of 1812, was really a people's war. The invasion of the Napoleonic troops that devastated the country, destroying cities and burning villages, robbing and killing the inhabitants, caused the people to resist and to take revenge on the invaders for their tortured country. The people, but primarily the peasants, bore the burden of the war, fighting as soldiers in the regular army and actively participating in the partisan war.

Davidov played a remarkable role in organizing broad partisan resistance to the French invaders. Having started out in the war of 1812 as a lieutenant colonel of the Akhtyrsk Hussar Regiment, he was the first to expound the advantages of partisan warfare, which won the support of Bagration and Kutuzov. Davidov and other officers of the Russian Army were granted permission to create partisan detachments of regular army soldiers and of civilian volunteers for making unexpected attacks on French transports and isolated units and for engaging small enemy groups in battle. The detachments were made up of soldiers, Cossacks, home guards and peasants. In his book *The Life of Napoleon Buonaparte* Sir Walter Scott wrote that Lt. Colonel Denis Davidov, known to the French by the name of "The Black Captain," was the first (it was shortly before the Battle of Borodino) to suggest to Prince Bagration the idea of carrying on partisan warfare. He achieved great success commanding a small party of Cossacks and hussars who were active in the

area between Gzhatsk and Vyazma, where he captured enemy wagons and destroyed small enemy detachments. He was soon given more troops, and similar groups were recruited with brave men commanding them. They broke the French communications line and destroyed their advance posts, bringing them ruin and misery everywhere.

Davidov developed the principle of partisan detachments on the basis of numerous examples from the Russian peasants' spontaneous actions against the French invaders. When commanding his partisan detachment, he adopted the guise of a peasant. He put on a peasant's tunic, grew a beard, hung a St. Nicholas medal around his neck instead of wearing his Order of St. Anne and spoke in a dialect. Later Davidov generalized his knowledge in his *Experience of the Theory of Partisan Actions*, which concerns raids launched far behind enemy lines, as well as in *Diaries of Partisan Actions of 1812* and other works.

The relations between the partisans and the French were more than complex. The French did not recognize them as part of the regular army and seldom took them prisoner—they shot them on the spot. In response, the partisans also tried to dispense with prisoners of war. There were exceptions, of course. Davidov took pity on a young French drummer boy named Vincent Baud and saved him from death. He kept him at his side and turned the boy over to his father in Paris. Vincent eventually became a literary character. He went from Davidov's memoirs into *War and Peace*, though under a different name—not Baud but Boss: Vincent Boss, "Visenya" or "Vesseni." Petya Rostov took pity on him and gave him something to eat. Leo Tolstoy also introduced Denis Davidov in his novel under the name of Vasili Denisov. The likeness of the subject and the literary character is not just limited to his partisan biography. There is a physical similarity as well. The description of Vasili Denisov—"a short man with a red face, shining black eyes, black tousled moustache and hair"—is the portrait of Denis Davidov. Tolstoy's novel con-

* * *

Yes, I do love you—as you should be loved.

*Despite ill fate and scandal in the town,
Despite yourself I wear love's thorny crown,*

Despite you, sweet and cruel torture, my beloved.

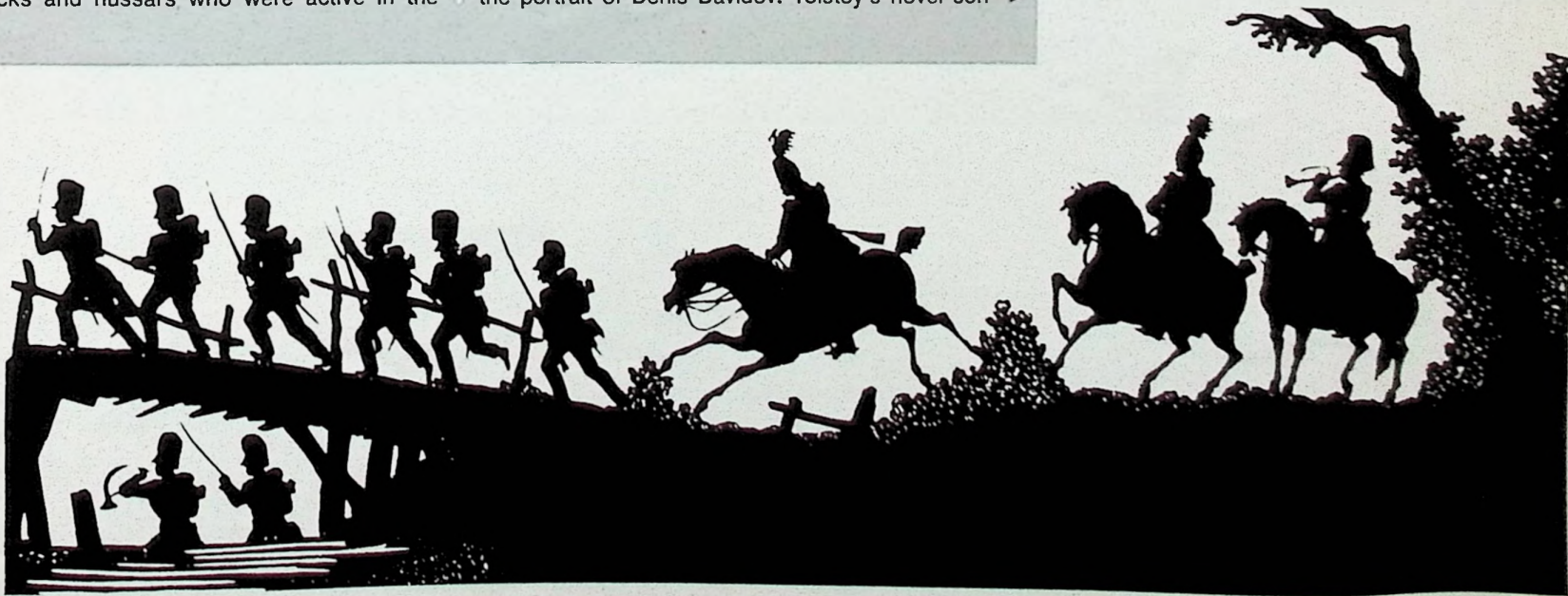
*I love you not because you are
The beauty, nor because your waist is
heaven's paradise,
Nor that the Orient has blessed your lips
and eyes,
Nor that you are the poet's shining star.*

*My love knows neither fear
nor apprehension
Of Moscow on Earth, nor angels in the
sky.
I'd love you were I in my grave or bleak
detention
For what you are—till death, till my last
cry*

*Whom shall I ask for the permit to love,
I wonder?
The shrunken dames who envy all who're
sane?
Respectfully I beg them (but in vain)
To go to hell. And even farther, yonder!*

1834

Translations by Oleg P. Benyukh





Facing page
(clockwise from
upper left corner):
Mikhail Kutuzov
(1745-1813),
Commander in Chief
of the Russian Army.
Lithograph by
S. Cardelli from
Alexander Orlovsky's
original. 1812.
Peasant Gerasim Kurin,
the leader of a large
partisan detachment
in Moscow Province.

tains numerous details borrowed from the life of the poet and partisan.

For Davidov the war against Napoleon's troops ended in Paris in 1814. By then his fame as a national hero had spread not only throughout Russia (inexpensive popular prints bearing his portrait hung in the homes of peasants) but far beyond its borders.

In the mid-1820s, while working on *The Life of Napoleon Buonaparte*, Sir Walter Scott took a great interest in the war of 1812. He had a portrait of Davidov, engraved by Dyton, in his study. It portrayed our partisan as a valiant soldier with curly black hair, a fur thrown over his shoulder and a buckle fastened at the collar, with a scarf for a belt and a sword in his hand. The engraving bore the inscription: "Denis Davidov, the Black Captain." For this reason Scott usually referred to Davidov as "The Black Captain." During that time, Vladimir Davidov, Denis Davidov's nephew once removed, who spoke English, was in England. He often visited Sir Walter Scott. During his first visit Scott spoke at length about the young man's famous uncle. Vladimir Davidov wrote to his father about it, and he, in turn, related the news to Denis Davidov, who decided to thank the English writer for his thoughtfulness and kind words. Davidov wrote Scott a letter in French on March 10, 1826. Scott was greatly interested in the possibility of personal correspondence with the Russian partisan. He wrote in his diary for April 14, 1826, that he had received a letter from the famous Denis Davidov, the Black Captain, who had distinguished himself in the partisan war during the retreat of the French army from Moscow.

In a letter dated April 17, 1826, he paid many compliments to Davidov, saying in particular that "his name will be read for ages in the broadest though most melancholy page of Russian history." He wrote:

I am extremely desirous to know a little in detail the character of the partisan war conducted with so much adventure, spirit and indefatigable activity in the campaign of Moscow. I know that I would be most unrea-

sonable in asking anything of the sort which could occupy your time or occasion you trouble, but a few sketches or anecdotes, however slight, from the hand of the Black Captain would be esteemed by me as an inestimable favor. . . .

It is very true that I have been able to procure a drawing of Captain Davidov which hangs above one of the things I hold most precious, namely a broadsword which was handed down to me by my ancestors, and which in its day was not bloodless, though we have been a peaceful race for three generations. The military spirit has revived in my son who is a captain of hussars and reckoned a smart officer.

Davidov promised to send Scott his published and unpublished works on the partisan warfare in the war of 1812. Circumstances, however, prevented him from carrying out his promise.

In the summer and fall of 1826 Davidov took part in the war that Russia was waging against Persia. He didn't return to Moscow until early 1827, when Scott's book was about to be published, so there was little point in sending additional material for it. At Davidov's request, Scott sent him his portrait—an engraving from the famous portrait by Henry Reuburn with an inscription that the partisan himself had requested: "Sir Walter Scott for Denis Davidov." At the end of 1827 Scott received from Davidov a bow used by the Caucasian highlanders, a Persian sword and a dagger to add to his collection of old arms.

Although Denis Davidov had won "immortal fame" in the 1812 campaign, as Sir Walter Scott put it, his military career wasn't anything spectacular if you consider that he served 30 years in the Russian Army. He finally retired in 1831 with the rank of lieutenant general.

He maintained friendly relations with many future Decembrists—officers and revolutionaries from the nobility—who organized an armed uprising against the despotic emperor. However, subsequently Davidov flatly refused to join the secret society though he violently detested the new czar, Nicholas I, who dealt cruelly with the Decembrists. Davidov's memoirs, published abroad after his death, cite

many facts testifying to the cowardice and cruelty of Nicholas I.

Throughout his life Davidov wrote fascinating and original poetry. He has gone down in the history of Russian literature as the creator of hussar ballads. His friendly letters in verse form an original lyrical diary of a Russian hussar officer. The hero of Davidov's verse is a hussar, a soldier who is a poet, a fine and daring swordsman who leads a wild life. Straightforward and recklessly brave, he despises lies and hypocrisy; flattery and conceit are alien to his nature; he is a freethinker, opposed to violence; he has the noble heart of a patriotic soldier ready to give his life for his country.

Davidov's poems are bold and uninhibited. They are full of unexpected similes, colloquial expressions and military jargon. The best poets of the 1820s and 1830s—Alexander Pushkin, Vasili Zhukovsky, Yevgeni Baratynsky and Nikolai Zazykov—were friends with Davidov; they appreciated his unusual personality and his poetic gift. Davidov was deeply moved when Pushkin told him in praise of his poetry that he had fallen under its influence and had begun to write in a "harsher" and more uninhibited style. And when Davidov asked Zhukovsky to correct his work, the latter responded: "You're joking, asking me to correct your verses. That's like asking me to correct the smile of an infant in a painting, a ray of sunlight on the ripples on a stream, the light of the setting sun on the top of a cliff, and so on. No, dear friend, . . . I wouldn't dare touch your work, and I'm returning it to you."

Denis Davidov was a true poet—in poetry and in life. The famous Russian literary critic Vissarion Belinsky wrote: "For him life was poetry and poetry was life—he poeticized everything he came in contact with. . . ." Davidov himself said that even his partisanship was "full of poetry." His hussar lyric poetry reflected, as Belinsky put it, "a truly Russian character—deep, gentle and vigorous," uniting "daring merrymaking, love of noisy feasts and wild living" with "lofty ideas and noble deeds." Dostoyevsky called him "a Russian of sterling character."

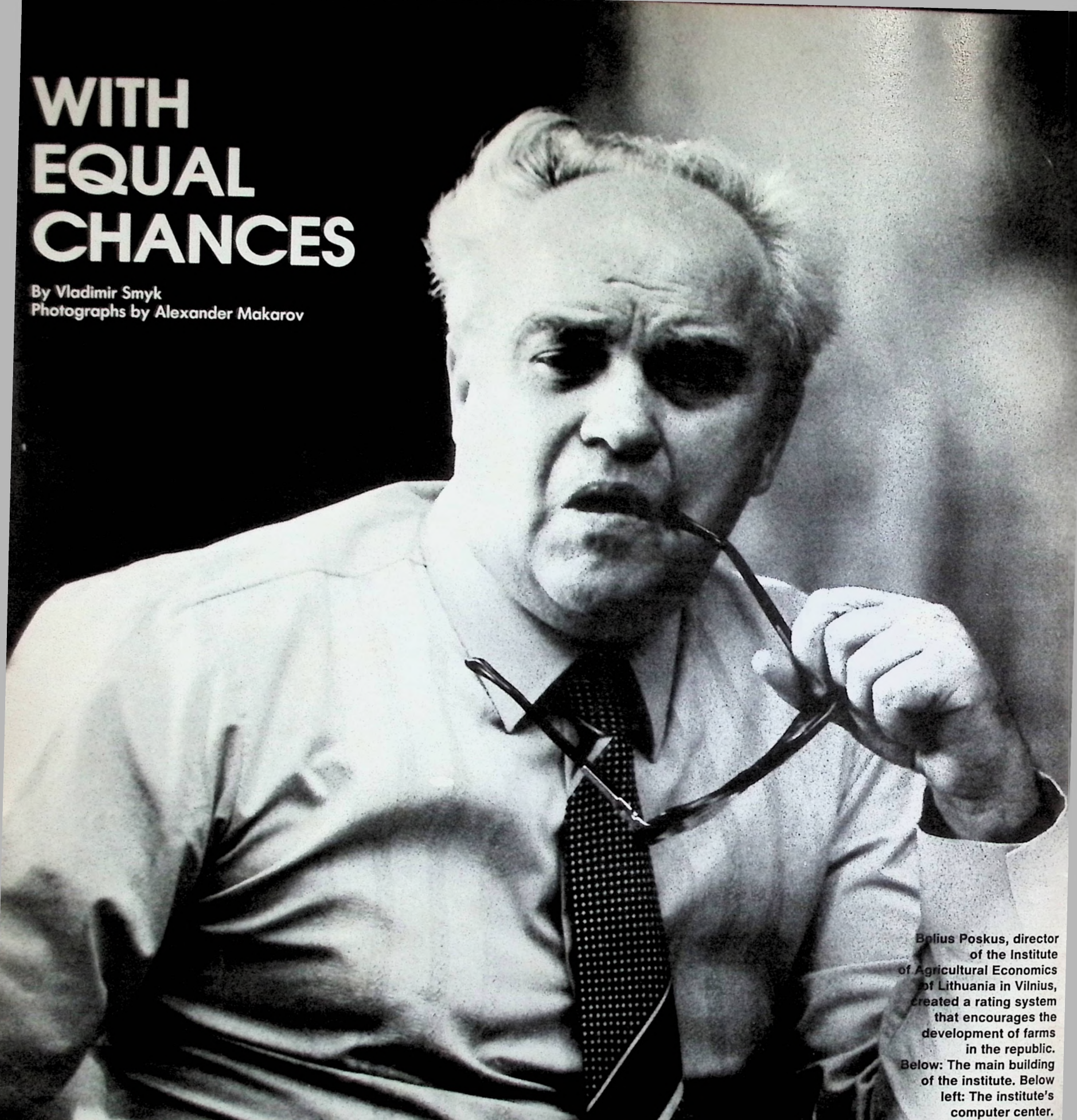


Portrait by A. Smirnov.
1813. Peasant Vassilisa
Kozhina, the leader of
a partisan detachment
in Smolensk Province.
Portrait by A. Smirnov.
1813. Denis Davidov
(1784-1839), a prominent
leader of the partisan
movement and a famous
Russian poet. Engraving
from a drawing by
A. Orlovsky. 1814. All
of the portraits are in the
State Historical Museum.



WITH EQUAL CHANCES

By Vladimir Smyk
Photographs by Alexander Makarov



Bolius Poskus, director of the Institute of Agricultural Economics of Lithuania in Vilnius, created a rating system that encourages the development of farms in the republic. Below: The main building of the institute. Below left: The institute's computer center.



Land is not a product of human labor and, therefore, has no economic value. Consequently, it must not be something that is bought and sold. After the October Revolution of 1917 Soviet Russia, by nationalizing the land, immediately put into practice this thesis of socialist political economy. That is why collective and state farms in the USSR pay no rent. The absence of rent and rent-determined relations has greatly benefited agricultural producers.

But this does not mean that all of the problems associated with the Soviet economy's farming sector have been solved. For example, land varies in soil fertility and in the abundance of crops it can produce. Farmers find it easier to raise cows in meadow pastures than on arid plateaus. In other words, some farms have natural advantages over others, and it is clear that some farms must battle less favorable conditions and work harder to equal the output and profit of the more fortunate ones.

Prices, however, ignore this difference. Should the unequal objective conditions really lead to an inequality in economic and social terms? The inequality seems to have been programmed by nature itself here. How, then, is the constitutional principle of socialism—to each according to his work—to be realized?

Fair Play

Twenty years ago Bolius Poskus of Lithuania, then 34 years old, took issue with nature, which is so indifferent to justice. He decided to look for ways to equalize the economic resources of "privileged" and "disadvantaged" farms. He first tackled the problem in a research paper that earned him a Candidate of Science degree in economics. In 1966 Bolius became the director of the Institute of Agricultural Economics of Lithuania in Vilnius, capital of the republic. That was also the year when his idea finally crystallized into a workable proposition.

His proposal essentially was as follows: Since the socialist state maintains that prices are based on socially required labor expenditures, that is, the labor value of goods, and since society cannot do without the labor of farmers working in unfavorable conditions,* it ought to compensate them for the extra effort needed to work their farms. For example, if raising a cow on sandy soil is more difficult than in a river meadow, the state should pay more for the milk of the sandy soil cow than for the milk of the river meadow cow. Hence, purchasing prices must be differentiated for farms to compensate for their unequal conditions.

Under Bolius Poskus' leadership, the staff of the institute worked out a point system for assessing a farm's objective characteristics. First, the land received points for its soil quality, rainfall, number of plowable hectares, configuration and road quality. Second, the machinery and equipment owned by the farm was rated; third, the amount of fodder and fertilizer used; and, finally, the number of farm personnel.

All of the farms in Lithuania were divided into four groups, with roughly up to 200 collective and state farms in each. Those listed in the first group were the ones that received the largest number of points. The number of points in the remaining groups went down successively. Farms with the least favorable factors constituted the fourth group. In this way, the real socially necessary expenditures of each collective and state farm and the group as a whole could be assessed and, consequently, their economic resources equalized.

Bolius Poskus suggested introducing specific purchasing prices for products of each group of farms. (In the Soviet Union, where prices are regulated by the state, this is quite feasible.) Take milk, for example. Group IV farms were to receive 16 per cent more for their milk than Group I farms. The price differentials for beef and pork were even larger—20 and 25 per cent respectively.

The proposal received the approval of the Council of Ministers of Lithuania. As the chairman of one Lithuanian collective farm put it, "The game began to be played according to fair rules."

The 40-Million Case

At first the 1972 meeting of leaders of agricultural enterprises in Lithuania resembled a family's legal fight over a one-million-ruble estate. In fact, two of the interested parties turned out to be relatives.

"You've taken away one million rubles from my collective farmers!" Bolius Poskus was reproached by his younger brother Petras Poskus, the chairman of one of the most productive farms in the northern part of Lithuania. "Why should we give it away? Simply because our ancestors found good land and settled it? The labor of many generations has made these lands even more fertile. And now you are wiping that all out. Give us back our million and add an additional 40 million that the republic's best farms have lost because of your point system."

Naturally, the leaders of the farms that had benefited from the new purchasing-price differentials strongly supported Bolius' system.

"You've received the funds so you can increase your crop yields, milk output and cattle weight," Petras did not give in, "but what are we supposed to do?"

"To work more efficiently," countered Bolius. "Experts have computed the potential of each farm in the republic. Your farm, for example, has many untapped resources in livestock breeding. You can also produce much more fodder. But you'll have to be more enterprising and resourceful to increase profits."

"Statistics will be the ultimate judge," Bolius said in conclusion.

Indeed, the system proposed by the institute did not deprive the more profitable farms of advantages. They still had their fertile lands, and that was the most important thing. Besides, the stronger farms had greater resources for increasing crop yields and livestock output. In fact, the new system had stimulated the changeover of all the farms to intensive development.

Statistics

The last word in economics belongs to figures. What do they show? The growth of farm production in Lithuania has accelerated since the republic's shift to the system of using purchasing-price differentials. Surpassing all the other republics in the country in per capita milk and meat production, Lithuania is now among the world's leaders: 850 kilograms of milk a year (it shares the first and second place in the world with the Netherlands) and 140 kilograms of meat (it ranks third in the world). The Group IV farms began to develop significantly faster than previously. In the 12 years since purchasing-price differentials were introduced, production has gone up by 300 per cent.

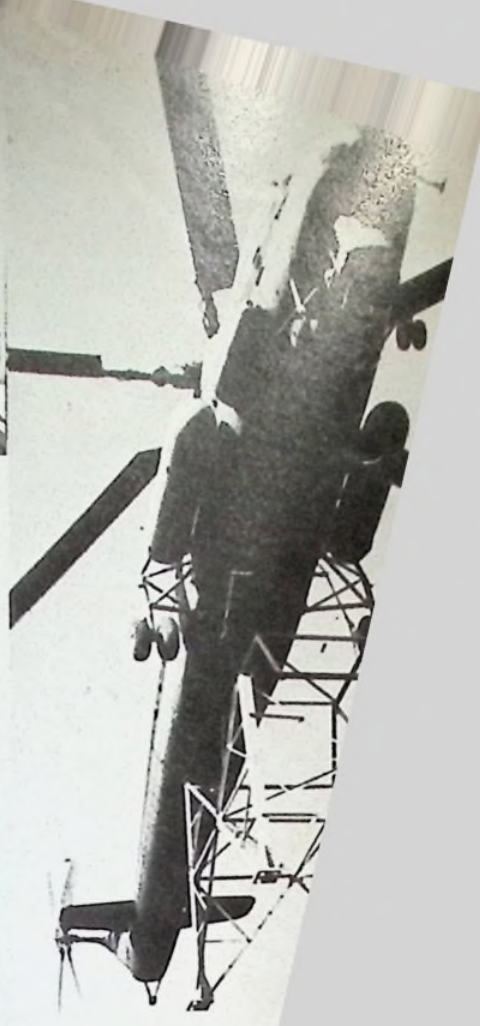
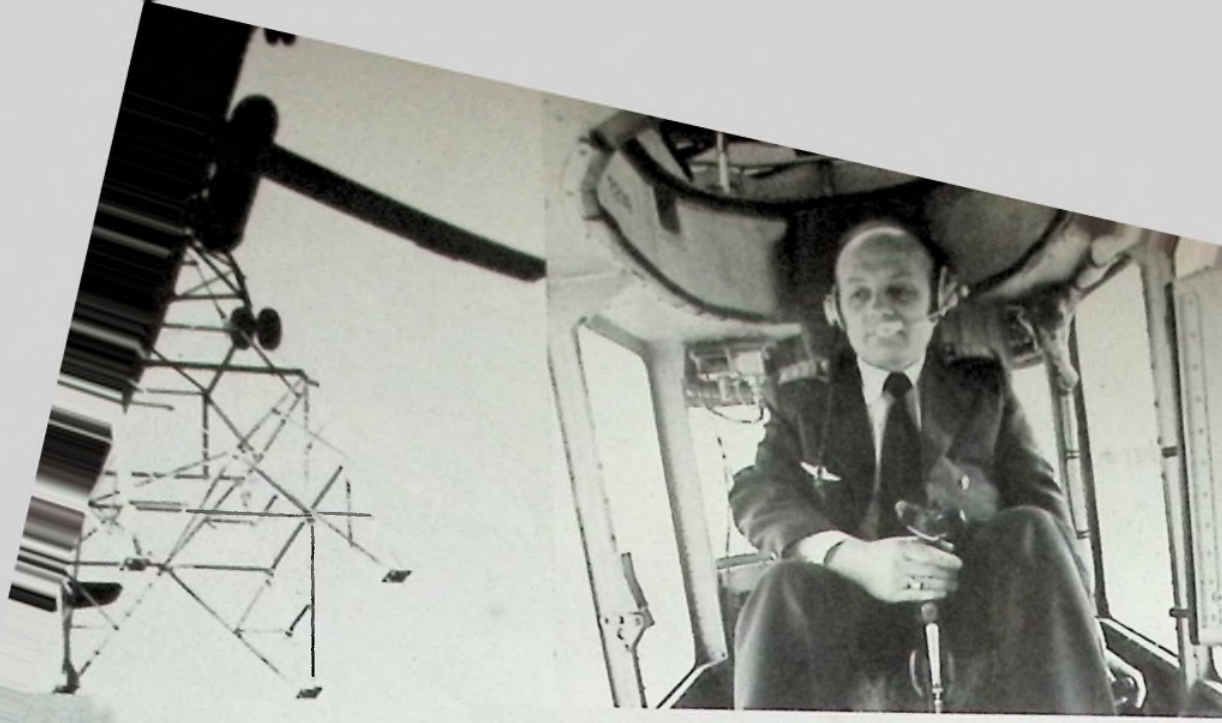
The minions of fortune have also kept up rates of production growth (by 100 per cent in the same period). They have begun to show more initiative and enterprise and to make wider use of the latest scientific achievements. Incidentally, they are being vigorously helped by the institute that Bolius Poskus directs. Its computer center calculates the optimal plan of economic activity and the best methods to organize work at the collective and state farms. In this way, the institute is helping to considerably raise profits even at farms that incurred losses because of the divergent purchasing prices (the yearly savings from the adoption of the institute's recommendations are nine million rubles). The collective farm led by Petras Poskus has also received scientific guidance from the institute. Results have been so good that Petras has turned from an ardent opponent into an avid supporter of his brother's system.

The aim of Bolius Poskus' system is the gradual elimination of the unequal development of Lithuanian farms. He has proved that farmers can correct even nature: For instance, the original appraisal showed that the advanced farms had 250 per cent more points than the ones that were lagging behind. Now a recent estimate shows that the gap has been reduced to 70 per cent. This is the result of measures that were taken to improve soil fertility and to expand and renew fleets of farm machinery.

Good housing, kindergartens, schools, shops, clubs and service facilities are now being built everywhere in the republic, including in areas that were not considered prosperous previously (there were many of these in the southern part of the republic). In the amenities, villages in Lithuania are now vying with cities, and the standard of living in the countryside is perhaps even higher than in urban areas.

The successes of the Baltic republic in equalizing the social development of collective and state farms have attracted much attention. Poskus' system has begun to be used in the Ukraine, Kazakhstan, Kirghizia, Uzbekistan and many regions of the Russian Federation.

*Areas that have sufficient rains and favorable temperatures occupy only one per cent of the territory of the USSR.



Above (from left to right): Several views of the large MI-10K helicopter. Below: Victor Ilkun (center) and Nikolai Sumkovsky (left) maintain radio communication with the crews operating the helicopters. Both men are from the USSR Research Institute for the Application of Aviation in the National Economy. Pyotr Telnov (right) is the senior engineer in charge of the project. The cooperation of scientists at several major institutes, builders and teams of helicopter test pilots has made it possible to string a new transmission line under difficult conditions. Facing page: It takes the MI-10K helicopter only three hours to install one pylon. It would take a land-based construction crew three months to complete the same task.



FLYING BOULDER

of maneuvering
the most difficult
helicopters are
ing their worth in
ude construction.

y Svetlana Omelchenko
s by Yelena Glazycheva





Besides positioning pylons, unrolling coils of wire and mounting insulators, the MI-10K helicopter is called in to perform a myriad of delicate operations. The 500-volt transmission line linking the power system of the Northern Caucasus with the National Power Grid is being laid among rocks and mountain gorges at an altitude of 3,000 meters.

Shepherds who take their flocks of sheep high into the Caucasus Mountains in summer have named one peak near the Nakharski Pass "Gyulkhar" ("Beauty" in English). Adorned with three glistening cascades of waterfalls and mantled with beech and spruce trees, the mountain presents a pleasing picture if viewed from the foothills below or from a helicopter above.

"For us designers the view from above was the most important," Misha Khakhaleishvili, deputy manager of a building trust in Transcaucasia, told me. "In drawing up the plans for a new transmission line, we knew that over half of the entire volume of work would have to be done using helicopters. The shortest route between the massive Inguri Hydroelectric Power Station and the Central Stavropol Thermal Power Plant runs across the Nakharski Pass. The line, which will be over 600 kilometers long, will connect the mountain power station to the National Power Grid. It would take over 10 years to build a highway on the southern slope of the pass, and not all of the needed overland machinery could maneuver through the Nakharski Pass, which lies some 3,000 meters above sea level. The only way to get to the region was by air, and helicopter pilots made up our initial corps of workers."

Many pylons had to be redesigned for helicopter-aided assembly, but that was not the only work awaiting the pilots. They also had to unroll coils of wire, mount insulators and do other delicate operations. Before the actual construction began, the pilots had to perform a series of tests to corroborate the truth of the calculations.

"The most difficult thing we face in the mountains is the capricious weather," pilot Gennadi Maltsev says. "For example, an MI-8 places a 300-kilogram load on a foundation and leaves to pick up another load. The Sun is shining. All of a sudden a dense fog rises from below and makes flying impossible. Now you have to sit and wait for the wind to disperse the fog, but who knows for how long? Here in the gorge the weather changes every five minutes."

Gennadi Maltsev, an ace flier who has been awarded a USSR State Prize, comes from the northern part of the country, where he was accustomed to the worst possible weather. Here in the South things proved to be no easier than in the taiga.

"How's the weather, Beauty?" is the most frequent question heard over the radio in the project's control room.

Communication with the helicopters is maintained by Nikolai Sumkovsky, senior researcher at the USSR Research Institute for the Application of Aviation in the National Economy. He warns that "the sky is again overcast and the fog has risen," and then adds something concerning Beauty's temper.

A shepherd, Valiko Subeliani, steps out of the fog and invites us in for a snack. His summer cabin is nearby, close to "the best pastures in the world," he says. His main home is in the valley where a large sheep farm is situated.

While we are being treated to milk and fresh homemade cheese, the fog lifts. A few minutes later we hear a helicopter approaching. The MI-8 helicopter is laying the foundation for the pylons. Air-to-ground teamwork is perfect: It requires great precision, just like the work of a surgeon. Crew commander Anatoli Shapovalov, leading test pilot Anatoli Nosal and flight engineer Nikolai Sorokaletov are masters in high-mountain building operations.

Misha Khakhaleishvili looks through binoculars at the mountaintop and its waterfalls. "Wires will have to be stretched from Beauty's top," he continues his story. "It just cannot be done in the usual way because the expensive wires would be torn apart by the sharp edges of the rocks. The helicopters will unroll the wires in the air."

When the foundation is ready, the MI-10K helicopter, or the "flying crane" as it is nicknamed, arrives to relieve the MI-8. It positions a pylon on the foundation with ease, placing it down as if it were a Christmas tree decoration. Then it opens its clutches and soars upward. The whirlybird circles over the site while the assemblers fix the pylon in place. The pylon must be able to withstand wind and avalanches. It is designed to last a century.

The flying crane is now out of sight. The last pylon has been positioned. The MI-8 takes off from the site to the mountaineers' ancient parting words called out by Valiko Subeliani: "May you live a hundred years and come to see us a hundred times." ■

SOVIET AND AMERICANS GET TOGETHER

By Nikolai Fedorenko

Corresponding Member of the USSR Academy of Sciences

We view it as our duty and responsibility to do everything we can to safeguard peace and achieve mutual understanding in the world, to prevent conflicts fraught with the danger of nuclear war."

These are the concluding words of the joint statement made by the sixth conference of Soviet and American writers, which was held last March in California. The theme of the meeting was "Understanding Through Literature," understanding for the sake of preserving human values, everything we call culture.

It has long been clear that a nuclear war means the destruction of humankind. Every nation is confronted with the urgent task of saving the world from the insanity of the arms race. An important role in carrying this out belongs to writers, whose authoritative word must warn humankind of the dangers that are appearing on the road to its development. That is the duty of writers, the sacred mission of literature—to forewarn of the menace that international political crises engender, to point out the monstrous consequences a world conflict would produce.

However, the participants in the California round table did not overestimate their role. They clearly realized that the danger hanging over the future of humanity cannot possibly be stopped by public declarations or by the force of words alone, be they of writers, scientists or public figures. Only by concrete measures directed at preserving peace and international security can the threat be averted. Peace cannot be maintained if one state suppresses other nations or attempts to forcibly impose its ideas and ways of life on them. Because our world is in danger today, it would be hard to find one sensible individual who is not troubled by the fate awaiting all people.

"As a writer," remarked American playwright Robert Lee, "I don't believe that the pen is mightier than the sword. But I do believe that the pen *is* a sword." Many other participants in the discussion stressed that a writer's pen can be an instrument of peace.

The meetings of Soviet and American writers began in 1977 in Moscow. They were held alternately in the United States and the Soviet Union: New York, Batumi, Los Angeles, Kiev and, finally, this latest one in Malibu, California. The round tables have earned a definite place for themselves in international writers' contacts and have become a significant channel for learning about the life of each other's peoples and for cooperation.

Many prominent American writers have taken part in these conferences: Robert Lowell, Edward Albee, Joyce Carol Oates, William Styron, William J. Smith, Kurt Vonnegut, Jr., Irving Stone, John Updike, Arthur Miller, Ray Bradbury, E. L. Doctorow, Susan Sontag, Harrison Salisbury, Gwendolyn Brooks, Erica Jong, Arthur Schlesinger, Vera Dunham, Studs Terkel, Norman Cousins (cochairman of the conference), and others.

Among the Soviet participants have been Grigol Abashidze, Chinghiz Aitmatov, Mikhail Alexeyev, Grigori Baklanov, Yuri Bondarev, Genrikh Borovik, Andrei Voznesensky, Oles Gonchar, Daniil Granin, Mikhail Dudin, Nodar Dumbadze, Yevgeni Yevtushenko, Pavlo Zagrebely, Sergei Zalygin, Anatoli Ivanov, Valentin Kataev, Vitali Korotich, David Kugultinov, Felix Kuznetsov, Askhat Mirzagitov, Robert Rozhdestvensky, Mikolas Sluskis, Vladimír Soloukhin, Ivan Stadnyuk, Yuri Trifonov, Nikolai Fedorenko (cochairman of the conference), as well as scholars on American literature Jason Zasursky, Isabella Zorina, Alexander Mulyarchik and Tankred Golenpolsky.

The latest round table, held at Pepperdine University, was one of the most productive. The university administrators did everything they could to provide

D AMERICAN WRITERS HER IN CALIFORNIA

the necessary conditions for successful work. The atmosphere was warm and businesslike.

The participants noted the important fact that Soviet and American writers managed to get together despite the serious deterioration of relations between the two countries. Tense relations have an extremely detrimental effect on the international climate as a whole.

And so, the dialogue was held in these difficult conditions. Perhaps the conference is even more significant because of that. As the round-table participants noted, these get-togethers help improve mutual understanding; they are necessary if only, for instance, to let Americans know what troubles and what interests Soviet intellectuals today, what our people are thinking about and, consequently, what concerns our state and our government—since there is complete unanimity in the desires of our people and our government on problems of peace and preventing a nuclear war. No one in our country—from the highest leaders to the people in the street—regards the possibility of a nuclear war as conceivable. And of course, for our part, we explored the problems and joys of modern-day America.

The theme suggested for discussion—"Understanding Through Literature"—prompted thoughts about the role of literature, the role of books, in improving mutual understanding among people.

The question of translating and publishing each other's works touched off a heated exchange of opinion. The subject was by no means a new one. It had been discussed at just about every one of these meetings.

This time Susan Sontag took the initiative. She pointed out that there are various reasons why the works of some foreign writers are not translated or published in the Soviet Union. Yet she noted that the books that are being translated were written by authors who are representative of different creative trends and have different political stands.

Ideological content and artistic form are our main criteria for appraising a literary work. Only a blend of these two aspects, and never each one separately, can give you a true picture of a book and help you make the correct choice. We reject outright books that preach war, violence, racial and national strife, pornography, crude sex or those that deal with petty themes. We reject cheap literature, in which an increasing role is being assigned to magic, witchcraft and mysticism. The choice is made not by some mysterious force, but by us, for we are clearly aware of our responsibility to our exacting readers, our contemporaries.

Let me try to give you a general picture of our publishing policy.

Many more books by American writers are published in the Soviet Union than books by modern Soviet authors in the United States. Our American colleagues acknowledged this in the course of our discussions. Norman Cousins and Irving Stone called on their fellow Americans to make every possible attempt to help introduce Soviet books to American readers. Wallace Stegner suggested working out a definite plan of action to get Soviet writers published in the United States.

We can say with no exaggeration that Soviet readers have every opportunity to acquaint themselves with the most important works of foreign authors, Americans in particular.

Many writers of prose and poetry in the United States occupy a permanent place on the bookshelves of Soviet readers. Since 1917 about 4,500 books by over 370 American authors have been published in the Soviet Union. Altogether they have come out in approximately 275 million copies.

Almost every American classic of the nineteenth and twentieth centuries has

been published in the Soviet Union, many of them in complete collections. For instance, the works of Ernest Hemingway have been published 163 times in a total of over 16 million copies in 20 languages of the Soviet people; those of John Steinbeck have been published 43 times in over 3.1 million copies in nine languages; and those of William Faulkner 35 times in 3 million copies, also in nine languages.

Twentieth century writers of classics like F. Scott Fitzgerald, Thomas Wolfe, John Dos Passos and Thornton Wilder enjoy continued popularity in our country.

Alongside them, among the most popular modern American writers published in the Soviet Union are Kurt Vonnegut, Jr., Robert Penn Warren, J. D. Salinger, John Cheever, Irving Stone, Joseph Heller, Joyce Carol Oates, John Gardner, Gore Vidal, Ray Bradbury, John Updike, Irwin Shaw, Arthur Hailey and James Baldwin. J. D. Salinger, for example, was published 17 times in a total of 679,000 copies in five languages; John Updike 7 times in 282,000 copies in five languages; and Ray Bradbury 27 times in over 1.9 million copies in eight languages.

The Soviet public's attention has also been attracted by the narrative fiction of Norman Mailer, Studs Terkel, Truman Capote, Rockwell Kent, John Hersey and Ted Weeker.

The plays of Tennessee Williams, Edward Albee, William Saroyan, Eugene O'Neill, Neil Simon and Thornton Wilder are running with great success on the Soviet stage.

In 1980 a 45-volume series titled *Biblioteka Literaturny S.Sh.A. (Library of Literature of the USA)* started to come off the press (see the March 1984 issue of *SOVIET LIFE*). The volumes that have already appeared include works by Ernest Hemingway, Theodore Dreiser, John Dos Passos, Richard Wright, Waldo Frank, Herman Melville, W. E. B. DuBois, James Baldwin, Robert Penn Warren, Thornton Wilder, Thomas Wolfe, Jack Conroy, Lars Laurence, J. D. Salinger, Kurt Vonnegut, Jr., Henry James, Washington Irving, James Fenimore Cooper and John Cheever, plus a collection titled *Poeziya S.Sh.A. (Poetry of the USA)*.

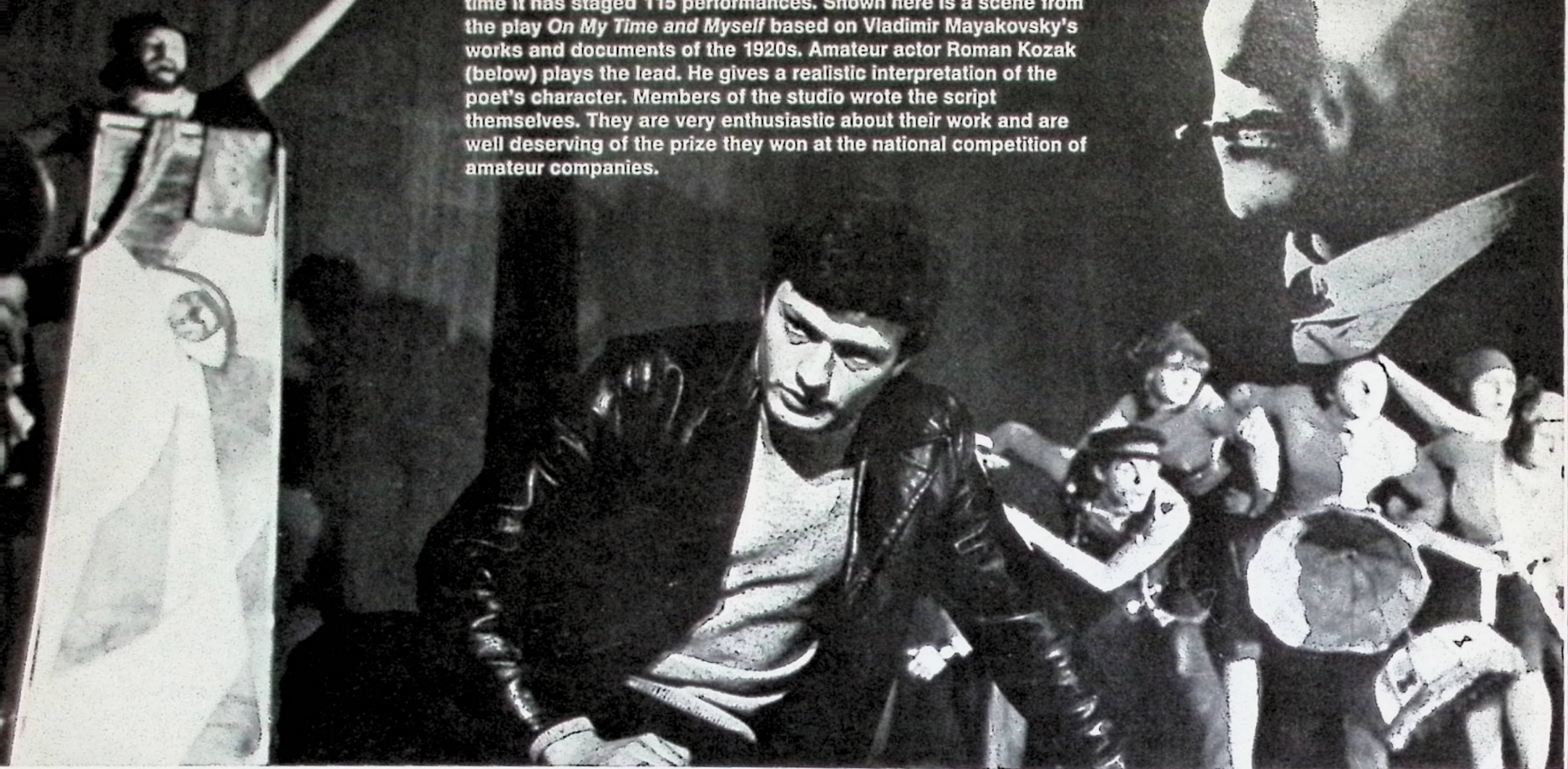
During the discussion the participants, naturally, strove to look beyond the horizon of the present day, to imagine what the future world would be like and what it should be like. To a great extent that depends on the active stand of today's writers, on how they influence the shaping of the individual's inner world, his or her consciousness. Writers must not forget that they have to think today about what the world will be like tomorrow, about the spiritual and moral values of the individual and society. Perhaps that is why the conference participants largely focused their attention specifically on what they could do at the present time, in the context of the potential that every writer possesses. More than anything, the speeches showed that both Soviet and American writers are seriously aware of their role and responsibility to prevent a nuclear war and to preserve international security.

The Soviet Union proposes peace to every state, proposes that all efforts be pooled for the sake of common security, that the most complicated problems be solved in a way acceptable to all sides, first and foremost among them being the problem of curbing the race in both nuclear and conventional weapons.

We are opposed to turning a debate of ideas into a confrontation between states and peoples; we are opposed to making arms and the readiness to use them a yardstick for measuring the potential of a social system. If humankind does not put an end to war, war will put an end to humankind. ■

Theater

THE Chelovek (Man) Amateur Youth Drama Studio was started at the Moscow Compressor Plant eight years ago. It now has 26 members—engineers, workers and students. In this short period of time it has staged 115 performances. Shown here is a scene from the play *On My Time and Myself* based on Vladimir Mayakovsky's works and documents of the 1920s. Amateur actor Roman Kozak (below) plays the lead. He gives a realistic interpretation of the poet's character. Members of the studio wrote the script themselves. They are very enthusiastic about their work and are well deserving of the prize they won at the national competition of amateur companies.



RECORDS

THE WORLD'S LEADING INTERPRETERS OF MUSIC is a series that the record company Melodia has been bringing out for a number of years. It features eminent conductors, musicians and singers, both Soviet and foreign. The two-record album shown at right is devoted to the Russian pianist Konstantin Igumnov (1873-1948). The Igumnov School is based on his masterly performance and teaching traditions. The album includes Igumnov's last concert in the Grand Hall of the Moscow Conservatory on December 3, 1947, where he played Beethoven, Chopin, Tchaikovsky and works by Anatoli Lyadov.



SCULPTOR Nikolai Pushkar lives in the small Byelorussian town of Mosyr. He is known for his sense of humor and ability to see humorous people and situations around him, which he translates into tiny clay figures and scenes. His artwork depicts the same variety and uniqueness as life itself. Based on folk traditions, scenes from everyday life perceived by Pushkar are amusing and elicit many a smile from admiring fans.

sculpture



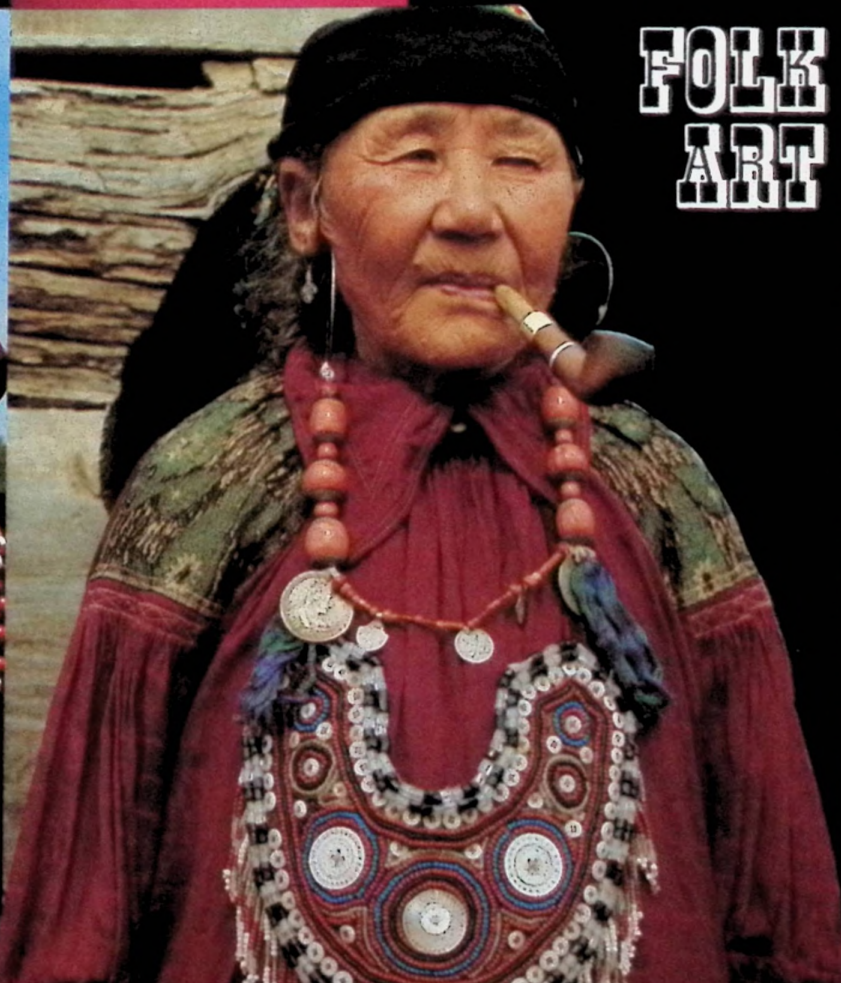
the arts

METAL utensils are a common sight in Azerbaijan households. Silver jugs of different sizes are used to keep water and wine cool for long periods, and copper kazans (pots) are used for cooking pilaf. Many of the articles are works of art, with elaborate patterns and chasing. For example, these ancient Azerbaijan dishes were made by an unknown master.

ACTORS AND ROLES



ANDREI MIRONOV is a versatile actor. When he joined the Moscow Satire Theater company 20 years ago, chief director Valentin Pluchek said: "Mironov will play many different parts." And he was right! Mironov has played in *The Bathhouse* and in *The Bedbug* by Mayakovsky, in *The Marriage of Figaro* by Beaumarchais, in *The Inspector General* by Gogol, in *Wit Works Woe* by Griboyedov and, just recently, in *The Cherry Orchard* by Chekhov. He has also starred in many films and TV programs.



FOLK ART

PICTURED here are examples of the *pogo*—the traditional breastplate worn by women at weddings in Khakassia, an autonomous region in the southeastern part of Siberia. Khakassian embroidery is bright and colorful, and the *pogo*, embroidered with beads, pieces of coral and mother-of-pearl, has immense decorative appeal. It is shaped and embroidered according to a definite pattern, yet its diversity is amazing. No two are alike.

Pogos are worn at every wedding feast—but only by the matchmaker. Unmarried women and those without children are not allowed to wear them. The *pogo* is placed on top of an embroidered vest, which is worn over a gown or a winter coat, depending on the season.

The art of making *pogos* goes back centuries. Mysterious stone figures adorned with *pogos* have been found on the Khakassian steppes. Many human forms can be distinguished in the *pogo*. For instance, chunks of mother-of-pearl or buttons are easily perceived as eyes, mouths and ears. *Pogo* ornaments are formed by densely placed spirals of beads and glittering gold or silver plates. These are always rimmed with small mother-of-pearl buttons and fringed with bugles. A well-designed *pogo* has always been considered an object of great value. It was at one time part of the dowry. According to legend, *pogo* images depict the ancient goddess of fertility and the guardian of children's souls.

TECHNOLOGY IS A TWO-WAY STREET

By Boris Kurakin

General Director of Licensintorg

The age of the scientific and technological revolution has proved how vitally necessary and advantageous it is for every country to participate in the worldwide process of research and development and to take part in exchanging scientific knowledge, know-how, technologies and the "secrets" of

producing and manufacturing goods.

It goes without saying that equality and mutual benefit, trust and mutual respect among trading partners should be the inviolable principle on which such exchanges are based. Without this it would be hard to imagine their stability and long-term success. Naturally, the USSR is interested in their success. At present we maintain business contacts with more than 2,000 foreign companies and organizations. Technologies and equipment inscribed with "Made under a USSR license" have been successfully put into operation throughout the world. Almost 50 countries are using the fruits of Soviet scientific and engineering thought, including the Federal Republic of Germany (FRG), France, Italy, Great Britain, the United States, Sweden and Japan.

At present Licensintorg, the Soviet foreign trade organization, has nearly 1,500 technological innovations in various fields available for sale, including the latest technologies for such industries as machine building, chemicals, iron and steel and ferrous metals, winemaking and food processing. Incidentally, the results of basic research done by our scientists are well known to their counterparts abroad.

The Soviet Union is now producing one-third of the world's high-technology products, that is, it is manufacturing more than any other country. Almost 21,000 patents have been issued for Soviet inventions in use in 63 countries. In the United States the first step toward cooperation with Licensintorg, which was taken by McDermott Inc., has been fol-

lowed by many other American companies. For example, the Aluminum Company of America (ALCOA) has acquired patent rights for the Soviet method of continuous metal pouring in a magnetic field and the license to install the equipment required to apply this technique in its plants. Incidentally, this is the third American company that is using this technique.

Rexnord Inc., the world's largest manufacturer of crushing and grinding machinery, has purchased a license from us for the production of gyratory crushers. Air Products and Chemicals, Inc. has acquired a license to use the design of mass exchange of columns of air separation installations at its chemical plants. Enterprises of the Multi-Arc Vacuum Systems Inc. mastered within a short period of time, with the help of Soviet experts, the techniques for applying wear-resistant coatings to industrial tools (the Bulat method). Also, major companies like Kaiser Aluminum and Chemical Corp., Bristol-Myers Co., General Electric Co., and many others could be listed here. We are firmly convinced that our mutually advantageous exchanges in the field of science and engineering (just as, incidentally, in other spheres) can be implemented on an even larger scale.

Since Licensintorg was set up, we have sold twice as many licenses to the U.S. as that country has sold to us. These include licenses for such processes and devices as high-voltage power transmission lines, the automatic suture gun, the latest welding techniques, aluminum and copper casting in electromagnetic furnaces and underground coal gasification in situ.

Japan is another major buyer of our licenses. Many Soviet inventions have been introduced at Japanese metal plants. France has also purchased a license from us for the production of sparkling champagne using chemicals.

Another one of our innovations is the evaporation

cooling of blast furnaces. This highly effective system, developed in our country, is being used in more than 80 blast furnaces in many other countries: A license for this engineering idea has been acquired by Belgium, Italy, Canada, Japan, the U.S. and Australia, to name a few.

I think that the above-cited facts, if they are made widely known, will considerably reduce the "degree of ignorance" that exists about the Soviet Union's achievements.

I want to emphasize that we are not only selling but also buying many items of advanced machinery and technology on the international market. The Soviet Union, like other countries, does not produce everything that our economy needs. Nor do we strive to. We believe it is more advantageous to avail ourselves of the advantages of the international division of labor. This is also confirmed by the development of our foreign trade ties. We buy, above all, the things our economy needs, items that it is more advisable to purchase from other countries than it is for us to manufacture.

Several hundred large industrial enterprises are built in the USSR annually. In addition, the modernization of existing plants is being carried out on a broad scale. To speed up this modernization, we are importing automatic transfer lines, machine tools and technological equipment of various types. At the same time, we are also buying materials that we produce or can produce ourselves. However, the scale and extent of modernization of Soviet industry is so large that in order to shorten the time it would take to accomplish it and to derive economic advantage, it is more advisable in a number of cases to make use of the numerous offers from socialist and capitalist countries and to buy materials and the latest technologies from them. It is well known that this is also practiced by our trade partners to whom we willingly sell many items that they need. ■

SCHOOL NO. 739

Continued from page 16

honor those Soviet men and women who gave their lives to defeat fascism.

When we finished our tour of the school, we returned to the principal's office. We had much to talk about but very little time left. We exchanged ideas on curriculums, teaching methods, discipline, grading, the teacher's workday, salaries and parent involvement in the schools. Principal Artemeva told us that one of the most significant events taking place across the whole of the Soviet Union was a wide-ranging discussion of the educational reform. [The reform was adopted by the USSR Supreme Soviet at its spring session—Ed.] We were disappointed we had no time to discuss these reforms in any detail. But Principal Artemeva invited us to return for that purpose the next time we were in Moscow.

Educational reform is an urgent issue facing all nations. The times in which we live call for constant reassessing and development of our educational systems. New advances in science and technology have opened extraordinary vistas for improving the quality of people's lives. Correspondingly, human relations and the development of each human being's personality and creativity have become more complex. The schools play a key role in preparing children for the world in which they live. If education does not keep up with advances taking place in society as a whole, then our young people will not be adequately prepared to live rich and useful adult lives.

One of the most important aspects of the new school reforms in the USSR is the section dealing with labor training, or as we in the U.S. call it, the industrial arts.

Work, whether it is with the hands or the head, has a special role to play in the educational development of each child. It helps to develop self-discipline, organizational ability, responsibility, working with others and a feeling of self-worth as a contributing member of society.

Labor training has always been a required part of the Soviet curriculum. It cannot substitute for an academic class, and it is required of all students. From the fourth to eighth grades there are classes in wood, metal and electrical work, sewing, typing, cooking and drafting.

The labor center at School No. 739 emphasizes jobs in the metal industry. In June the center gives the school its allotted number of openings. A list details the various skills: 12 machine operators, 18 computer programmers, 10 draftsmen, 10 electricians, 10 radio technicians, and so on.

The eighth-grade students and their parents are invited to the school to choose the occupation the students will study. The choice is totally up to the student and his or her parents, based on what is offered.

When the students complete their course at the labor center with a passing grade, they receive a document signed by the center and the principal of the school and imprinted with the official school stamp. This gives them the right to apply for a job as a qualified trained worker.

Principal Artemeva explained that industrial arts classes will begin in the fourth grade with the edu-

cational reform. Studies at the labor centers will begin in the seventh. Special up-to-date shops will be built at all schools, and the tools and work assignments will be more complicated. School will coordinate their activities with their sponsoring factories. The students will know what they are doing and for what factory.

This approach to labor training is crucial for several reasons, the principal told me. Modern society has little need for unskilled workers. It requires working people who are highly educated and qualified. It is essential, therefore, that young people be prepared to cope with the extraordinary scientific and technological advances that have taken place in almost all professions. In addition, their work must give them the feeling that they have an active role to play in the achievements of their country. They must see their work as useful and purposeful. That is why it is necessary for the students to know what they are doing and for what factory.

Students will not be paid for work done during classroom time. In grades 4-8 they will have labor training two hours a week. In grades 9-10 it will be six hours a week. In addition, the school year will be extended to June 24 for all students. This month will be used exclusively for labor training, except for tenth graders, who will be taking final exams.

I happened to be in Moscow again this past April, and I decided to take Aljbina Artemeva up on her offer. We met like old friends, and she told me with great pride that the next time a group of teachers visits School No. 739 on September 1, they will be doing so on a day that has now been proclaimed a national holiday: the Day of Knowledge.

TAMING NEURONS

By Evnika Svetlanova

What do your moods depend on? Are you prepared, eager or able, through necessity, to begin working as soon as you arrive at your job? Do you fall asleep quickly and wake up feeling rested? Can you concentrate? These are important questions. Unfortunately, we cannot always predict our reactions, especially in critical situations. We cannot reliably control our emotions or alter our mental state. And the increasing stress of everyday life,

at work and at home, is making ever more rigorous demands on us that require greater endurance and adaptability.

This explains why scientists in the USSR as well as abroad are showing greater interest in the new method of regulating our moods with computers. The method was developed by Leonid Kupriyanovich, a scientist at a research institute of the USSR Academy of Medical Sciences. It has special application to the industrial health of workers and combating occupational diseases.

From the very beginning Kupriyanovich aspired to accomplish a very non-conventional task: to find a way of influencing the human nervous system that would rely on using the natural properties and resources of the body itself.

For many years Kupriyanovich has been studying the characteristics of the interaction of organs and systems of the human body. Medical science calls this homeostasis, that is, the body's ability to withstand the effects of the environment and to promptly adapt itself to them. Through this research Kupriyanovich determined the mechanisms that control the nervous system. His conclusions proved unexpected: The homeostasis of living creatures, including humans, is guided by biorhythms.

This conclusion provided the impetus for Kupriyanovich's search for ways to "communicate" with these factors, and he found them: through color and sound. Their single-wave property unites them with biorhythms. Then the medical researcher turned engineer and designed a number of apparatus, each one more sophisticated than the other. Kupriyanovich's latest and most

advanced model is based on a computer. It was demonstrated in the offices of Licensintorg, the Soviet foreign trade organization, to American businessmen Michael Rae, president of Argus Company, and Dr. John B. Hughes, a representative of Kaiser Research Inc. I attended the demonstration, too.

At first, glowing lines appeared on the console's screen. One of the programs offered, for instance, would make you completely relaxed, another would allow you to rest for only a few minutes and still another would put you quickly into the best mood for working.

"Have you made your choices?" Kupriyanovich asked. "Now you will see a wide range of colors, and you will hear sounds of different tonality. Choose the one that is most pleasing to you."

After the answers were entered on the keyboard of the computer, the exact gamut of colors and sounds needed for the desired results appeared on the screen.

The businessmen from the U.S. showed an interest in the details of the design of the apparatus and asked the developer many questions. Kupriyanovich explained that in the process of his studies, he had learned how to determine the individual properties of the human nervous system. For instance, he can quickly calculate a person's susceptibility to stress or ability to switch from one emotional state to another. This data provides the groundwork for the computer programs.

"Let's do another check," Kupriyanovich suggested. And again the guests chose the colors and sounds that they felt produced a happy mood, and their choices were again entered on the keyboard. The computer again obediently entered into contact with the customer. A rainbow of colors appeared on the screen, and sounds resembling the swishing of an ocean wave were heard.

I asked why the Americans were so interested in Kupriyanovich's device and his new method. Michael Rae answered me in this way: "Today the Soviet Union has a number of unique devices used for practical purposes. I am sure that this equipment will find a market in the United States. So far we have no such devices."



Students in the Design Department at the Kharkov Institute of Industrial Arts prepare for a project critique. Facing page, top: More than 100 movies have been produced by the film studios of Kharkov Polytechnic Institute (KPI). Fifteen of them have won prizes at countrywide and international festivals. Bottom: Works by Vivaldi, Bach, Gershwin and old Russian composers are included in the repertoire of the chorus at KPI.



KHARKOV STUDENTS

By Victor Karasin
Photographs by Vladimir Fedorenko



The entrance to the Student Palace of Culture at Kharkov Polytechnic Institute.



OUTSIDE ACTIVITIES FILL THEIR LEISURE TIME

Involving Themselves in Community Life

Day and night, trains pass through Kharkov on their way south to the Donetsk Region coal mines, the Black Sea resorts and the Kuban grain-producing farms, or north to the industries of the Russian Federation. Kharkov is the railroad hub of the southern part of the USSR. That explains why the city was the site of fierce and bloody battles during World War II. By 1943 Kharkov had been reduced to ruins, but even then a new city was beginning to sprout.

Kharkov, founded in the mid-seventeenth century, is relatively young by Slavic standards. In the early

nineteenth century it experienced an industrial upsurge, which overshadowed its subsequent specialization. At that time it boasted a population of 12,000, whereas now the Kharkov Polytechnic Institute alone has that many students. Kharkov is actually an old university town, ranking third in the USSR after Moscow and Leningrad in terms of students: 130,000 students out of a total of 1,500,000 people. It is only natural, therefore, that the large student community here should tangibly influence many aspects of city life, notably its creative activities. Of special interest in this regard is what's happening at two of the city's educational institutes.

One is the Kharkov Polytechnic Institute (KPI), which will be 100 years old in 1985. Graduates from here are highly respected in industry and science. Another is the Kharkov Institute of Industrial and Applied Arts, which has already celebrated its 100th birthday. This institute combines traditional courses in the arts with modern-day studies in engineering, with the hope of channeling people with artistic talent into the area of technology. ▶

"Our students can reveal their abilities in any genre of art," says Yevgeni Yegorov, Honored Master of Art of the Ukraine and the director of the Kharkov Institute of Industrial and Applied Arts. Below: Members of the dance company Ukraine at a rehearsal.



An Amateur, Not a Dilettante

At the initiative of the students, a department of social professions was started at KPI a few years ago, and it was not long before similar departments became popular at many institutes around the country.

"The idea to set up the department came from the students themselves," said Alexander Tkachenko, 26, the young Ukrainian who heads the department. "We offer students wanting to try their mettle in social professions, like lecturing or acting, the opportunity to do just that. In addition, we pro-

vide the required courses in these fields. In short, we take the taint of dilettantism out of amateur activities."

A course of studies in 12 professions is offered free of charge. Any student can take them in his or her spare time, but only the ones who have studied in the department for three years graduate from the institute with two diplomas. Last year 654 students graduated with two diplomas.

What does the Department of Social Professions (DSP) offer graduates of an industrial institute?

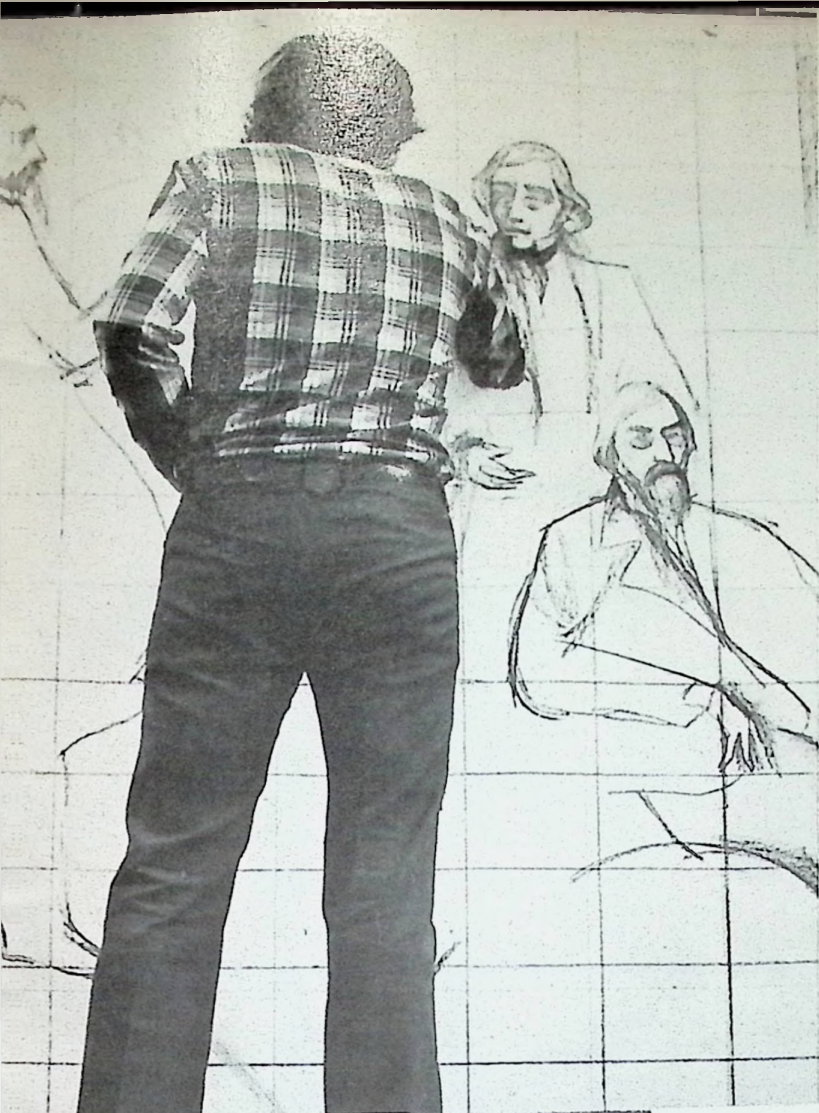
Vitali Bondarev, 24, who plays almost all of the main roles at the Polytechnic Amateur Theater, says: "Of course, the diploma won't put me on an equal footing with a graduate of a drama school. After all, we—I mean, those who graduate with diplomas as actors, stage directors, singers, and so on—have different qualifications. But we can head amateur arts companies at enterprises or in cities where we will work after graduating from the institute. Many of my friends who took the lecturing

course are now giving lectures, and getting paid for them, too."

KPI's graduates have no trouble finding jobs, but they have other problems arising from the fact that in many small towns or in settlements near new construction projects, where engineers often have to work, the cultural life is frequently limited and there are no professional theaters. In this case, a young engineer with a DSP diploma is a valuable asset to the enterprise and, for that matter, the community as well.

Chuguyev, a small town 100-odd kilometers away from Kharkov, boasts a drama studio, which was organized by 30-year-old Vladimir Mikheyev, an engineer at the fuel-burning equipment plant. He is a graduate of the Kharkov Polytechnic Institute, where he also acted in the theater. Now many of the plant's workers and engineers have become actors at the studio and are playing in packed houses.

Vladimir says, "The second diploma wasn't the main thing I got when I left the institute and its



When completed, this huge panel will hang in the assembly hall of a local high school. Below: Future interior decorator Svetlana Kondratenko brushes up on her drawing skills.



theater. I could manage without the diploma, but I can't live without the theater. Being involved in the arts for three years as an actor and stage director at the Polytechnic Theater has left an imprint on me that I'll never forget."

The Department of Social Professions has also given new impetus to the creative activities that have been encouraged at the institute for the past 30 years. The institute's center of amateur arts, which involves almost 1,700 persons, is the Student Palace of Culture. In terms of dimensions and floor space it is in the same league as many academic buildings, but, unlike these, it is adjacent to the dormitories. Together with students, professional actors, stage directors and artists take part in directing the events held here. The Student Palace is fully funded by the institute, which supplies, for example, the 60-member dance company, Ukraine, with new costumes, which are custom-made by a special dressmaking factory; the KPI Film Studio with equipment; and the amateur theater with stage settings.

Ethics and Esthetics for Engineers

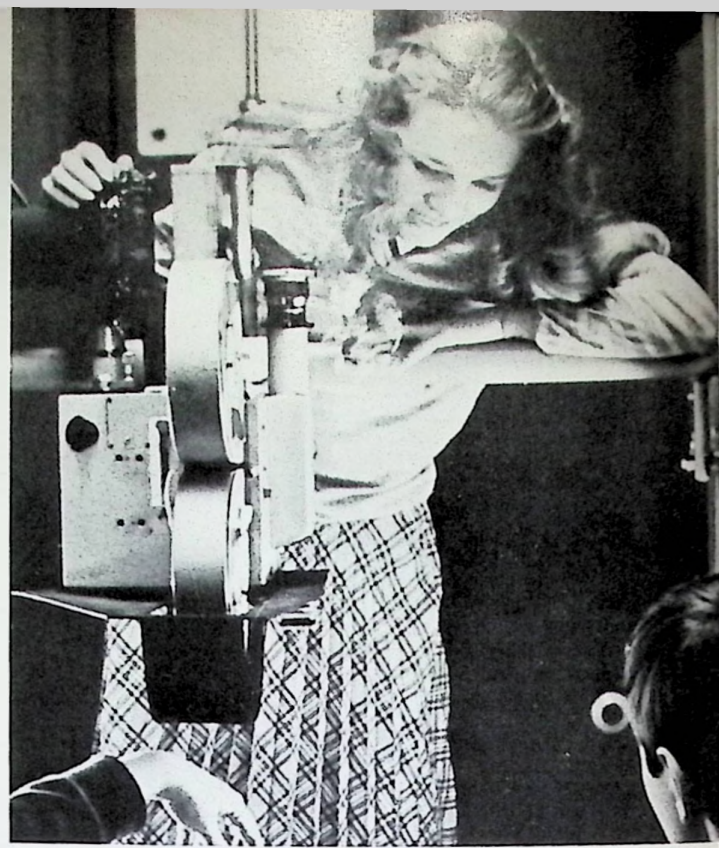
Kharkov Polytechnic also has a Department of Ethics and Esthetics, with a sociological laboratory, which, again, was set up mainly to accommodate students wanting in-depth courses in engineering ethics. Following a year-long experiment, classes in ethics and esthetics were introduced in all departments.

At present the staff of the Department of Ethics and Esthetics numbers 20 and includes sociologists, art critics, philosophers, a historian, an expert on the theater and an actress. Not long ago Valen-

tina Sukhareva, Merited Actress of the Ukraine, was a member of the company at the Kharkov Theater. After retiring on pension, Sukhareva took up producing shows at the Polytechnic Theater and giving lectures in esthetics at the institute. Eventually she assumed a teaching position.

"The time of narrowly specialized professionals," she said, "is receding into the past. It is now possible to provide engineers with a broad education rather than just a specialty in some field. Lately a large number of people with technical training have been entering the sphere of culture and the arts. Theaters, film studios and publishing houses now boast stage directors, producers, scriptwriters, actors and writers who are graduates of technical institutes. Higher educational institutions should and do take this fact into account."

Twenty years ago, to supplement the traditional form and classical repertoire of the Polytechnic Theater, the Student Variety Theater was started. Now it plays to audiences in the thousands. Symbolism, ▶



"Everyone, including future engineers, loves cartoons," says student Nadezhda Spiridonova.

Left: At a dress rehearsal of the KPI chorus.

Right: "After every performance I always feel as though I have lived another life," says Natasha Dominskaya.

"The illusion is wonderful." Above right: Student Anna Onishchenko heads a recital studio at the Student Palace of Culture. Far right: Alexei Litvinov (foreground, left), an international prize-winning dancer, is the leader of a ballroom dance group.



the grotesque and satire, in conjunction with themes of importance to young people as well as to the general public, distinguish its performances.

Alexander Ivanov, 25, is a KPI graduate student and the director of the Student Variety Theater. "We do everything ourselves, from writing scripts to producing shows," he says. "Our goal is to minimize scenery and maximize expressiveness, while we continuously search for new forms of expression. This is what the public needs; although we are sometimes misunderstood*by fans of the classical theater."

Student Valeri Uspenski, 22, adds, "Stanislavsky was able to create his school of theatrical art because he was an engineer. He was trained to think in terms of systems."

Fourth year student Dmitri Vasiliev says: "Since childhood I've wanted to be a comedian. Here I've had the chance to appear before audiences and to try my worth. I think it has given me a better under-

standing of myself and the opportunity to discover if I have chosen the right career. After all, the creative education we are receiving at the Student Palace might prove to be a bridge to the professional arts. Some graduates of our institute have gone on to become popular actors, film producers, stage directors, writers and playwrights, rather than engineers."

In regard to the engineering skills of the graduates with two diplomas, sociologists in the department provide the following statistics: The proportion of students defending their thesis designs with distinction for the institute as a whole is 34 per cent, whereas the figure among the DSP graduates is 82 per cent. Sociologists have done followup studies on many former students and claim that the young engineers with two diplomas are twice as successful in adapting to the industrial environment. Managers of enterprises and design bureaus note that the graduates are flexible and broad-minded and are always coming up with original ideas.

Imagination and Calculation

The Kharkov Institute of Industrial and Applied Arts trains specialists in graphic arts, interior decorating and design, industrial design and monumental art. Six hundred students study under 100 teachers, which is one reason for the high professional skill of its graduates. Like everywhere else in the USSR, the education here is free, and most students receive stipends from the state.

Yevgeni Ragulin, head of the Industrial Design Department, says: "The rapid progress in science and technology growing consumer demand make us



constantly look to the future. Otherwise the designers we train wouldn't be of any use in industry. We don't restrict the creative imagination of our students. We encourage them to experiment with form. They can design anything from children's toys to aircraft. Therefore, it is no accident that our graduates are so highly regarded by the biggest enterprises in the country."

Students in the department fall into two categories: In one the students are jokingly dubbed "time-servers," in the other, "fantasizers." The time-servers study consumer demand and the real potential of any particular industry. They come up with new designs for bicycles, lawn mowers, motorcycles, beet harvesters, and so on. The fantasizers, by contrast, do not concern themselves with actual industrial production. They create not only improvements in common articles, but often new items themselves.

Yet, the most tangible success goes to those students who keep to the Golden Mean rather than to

those at either extreme. As a rule, the thesis designs of the students are patented. For example, 50 students received patents over the last three years.

For many years the institute has been signing contracts with industries that guarantee the production of goods designed by students. Such contracts are profitable both for the institute and for the students.

Graduates of the Interior Decorating and Design Department are always in high demand, and officials in many municipalities show an interest in their work long before they receive their diploma. The city's Trade Administration regularly applies to the institute with orders for decorating local shops and cafés. The students also work on the interiors of apartment complexes, high schools, clubs, and so on.

"Such cooperation is profitable for everyone involved," says Victoria Bondarenko, who heads the department. "The students get good practical train-

ing even before graduating, and they learn to adjust their designs to the funds that are available. Any profits gained from the orders go to both the students and the institute. This is also very important because we are constantly in need of money to buy new equipment and materials and to pay for the rent of our workshops."

Sometimes students fill orders free of charge, for example, when a customer cannot afford to pay for interior decorating. Money is not the most important thing for a future graduate: The students consider the good words spoken by satisfied customers the highest compliment and the best advertisement they could receive.

Teachers and students at the institute agree that last year was their most successful. In an open competition for the decorating of two Metro stations of a new underground line, famous professionals gave way to the students, whose designs won two first prizes, two second and one third, that is, five out of the six possible awards. ■

WORKERS' RIGHTS IN PRODUCTION

Vladimir Maslov, Candidate of Science (Economics), is an expert in worker participation in management and in introducing innovations in production. Here he is interviewed by SOVIET LIFE correspondent Evgeni Strakhov.

Q: What is the history of working people participating in the management of production in the Soviet Union?

A: Forms of workers' control over the activities of industrial enterprises and banks arose, for the first time in the world, in Russia following the February 1917 bourgeois democratic revolution.

Workers' control assumed an all-embracing form in Russia after the October 1917 Revolution. A decree was adopted on November 14, 1917, by the All-Russia Central Executive Committee, one of the highest legislative and administrative bodies of the new republic, on the introduction of workers' control in all enterprises throughout Soviet Russia.

Q: What forms does this participation take in the country today?

A: Diverse forms of it exist at present. One example is the plant manufacturing Lada cars, which was built in the city of Togliatti, located along the middle reaches of the Volga River, with the technical assistance of Italy's Fiat company. The Italian firm supplied the equipment, assembled it, put the assembly line into operation and regulated its speed, which later turned out to be too high for the workers. Hence, it was unacceptable.

This was why the trade union at the Volzhsky Auto Plant in Togliatti requested that the Sociological and Ergonomics Laboratory conduct a special study to determine if the set speed of the assembly line was harmful for the workers. The experts concluded that it was.

On the basis of that conclusion the trade union requested that management reduce the speed, and it was lowered by 13 per cent.

Incidentally, the trade union of that plant was well aware of the fact that a reduction in the speed of the line would also reduce productivity. Naturally, trade unions in the Soviet Union are concerned about raising productivity, but not at the expense of the workers' health.

Q: Obviously, in order to protect the interests of workers and at the same time to show concern for a rise in productivity, wouldn't

trade unions need broad rights?

A: Yes, they would, and the trade unions in the USSR, which represent 99 per cent of all of our workers, have them.

For instance, both Soviet legislation and Soviet experience show that the trade unions have the right to suspend any order made by a manager that concerns working conditions, wages and social insurance. In many cases, including orders issued by a manager, decisions are considered legally void and invalid if they have not been approved by the trade union committee. This includes cases where a worker is dismissed. Only with the consent of the trade union committee—there are committees at every enterprise in the USSR—are pay rates fixed for a particular job. Also, only with the consent of the trade union committee are skill categories established for workers.

Q: But what happens if differences arise between management and the trade union?

A: Every enterprise has a standing commission on labor disputes, on which the trade union and management are represented on a parity basis. If a worker wants to challenge a management decision on any given matter, he or she applies to the commission. The trade union committee will then review management's decision and adopt a resolution. In cases where management is categorically opposed, the trade union committee will issue a document to the worker, which is as binding as law.

In 1969, by decision of the Soviet Government, trade unions in the country were provided with the exclusive right to deal independently with all problems concerning social insurance, excluding pensions. This exclusion was necessary because every worker in the USSR receives a pension from the state, not from the trade union. Workers may apply to their trade union committee at their workplace for accommodations at a health center, rest home or tourist center at a discount or even free of charge. The management does not have the right to interfere in these matters.

In some cases, a joint decision

of the trade union and management is obligatory; in other cases, decision making is the responsibility of the trade unions alone.

It is constantly stressed at party congresses and in the resolutions of plenary meetings of the Central Committee of the Communist Party of the Soviet Union, in particular at its June 1983 Plenary Meeting, that it is necessary for the trade unions to more effectively use the rights granted them.

With the passage of time new forms of the participation of the working people in the management of production come into being. One of these forms, the team council, was initiated 15 years ago at the Kaluga Turbine Plant, located 200 kilometers southwest of Moscow. Team councils, in addition to dealing with other matters, determine which member of a team will do what job and, within the pay scale, how much money the worker will receive. Team leaders are elected by the workers themselves.

Q: But is management right in turning over some of its direct duties to the councils?

A: The search for new forms of teamwork was undertaken not on the initiative of management, but on the initiative of workers. Workers elect their team councils, and there is a council of team leaders at the enterprise. The chairman of the council of team leaders is virtually a representative of the workers who has the rights of a manager. For instance, in an interview given to journalists, Victor Chernov, the chairman of the Council of Team Leaders at the Kaluga Turbine Plant, pointed out that the manager of the plant had not made a decision concerning workers' interests without consulting him.

Q: Is anything being done to increase the workers' general knowledge of economics?

A: During the past 10 years or so general courses in economics have been introduced at all enterprises in the Soviet Union. Classes are conducted by engineers, economists and lecturers from higher educational institutions. The students are the workers.

I recently attended one general economics class in Novosibirsk at the Siberian Farm Machinery Plant. Following an introductory talk on theory, the workers discussed ways of reducing the cost of production in their shop. During the discussion they brought up what organizational measures were required, which machine tools needed replacement and how many new workers were required for the job. All of this was later submitted to the trade union committee for discussion, after which it was included in the new collective agreement as a demand on management.

Thus, the courses in economics are not a study of theory for theory's sake. The knowledge of theory provides the workers with the opportunity to effectively participate in the management of production.

Q: Participating in management is directly linked with the streamlining of production. The latter, however, is in turn closely tied to jobs themselves. Isn't that true?

A: This certainly is a point that must be considered. With production innovations, fewer people can produce a given volume, for example, the volume of articles produced by 100 people can be handled by 75. Today, however, there is still a shortage of workers in the Soviet Union. This shortage exists in practically all large cities. Thus, people have no problems finding jobs. Nevertheless, if some workers are released as a result of innovations, the trade union committee assumes the responsibility of placing them in new jobs. If necessary, the workers will be retrained during working hours and at the expense of the enterprise.

Q: Thus, the problem of unemployment does not exist in the USSR. But won't the policy that calls for the rapid introduction of new machinery and technology adopted in the country lead to a larger number of workers than are needed in Soviet production?

A: It stands to reason that the sphere of production is gradually becoming saturated with workers, and it follows that further automation will lead to a definite number

of people being released. These workers will not be able to find jobs in this line of work. We are well aware of this. That is why we are now estimating the number of workers who can be directed into the service industries.

Q: Let's return to the question of the management of production. Has the Law on Work Collectives, which was adopted last year, introduced any new elements in the participation of workers in management?

A: Absolutely. For instance, in accordance with the new law, only general meetings or workers conferences can make decisions on major problems of management, labor and the organization of production. And these decisions are binding on management. This is a new point.

Q: Would you say that workers in the USSR take part in adopting economic decisions regarding the nature of production?

A: The formation of an enterprise's economic policy starts with the drawing up of production plans. In accordance with the Law on Work Collectives, it is precisely the work collectives that most directly participate in putting into operation the production plans at all levels: from the workplace to the enterprise as a whole. We have already described our team councils, which, in particular, also tackle production problems. This, in the same way, concerns the permanent production conferences at the enterprises. Thus, workers in the Soviet Union already have a say in the adoption of production decisions.

Q: Doesn't the one-man management policy that exists in the socialist economy run counter to the participation of workers in the management of production? Isn't it an obstacle to expanding this participation?

A: Not at all. The point is that the management of production has three independent functions: planning, organization and control.

Planning in the USSR assumes that there be the widest and the most direct participation of the working people.

Organization, that is, the implementation of plans elaborated and approved by the work collective, is the duty of the manager, the individual in charge of the enterprise, who is personally responsible for the best fulfillment of the plan, but who, in the course of fulfilling his or her duties, is supported by the entire collective. It is, however, unreasonable and inexpedient to place this responsibility on the collective itself because this would only lead to confusion and, perhaps, irresponsibility.

Control, the third function of management, would be inconceivable in the USSR without the widest possible participation of the working people.

CHECKMATE

By Mikhail Tahl
International Grandmaster

ON SEPTEMBER 10, millions of chess fans will hail the beginning of an exciting duel between two top-class Soviet grandmasters—World Champion Anatoli Karpov and challenger for the world title Gari Kasparov. I learned about the opening date of the match while I was in Yugoslavia, where an international tournament of grandmasters was being held. The editors of SOVIET LIFE asked me to interview Yugoslav Grandmaster Svetozar Gligoric, who will be the head judge of the September match. Gligoric is a widely respected and popular chess player, very well known in the world of chess. He told me that from the viewpoint of the interest it will arouse and the impact it will have on the world of chess, the forthcoming match could be compared with the one between Alexander Alekhine and José Raúl Capablanca in 1927. Gligoric also said he believes the Karpov-Kasparov match will likely be a very long one, adding, jokingly, that he was planning to take to Moscow not only his fall wardrobe but his winter one as well, and was quite seriously contemplating packing some spring garments, too.

Indisputably the top chess players of our time, Karpov and Kasparov are evenly matched and will obviously hold each other at bay, but the majority of chess fans predict the challenger's victory. This was also the case in 1960 when I played against Mikhail Botvinnik. Chess fans forecast my victory, but for unknown reasons they were silent in 1961 before the return match was played. In 1975 most chess lovers also predicted a victory for the challenger—Anatoli Karpov. Now a new name has appeared on the world chess scene. According to chess experts, however, the world champion will be victorious. This is only natural because the titleholder has the advantage—experience, in my view, being the most important one. By this I don't mean just the experience of playing chess. Karpov is 33 and Kasparov is 21, but I don't really know which of the two grandmasters has the greater chess experience. Even the number of games that each of them has lost annually is the same—three. But Karpov has already played in two tournaments for the world title, both of which were based on the new rules. According to these, the match cannot end in a draw; there must be a winner. Previously, the reigning champion only had to attain an equal score in the match to retain the crown for another term.

Recall the first match that Karpov played in Baguio, the Philippines. He was leading with a score of 4 to 1. It seemed to everyone that the 1978 duel for the world title was nearing its logical completion, but in reality the match was far from over. Lying ahead was the minute that Karpov wrote the word "resign" in the game that brought the score 5 to 5. It is exactly his experience of weathering failures that may ultimately have an adverse affect on Kasparov's performance. In one interview Kasparov himself said that in the forthcoming event purely chess factors may be outweighed by psychological ones.

Karpov also included entering tournaments as part of his training for the September match. Kasparov, preferring to stay at home, chose a different route: He meticulously analyzed and studied everything that he could during his training, which some believe is possible only in a quiet home atmosphere.

It is relevant to say here that Karpov possesses strong intuition. Illustrative of this is the following: On the eve of the final game between the challengers Vasili Smyslov and Kasparov, one Soviet magazine published a poll of readers on the outcome of the match. Anatoli Karpov predicted it would end in an 8½ to 4½ victory for Kasparov, and that is what actually happened.

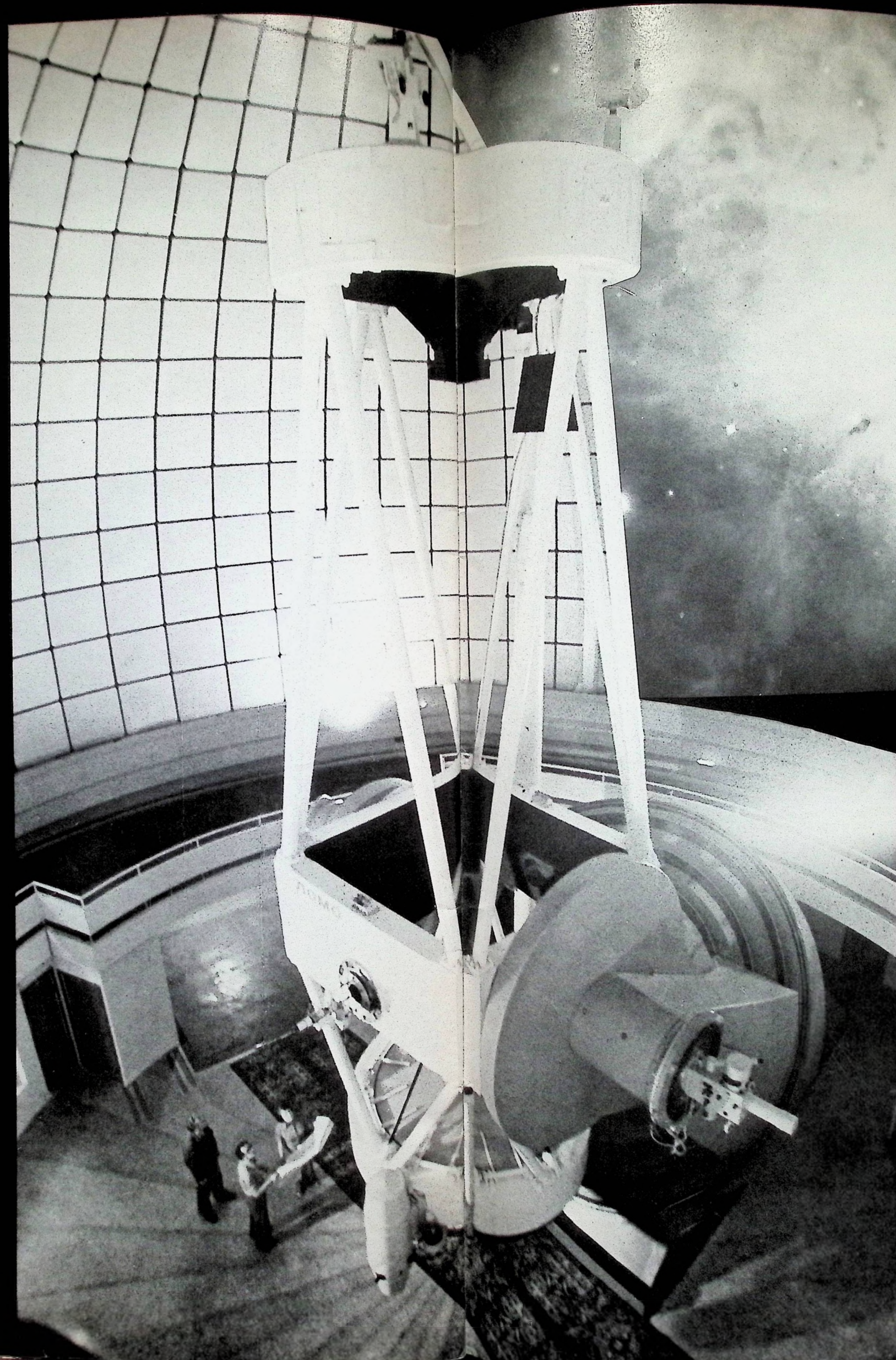
I refuse pointblank to make any forecasts about the outcome of the forthcoming match for the world title. I will say only that the chances are 50-50. It will be a match between players of approximately equal class. Karpov's forte is experience, while Kasparov's is that he has won so many times before that he wants to win even more. What will be will be.

THE UNIVERSE ACCORDING TO VICTOR AMBARTSUMYAN



The famous Byurakan Astrophysical Observatory in Armenia. Right: The mirror of the observatory's telescope has a diameter of 2.6 meters.

"IT NO LONGER SURPRISES ME THAT ALL IDEAS ADVANCED BY VICTOR AMBARTSUMYAN FIND CONFIRMATION," SAYS NOTED DUTCH ASTRONOMER JAN OORT. VICTOR AMBARTSUMYAN IS VICE PRESIDENT OF THE USSR ACADEMY OF SCIENCES, DIRECTOR OF THE BYURAKAN ASTROPHYSICAL OBSERVATORY AND AN HONORARY MEMBER OF ALL THE LEADING SCIENTIFIC ACADEMIES IN THE WORLD. THE "UNORTHODOX" IDEAS HE PUTS FORWARD, WHICH SPARK THE IMAGINATION OF SOME AND THE RESENTMENT OF OTHERS,



Victor Ambartsumyan at a press conference. Top: The massive explosions, shown here, in the Orion nebula are resulting in the birth of new stars.

ULTIMATELY MAKE ASTRONOMERS TAKE ANOTHER LOOK AT PREVIOUSLY HELD VIEWS ON THE UNIVERSE. WHEN AMERICAN ASTRONOMERS ISSUED A BOOK COMMEMORATING THE 500TH BIRTH ANNIVERSARY OF COPERNICUS, THEY DEVOTED A SPECIAL CHAPTER TO THE DEVELOPMENT OF AMBARTSUMYAN'S IDEA OF THE ROLE OF GALACTIC NUCLEI IN THE EVOLUTION OF THE UNIVERSE. HERE SOVIET LIFE CORRESPONDENT OLEG BORISOV TALKS WITH THE OUTSTANDING AND CREATIVE SOVIET SCIENTIST.

Q

You are one of the investigators of the universe whose ideas and observations have forced astronomers to give up forever the concept of the calm solemnity of the heavens. If you were asked to give a brief description of the universe today, what would you reply?

A: In short, I would say the universe is tempestuous and rapidly changing. Our metagalaxy, in which our galaxy is a mere speck, is expanding at a tremendous rate, almost doubling in volume every 10 billion years. In our galaxy as well as in other star islands, scientists have discovered—in addition to slow changes—gigantic explosions, outbursts of vast masses of substance, and the appearance and disappearance of superpowerful emissions. We observe almost momentary peaks of stellar radiation in the optical, X-ray and gamma-ray ranges as well as the decay of stellar bodies and their systems. The universe is teeming with unstable and nonstationary objects. It is these objects that are now attracting the attention of astronomers. I'm sure that the study of various aspects of these objects will make it possible, step by step, to unravel the laws governing their origin and evolution.

Q: In school we learned that the planets and the stars had condensed from gas and dust clouds found in the universe, from some diffuse protosubstance. You were the first to refute this idea of the "gas and dust" proponents who are still in the majority. You subscribe to a diametrically opposite view. At all "levels" of creation dense bodies are formed not through the condensation of diffuse matter but through the fragmentation of protobodies of a prestellar nature unknown to us. What do you base your opinion on?

A: The well-known Russian astronomer Fyodor Bredikhin [1831-1904] formulated a theory that explained how meteoric showers were formed as a result of the disintegration of comets. Canadian astronomer Peter M. Millman has recently confirmed these conclusions. However, a direct investigation of the meteorites that have fallen to Earth testifies beyond the shadow of a doubt to the fact that they arose from the explosion or fragmentation of more massive bodies, like large asteroids.

Of course, one or two facts are not enough evidence to prove that the processes of disintegration and explosion are common throughout the universe. Therefore, let's go further and look at the ring of asteroids. Are they gradually assembling into one body or, on the contrary, fragmenting more and more? A recent analysis of the origin of these bodies based on the distribution of masses and periods of rotation indicates that the fragmentation of substance is taking place in the belt.

Now let's turn to the so-called planetary nebulae, which are rather symmetrical and sometimes ringlike formations with a star at the center of each. Some of the earlier thinkers were inclined to believe that it was a fairly good illustration of the fact that a star forms from a gas and dust mass—for example, the ideas of Immanuel Kant and Pierre-Simon Marquis de Laplace. However, astrophysicists have established that these objects are expanding at speeds on the order of 15 to 30 kilometers a second and by their nature have nothing in common with the origin of planetary systems. The latest research leaves no doubt whatsoever that these nebulae sprang up as a result of their expulsion from the central stars. Within approximately 100,000 years of their appearance, planetary nebulae are dissipated in the surrounding space.

Thus, we see here, too, that the evolution of space objects proceeds from the denser state of matter to the more diffuse.

Q: "We see here, too?" You realize most of us are not astronomers, and we see these objects only as stars. And we wonder: Where do they come from? What are their origins? Why are they so bright?

A: By the way, these questions are not that easy to answer. No astronomer today can produce any convincing example of a dense stellar body arising out of diffuse matter. Our galaxy does not belong to the systems particularly rich in diffuse matter. Yet, the process of star formation in the galaxy in our epoch is continuing intensively. Methods of statistically figuring the mechanics of star systems have established that star clusters belonging to the galaxy evolve toward disintegration. The stars contained in them grow old and gradually leave them and become part of the general stellar "background" of the galaxy.

Evidently the stars are formed from a superdense and as yet unseen protosubstance. Nebulae originate from it in the same way as stars.

What is the nature of protomatter? Unfortunately, we don't know anything about it at present. Perhaps, in order to penetrate this mystery, the laws of physics, which appear fundamental to us, will have to be revised. It is even possible that this will bring about a new revolution in the natural sciences as was the case when the theories of relativity and quantum mechanics were born. I believe that astrophysics may well become the leader of the natural sciences in the twenty-first century.

Q: Over the past 15 years researchers at the Byurakan Astrophysical Observatory have discovered 1,500 galaxies with so-called excessive ultraviolet radiation, that is, a new galaxy is discovered nearly every three days, if you work without a day off. Consequently, excellent statistics are available at the new level of the cosmological hierarchy. Do they favor your "crazy" idea?

A: Phenomena of a scale that strikes the imagination of even seasoned astrophysicists have been discovered in the world of galaxies in recent years. I mean the extraordinary activity of the nuclei of many galaxies. The central part of these extremely remote worlds is emitting gigantic flows of energy of a nonstellar nature. In the nuclei of active galaxies there are bodies that eject mighty streams of substance into the surrounding space at velocities measured in thousands of kilometers a second.

What do these processes show and what follows from them?

nucleus, the spherical component, the disk and the spiral arms. Investigations have shown that at least some of these components are formed from matter ejected by the nucleus. Facts have been established which directly show that the spiral arms of the galaxies flow out from their nuclei. We have also observed a picture that convinces us that at least some dwarf galaxies are a product of ejection from the nuclei of supergigantic galaxies.

In this respect it is perhaps quasars that are the most intriguing phenomena. Some of them are, as it were, the "naked" galactic nuclei of enormous luminosity. Observations show that quasars are where turbulent ejections—outflows of substance from the central body—occur. It may be assumed that each of these surprising objects is a nucleus in an early stage of development which has already "acquired" its own stars or will do so in the future. Then, following some decline in the luminosity of the nucleus, a quasar will turn into a normal galaxy.

So, even at the top rung of the cosmologic ladder we see an extremely unquiet and, physically, a highly "emotional" world. Underlying all of this, it seems to me, is the continuing disintegration of the superdense and fantastically energetic protosubstance.

Q: Indeed, the word "thermonuclear" is imperceptibly vanishing from the vocabulary of the astrophysicists who are observing dramatic events in various parts of the metagalaxy. And it can't be helped—the scale of galactic energy is such that thermonuclear fusion just "can't" provide an adequate explanation of what's happening. Take the stars and our Sun in particular. Everyone was absolutely sure that they shine as a result of the fusion reaction of hydrogen nuclei. And yet even this belief is losing ground. Will you comment on this?

A: It's true that the so-called standard model of the Sun has been limping badly recently. On the one hand, experimenters' instruments still register a deficiency—as compared with the calculated amount—of the neutrinos that should have been ejected by the Sun's interior as a result of the thermonuclear reactions occurring there. And now come the remarkable findings by Soviet Academician Andrei Severny and his staff at the Crimean Astrophysical Observatory. They have discovered pulsations on the Sun's surface layers. The time of the pulsations sharply contradicts the existing models of the internal structure of our nearest star and is still a stumbling block for the theories explaining the origin of the Sun's radiation energy.

For me, however, such a turn of events was no surprise. Years ago, when I was studying young nonstationary stars, I assumed that clots of dense matter—sources of inner-star energy—are brought up from the interior to the exterior layers.

I think we need a new theory about the internal structure and origins of emissions from the stars and the Sun. It must consider the existence and the significant role played by thermonuclear reactions that occur inside the stars. There will be a completely different picture of what we know if they turn out to be the chief source of stellar energy in the future.

Q: You have mentioned the possible seepage of clots of mysterious matter from the stellar nucleus. Wouldn't it follow then that fragmentation is occurring here, too? Isn't there any phenomenon in the cosmos that could be considered as indirect and independent evidence that all dense celestial bodies are derived from the universal process of fragmentation?

A: An important phenomenon spotted recently by British radio astronomers may provide a clue. Before I describe it, I would like to note the following. Byurakan's hypothesis about the consecutive division of the originally superdense mass, which turns into less dense objects, makes it possible to come up with entirely new predictions. One of them was made in 1975 and 1976 by Rudolf Muradyan, a Soviet scientist and Doctor of Science in physics and mathematics. He proceeded from the concept of "superadrons" (superheavy elementary particles).

The point is that according to modern views of the physics of elementary particles, there is an intimate interconnection between the mass and spin of particles. If those who claim that the astronomical universe was born as a result of the disintegration of one superheavy particle, tentatively called the "primary adron," are correct, then it is theoretically possible to predict that the universe must make one revolution in thousands of billions of years. That was the idea formulated by Muradyan.

Recently a report arrived from Great Britain that the astronomical observations made by scientists at the Jodrell Bank Observatory using large radio telescopes confirm the possibility of the metagalaxy's rotation. This situation, incidentally, may provide a convincing illustration of the philosophical concept that there is an intimate genetic connection between the microcosm and the macrocosm.

Q: Let's leave the world of concrete things and finish our talk on a more philosophical note. You have contributed many articles to the Soviet journal *Voprosy Filosofii (Questions of Philosophy)* in which you express your personal philosophical views, including those concerning the future of the natural sciences. In this connection I would like you to explain this. The modern scientific and technological revolution has produced in some people the stereotypic view that the locomotive of knowledge is approaching the final unraveling of the mysteries of nature. Perhaps the only remaining factor is to look into the origin of the stars and the structure of elementary particles. Where do you think the "locomotive" is now?

A: The entire experience of science and its history leaves no doubt that in the twenty-first century and even a thousand years from now human thought will be facing difficult and, most likely, even more challenging tasks than are being tackled by our present generation. I think that the best confirmation of that is the present-day character of the development of astrophysics where the greater the number of discoveries made, the greater the number of problems that must be solved—and these are not easy problems.

In a nutshell, there is no terminal station. And I deeply believe that this is

STRATEGY OF GROWTH

By Nikolai Shishlin
Political Observer

THE ECONOMIC summit conference of the Council for Mutual Economic Assistance (CMEA) countries, held in Moscow from June 12 to June 14, was a major event in the history of world socialism. Taking part were 10 CMEA countries: Bulgaria, Hungary, Vietnam, the German Democratic Republic (GDR), Cuba, Mongolia, Poland, Rumania, the Soviet Union and Czechoslovakia. Their delegations were headed by their top representatives.

The conference proceeded in a constructive spirit of friendship, mutual understanding and unity. It confirmed the unity of assessments and views on key issues in the life of the socialist community, and on the international situation, and expressed a collective striving for continued unity of fraternal parties and states.

The CMEA economic summit conference and its document titled "Statement on the Main Directions of Further Developing and Deepening the Economic, Scientific and Technical Cooperation Among CMEA Member States," and its declaration titled "Maintenance of Peace and International Economic Cooperation" are important in many aspects. Above all, they are important economically.

The CMEA countries have outlined a large-scale, long-term program for promoting socialist economic integration. A large amount of work lies ahead. The program must be broken down into specific proposals and transformed into bilateral and multilateral agreements. Yet, it is possible to say even now that reliable prerequisites exist for the implementation of all decisions adopted by the conference. To begin with, the CMEA countries have a tremendous economic potential, including substantial natural resources, growing production capacities, a high level of science and technology and, last but not least, highly qualified personnel.

The 35-year-long experience of CMEA's existence proves that a stable trend of steady economic progress is characteristic of the socialist countries. In the past 15 years the socialist community doubled its industrial production, whereas, the capitalist world increased its production by little more than one-third.

Entering a new stage of socialist economic integration, the socialist countries have at their disposal rich experience in maintaining truly equitable and mutually advantageous cooperation. Their experience includes joint construction of major industrial projects and unique oil and gas pipelines, broad cooperation and specialization in the production of hundreds of items, and direct contacts, not only between ministries and departments but also between enterprises.

It is important to note that the search for ways to perfect economic management, which has been conducted in a number of CMEA countries over the past few years, has proved fruitful in many respects. Important and interesting results have been obtained in the Soviet Union, Bulgaria, Hungary, the GDR and other socialist countries. It is only natural

that in 1983 and in the first months of 1984 the rates of national economic development have accelerated, and, what is particularly important, the effectiveness of social production has been on the upsurge.

Taken together, these facts provide the justification for the claim that the strategy of development worked out by the Moscow conference will be transformed into reality.

The Statement on the Main Directions of Further Developing and Deepening the Economic, Scientific and Technical Cooperation Among CMEA Member States describes in detail the lines along which socialist economic integration will be developed in the future. The results of that development are predictable.

This primarily applies to scientific and technical progress. There is good reason to expect that over the next few years the CMEA countries will experience a rapid growth in machine building, electronics and microprocessors and will build highly productive machinery for both industry and agriculture. Apparently, this process will be accompanied by the further development of the socialist international division of labor. Direct contacts between industrial associations and enterprises in different socialist countries are likely to expand. The aim that the CMEA countries want to achieve is obvious: to advance to the leading positions in all directions of scientific and technical progress. There is no doubt that, by pooling their efforts, the CMEA countries will manage to conquer new technical summits.

Furthermore, it is very important that the decisions taken at the Moscow conference provide the groundwork for solving the problems of fuel, energy and raw materials. The pooling of efforts of all interested CMEA countries is also vital in this respect. The Soviet Union, which is the main supplier of energy carriers and raw materials to other socialist countries, will have to do a lot of work in this direction. Incidentally, in keeping with the documents of the Moscow conference, the Soviet Union will maintain the level of its supplies of major energy carriers to friendly countries for the next few years. The preservation of this level now that energy-saving technology and equipment are being developed will create good opportunities for the growth of social production in fraternal countries. Taking into consideration that the supplies of gas and electricity will be growing and nuclear power engineering will be developing, it is possible to assert that the socialist countries will not be threatened by an energy crisis.

The decisions of the Moscow conference do not cancel the comprehensive programs that are implemented by the CMEA countries. On the contrary, they create a fresh impetus for their accelerated realization.

The conference has set forth many promising ideas for the development of agricultural production and industries involved in processing agricultural

produce. Cooperation among the socialist countries in the field of agriculture has already acquired large scope, which is conducive to the growth of production. Now the task is more ambitious. By pooling their knowledge, experience and efforts, the socialist countries hope to fully solve the food problem in a relatively short period of time and to gain an opportunity to export a substantial portion of their produce in a number of areas.

It must be stressed that the decisions of the Moscow conference consolidate the economic independence of the socialist states.

The political relevance of the CMEA summit is also great. It fully confirms the policy toward the further promotion of cooperation among the socialist countries in all spheres, including international politics. Now that world tensions have sharply escalated, the socialist countries are pursuing a balanced and principled policy of peace and peaceful cooperation and firmly oppose the forces of militarism and reaction. The conference showed once again that the socialist countries have been and are committed to the policy of détente, the limitation and curtailment of the arms race, and the radical improvement of the international political climate. The Soviet Union, as well as its friends and allies, advocates serious and honest equitable talks on all key problems. The door to such talks has been opened by the proposals of the USSR and other Warsaw Treaty countries.

The socialist countries have a very responsible approach to international economic links. Participants in the Moscow conference have unanimously come out for their unimpeded development on the basis of mutual advantage. The socialist countries have an unequivocal attitude toward the problems besetting the developing nations. The socialist states support the eradication of discrimination and exploitation in international economic relations. They oppose the use of economic levers as a means of political pressure and interference in the internal affairs of sovereign states. The socialist countries are ready to continue giving young independent states aid in developing their national economies.

The Moscow economic summit of the CMEA countries has vast theoretical and ideological significance as well. Its decisions are convincing proof that the national and international interests of different states can be combined harmoniously. It shows the advantages offered by the socialist international division of labor, which facilitates the development of national economies and the rise of living standards in all socialist countries. The Moscow conference asserted a profoundly internationalist approach that is inherent in relations among the socialist countries, an approach in which all countries are interested in the success of each CMEA member and each CMEA member is interested in the consolidation of the aggregate potential of the entire socialist community.

A ROUND THE COUNTRY



Clean Air for Alma-Ata

A 30-kilometer streetcar line has been built in Alma-Ata, capital of Kazakhstan. It links new residential areas with the city center and is the longest transit line in the city. Electric transport is essential for Alma-Ata, which is surrounded on three sides by mountains that

intercept the flow of air currents. Under these circumstances, the extensive use of automobiles is becoming a problem, which the new line will help alleviate.

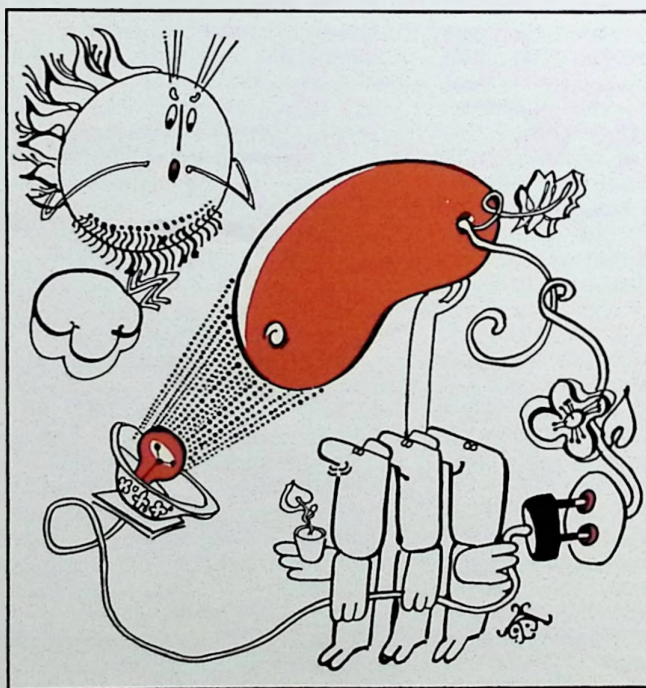
The total length of street car and trolleybus routes in Alma Ata now exceeds 300 kilometers.

Why Invent Ice?

A unique kind of ice has been developed and is being patented by workers in the Shipbuilding Department at Gorky Polytechnic Institute, located on the Volga River. The new ice will be of use to scientists studying the ways to control ice and extend the navigational season of the Far North.

Until now, new techniques for

icebreakers have been tested in basins filled with an artificial substance. It matched naturally occurring ice only in strength but differed in many other respects. The newest imitation of ice eliminates all the shortcomings. The initial results show that the new substance greatly speeds up the laboratory testing of ship models.



A Rival of the Sun

Tests of a metal halogen lamp, developed at the Moscow Electric Light Bulb Production Association, have confirmed that the lamp is the most economical way to raise crops. The name of the lamp derives from the fact that plants grow and ripen under its light more rapidly than they do under the southern

Sun. Many greenhouses are now able to obtain cucumber sprouts in 17 days, instead of the usual 25. The same is true of other plants.

The new light source, which is patented in many countries, uses between one-half and one-third of the electricity needed by a mercury-arc lamp.

Boys Find a Cache

It all began as a game. Several young boys decided to dig in a cavern for fun. As they proceeded to widen its opening, one of the walls gave way, and a glittering stream of gold coins spilled out. The cache found by the Moscow boys contained 303 coins which were minted from 1897 to 1903.

Land Icebergs

Encrusted ice is a common feature of the Far North. It doesn't disappear even in summertime, which is no surprise: In places it may be as thick as 10 meters or more.

Aerial mapping has helped scientists establish that there are about 7,000 of these spots in the basin of the Lena River, in Eastern Siberia. The largest, which is also the largest one in the world, covers an area of over 100 square kilometers.

These "dry land" icebergs have a useful purpose: Even during the hottest years they do not let mountain rivers run dry.

New Heart Valve

A new model of the heart valve has been designed by Moscow scientists. It is capable of sustaining great loads, that is, pumping 10 tons of blood a day. That is an enormous amount of work even for a healthy human heart. The new valve costs about 200 rubles (some 270 dollars), but since public health services in the USSR are free, patients aren't charged for the operation, the valve or any post-operative treatment.

Going Underground With a Laser

A fast tunneling machine (more than five meters high) can cut a tunnel 20 square meters in cross-section. The new machine reduces the number of people needed for the job 10-fold and speeds up the operation 7-fold compared with its predecessor. This is also the first time that Soviet experts have used a laser device to guide the machine along coal seams.

Glass Replaces Steel

An unorthodox technique for making reinforced concrete panels, proposed by scientists in Kiev, saves a large amount of metal used in large-panel housing construction. The steel netting, used for reinforcement, is partly replaced by fiber glass.

Adopting the technique in Kiev alone would save an average of up to 3,000 tons of metal a year.



Arctic Volcano

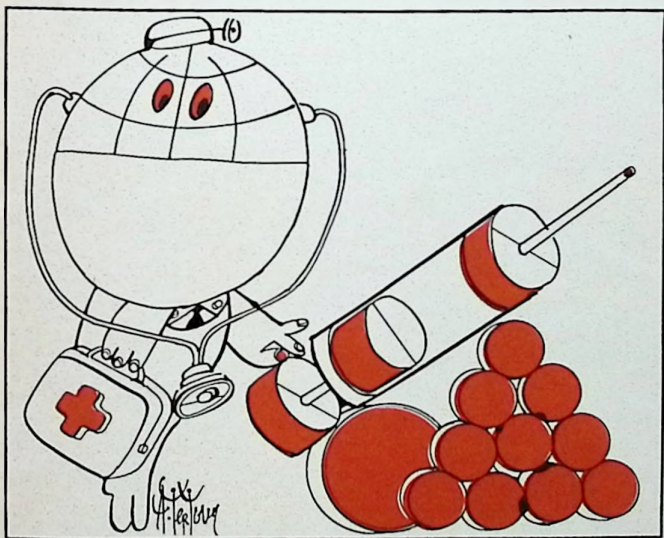
A rare phenomenon for the Arctic—an eruption of a volcano—was registered occurring on the deserted Bennett Island in the Da Long group by a Soviet artificial Earth-satellite. The eruption's cloud of discharged gas stretched for many kilometers along the icebound East Siberian

Sea, above the Arctic Circle. Possible volcanic activity in the region was predicted by Academician Vladimir Obruchev half a century ago. His views have now found confirmation: This year four eruptions have already been recorded on Bennett Island.

Water "Treats" Dam

The water in Lake Baikal, which experts say is the purest, clearest and best tasting in the world, can now be called "a concrete hardener." This is what scientists at Irkutsk University are claiming. Studying the state of hydroelectric power structures on the Angara River, which flows from Lake Baikal,

researchers have found that Baikal's water leaches out lime and salts from the dam's concrete and immediately turns them into sediment. The scientists call this phenomena "secondary hardening." As a result, the wear on the hydroelectric power station's structures is negligible.



Collection of Viruses

A state-owned collection of viruses kept at the Institute of Virology of the USSR Academy of Medical Sciences numbers 450 pure and about 3,000 composite viral strains.

It is the scientist's job to assemble the largest number of pathogenic viruses in order to find effective ways of treating them. This applies especially to the hundreds of influenza viruses, which are called "visitors

with a thousand faces." Whenever an outbreak of the disease occurs and a new strain is identified, it is sent in vials to influenza centers around the world.

The Institute of Virology's collection has aided in developing vaccines against smallpox (with a billion and a half doses donated by the Soviet Union to other countries), poliomyelitis, rabies, influenza and measles, among others.

Freezing... a Bomb

After scooping up a load of earth and raising it above the ground, the excavator operator stopped in his tracks: Lying in the deep hollow below was a bomb left over from World War II. Defusing experts soon appeared on the scene, but despite all of their efforts, they could not succeed in extracting the rusty fuses. It was decided to lower the temperature of the bomb to a level at which the detonating device would not trigger an explosion. To accomplish this, a special bath of carbon dioxide was used. Then the dangerous cargo was transported beyond city limits and exploded.

Kologriv Taiga

This is the official name given to a unique area of forest in Kostroma Region, in the Russian Federation. It is a relatively small region—about a thousand hectares—but its scientific value is tremendous. According to scientists, Kologriv Taiga is the only pocket of untouched nature in Europe. It is a remnant of the boundless forestland that once covered all of the northeastern part of the continent. Only here can you see the classic ecological balance that has evolved naturally over the centuries. Comprehensive studies of the fauna and flora of Kologriv Taiga will help scientists find answers to many questions concerning the past and the future of our forests.

A Century Apart

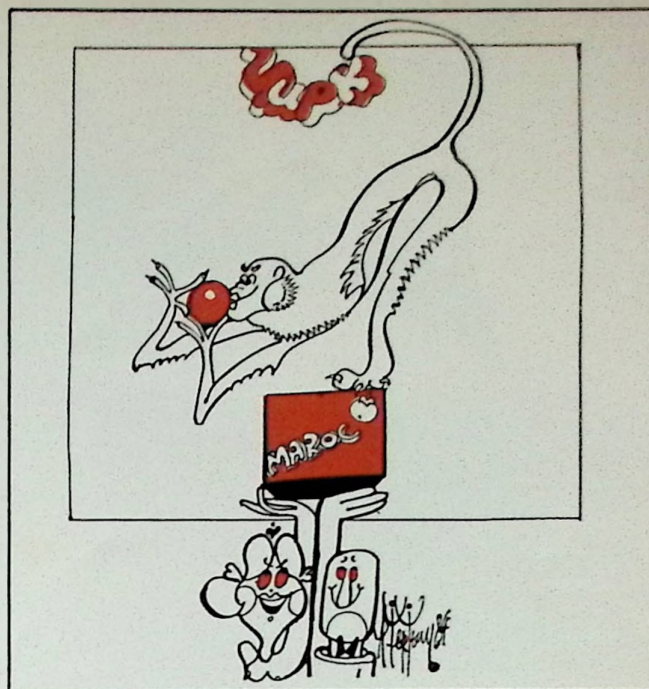
The Kasumovs of Baku, Azerbaijan, have celebrated a jubilee—the joint birthdays of nine-year-old Aiten and her great-grandfather Savalan, who was born on the same day but a century before.

Savalan Kasumov is an urban long-liver. Forty-four years ago he left his village at the foot of Mount Dashkesan, one of the beauty spots of Azerbaijan, and moved to Baku.

"My younger years were hard," the old-timer says. "But I am happy now and can't imagine a day without work. That is perhaps why I have lived so long."

Moscow's Eight Centuries

An interesting new book, *Moscow: An Illustrated History in Two Volumes*, has recently been put out by Mysl Publishers in Moscow. For the first time in Soviet literature, the more than 800 years of Moscow's history, beginning with ancient times and ending with the modern period, are traced in one publication. The two-volume set includes many items in the state archives as well as in private collections. Prominent Soviet scholars took part in compiling this work.



A Chimpanzee Celebrates

Tom the Chimpanzee, a favorite among circus audiences, was treated to a basketful of oranges at his 500th performance. Tom is one of the stars of the country's only chimpanzee circus, which at the time of the celebration was on tour in Voronezh, Central Russia. Interest in the animal is shared by spectators and scientists alike.

Tom is one of the few chimps

born in the USSR, for that matter, in all of Europe. The animals practically do not breed in harsh climatic conditions. Besides, Tom lost his mother at an early age and was cared for by humans. Tom, now four and a half years old, is in excellent health. He is a brilliant performer, thanks to the painstaking efforts and loving care of his trainers, the Ivanovs.



Protecting Fur Seals

The population of fur seals in the Northern Pacific has increased considerably over the past 30 years and now stands at around a million. This has largely been brought about by the convention signed in 1957 by the USSR, Canada, the U.S. and Japan.

In the Soviet Union protecting seals is organized on a planned and scientific basis. Islands where seals have their rookeries have been declared preserves. All economic activity is prohibited within a 30-mile radius. Spe-

cial multinational patrols monitor the area to make sure the laws governing it are not violated.

An extensive program of study is planned to begin this year in the Sea of Okhotsk and in the northwestern part of the Pacific Ocean. It will be carried out by the research vessel *Ucheny (Scientist)*, which hopes to determine the migration routes of the seals and their reproductive, growth and food habits. Scientists in the project also hope to discover why and when the animals die.

**NEXT
ISSUE**



UZBEK AND TURKMEN: 60 YEARS OF PROGRESS

From Feudalism to Socialism

Modern Uzbekistan and the upsurge of its national culture are characteristic of the progress made by the Soviet Central Asian Republics since the early twenties, when just two per cent of the population was literate and women were hidden from public view. Today, Uzbek women account for one-half of the republic's employed population. Dilbar Abdurakhmanova, one of the world's few women orchestra conductors, is highlighted. Other articles deal with the establishment of the Turkmen Soviet Socialist Republic, life in Turkmenia today and the changing face of the Kara-Kum Desert.



PREVENTION THE MAJOR AIM

Soviet Health Care Is Free

Materials on the Soviet system of health care include an interview with Sergei Burenkov, the USSR Minister of Health, in which he emphasizes that a comprehensive system of preventive medicine must be based on the accessibility of health care for everyone both in terms of cost and availability of facilities.

THERE'S NO TREATMENT FOR NUCLEAR WAR

Only Peace Can Help

American physicians, artists and teachers met with their counterparts in the Soviet Union. They all agreed that nothing is more important now than working together to guarantee there'll be no war.

COMING SOON



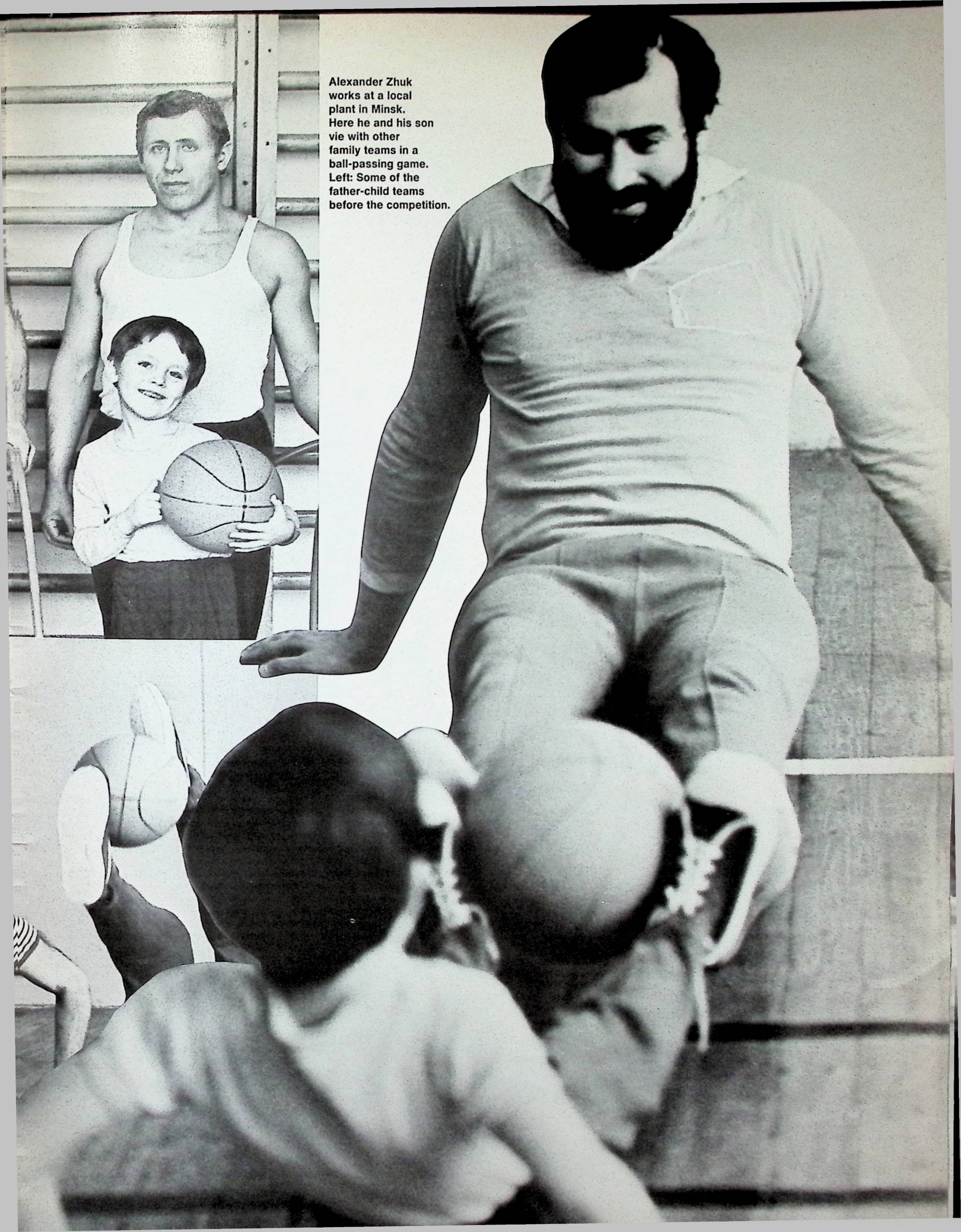
PLAYING TOGETHER BUILDS CLOSENESS

By Svetlana Savrasova
Photographs by Yevgeni Koktysh

For several years a number of families in Minsk, Byelorussia, have been taking part in a special experimental program at a local sports complex. The object of the program is to find the best activities for building closeness between parents and children.



Alexander Zhuk works at a local plant in Minsk. Here he and his son vie with other family teams in a ball-passing game. Left: Some of the father-child teams before the competition.



A sociological and educational experiment in its fourth year in Minsk, capital of Byelorussia, is aimed at finding the optimal form for building physical fitness and family unity. The location of the experiment is the Gorizont (Horizon) Sports Complex, one of the largest sports complexes in the city of 1.5 million people. The complex belongs to the trade union at the local color television plant, which provided the money for its construction.

One hundred and twenty families of workers at the plant (356 persons in all) gather here every Sunday. They come to take part in a special program of activities, which includes various games and exercises geared to the age and skill of the "athletes." For example, a team of children might compete with a team of adults in passing a ball down a line. The children are given an ordinary basketball to pass, while the parents have to cope with a medicine ball weighing five kilograms.

The 90-minute training session is divided into two sections. The first takes place in the gym, the second in the swimming pool. All of the exercises, both athletic and aquatic, take the form of games and contests. Sometimes the parents and children are rivals, sometimes teammates.

"You can just imagine how my eight-year-old daughter feels if my team wins the hoop race, or loses it—and it's my fault. This explains how I managed to lose 10 kilograms of extra poundage in only six months," says Lyudmila Khodyukova, an assembler at the television plant.

The prestige of the fathers and mothers grows in their children's eyes when the parents begin to participate in games as teammates. If they are not too good in one activity or another, the children become their teachers and coaches, and the natural respect that teachers have for industrious students grows.

"My father is a good partner," says seven-year-old Olga Ilyushchenko. "All my friends say he has very good posture, too. I have begun to teach the other parents how to skip rope because my fa-

ther used to stoop before he took up rope skipping."

In turn, parents develop a sense of responsibility for the physical fitness of their children and themselves.

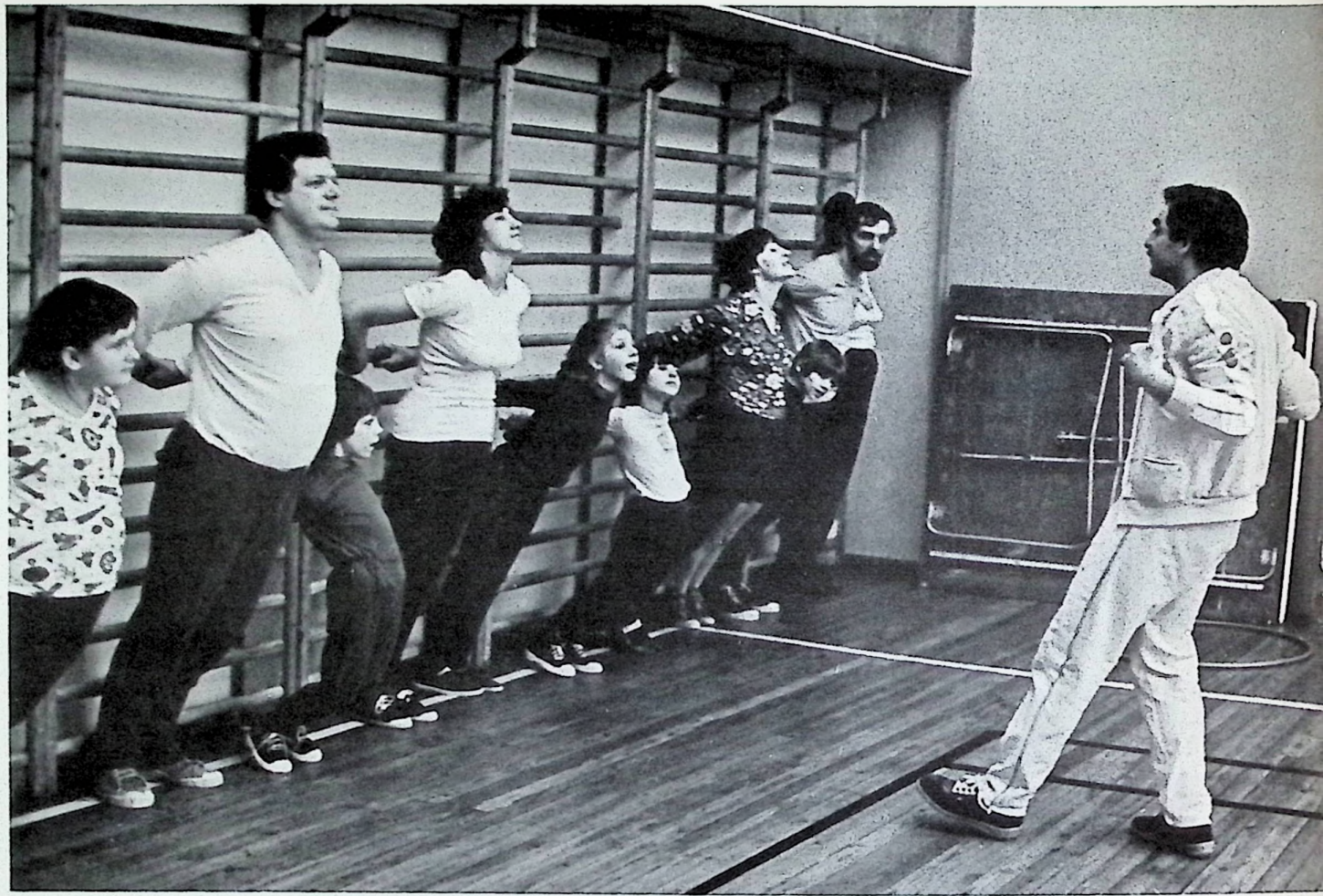
The experts at the sociological laboratory who are conducting the experiment have as their ultimate goal creating family physical fitness and health-building groups in every neighbor-

hood of the city. Similar groups have been started at sports complexes belonging to three other large enterprises and in the local sports club. And the idea is getting even more popular all of the time. For instance, the section led by Mikhail Geller, a proponent of family physical fitness at the complex, which consists of six groups, has new members

joining it every year, and not one family has dropped out since the first day it met, not counting the seven teams that have moved to a new location. And the members try their best not to miss any sessions.

Geller's rule of thumb is the following timeless saying: "Look for common interests, and you will find each other." ■

Proponent of physical fitness Mikhail Geller coaches a session in the gym. Bottom: Before families can enter the program, they must pass a required physical exam.





The experimental program is made up of two parts—one in the gymnasium, the other in the swimming pool. The children say that the swimming games are their favorite.

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A TRIUMPH OF CONTENT AND CRAFTSMANSHIP

By Nonna Stepanyan
Art Historian

Photographs by Victor Adhyan

After five years of strenuous work, Grigor Khandjian's pastel on cardboard study for the tapestry *Vardanak* was unveiled in 1981.

When Catholicos Vazgen I, the head of the Armenian Church, asked artist Grigor Khandjian to do initial sketches on cardboard for two huge tapestries to be hung in the main conference hall of the Echmiadzin Patriarchy, he surprised no one. Academician of the USSR Academy of Fine Arts, corresponding member of the Armenian Academy of Sciences, People's Artist of the USSR and winner of many awards, Grigor Khandjian, 58, is well known as a book illustrator, painter and creator of large-scale design projects.

Khandjian's best works combine seriousness and a blend with a temperament reaching exaltation, with a conviction that the language of fine art can express thoughts of a historical and philosophical nature capable of gripping the soul of every person and society as a whole. For Khandjian, his predestination, the purpose of his art is to bring out the past of the Armenian people and the features of that nationality's spiritual culture that took shape over the course of its historical development. In this sense, the Catholicos' choice of Khandjian as the artist for the job is impeccable.

Five years of strenuous work passed between the time the theme for the tapestries was discussed and the day, in June 1981, when they were unveiled at a special exhibition in Yerevan, capital of Armenia. The display of the cardboards and the preparatory materials for them was more than just a routine event in modern artistic life. It aroused great interest among the general public.

The Armenian Alphabet, a work on cardboard, devoted to the creation of the alphabet, and *Vardanank*, also on cardboard, is based on Prince Vardan Mamikonyan's battle with the Persians. This work contained something that touched the hearts of every visitor, and against the background of the fine arts of our day, it deserves special mention.

The attractive force of both works is their content, the unity of their theme and execution. They affect people in various ways, but they leave no one unimpressed.

The theme can be called the theme of national self-determination, of the Armenians' first appearance as a people with their own language, religion, culture and land. Armenia was the first nation in the world to embrace Christianity (in 301). It stood apart from the nations around it and began its own historic development, thus determining its own destiny.

To embrace Christianity, to translate into its own language several books from the Bible and the four Gospels, to record these translations in letters specially devised in the fourth century (they are in use to this day!)—all this, in fact, meant standing out among the other states and nations of Asia Minor. Against this historical background emerged the theme for *The Armenian Alphabet*.

Prince Vardan Mamikonyan's battle against the Persians in 451 was the first battle fought by the Armenians in their new status—as a seat of Christianity. They were victorious, and their Prince was retained forever in the people's memory as "Vardanank." The event was described vividly, laconically and, at the same time, with great elation by historian Yeghishe, who as a young man took part in the battle.

The words of the Prince that the battle was being waged "for the native land and for the faith" ("for sacred things" in the Armenian language) and the utterance of Gevond (an important ecclesiastic who became the patriarch and likewise participated in the battle) that "Death is not comprehended in mortality; death perceived is immortality" are clear and understandable to everyone. They can be regarded as key phrases in recounting the history of Armenia and, to a certain degree, in describing the character of its people.

As we see, the themes of the works done on cardboard—the creation of the alphabet and the battle of Vardan—were very wise choices. As an integral part of the nationality's cultural tradition, every Armenian literally inherits these historical events at birth. They have become part and parcel of every single Armenian. Khandjian's precision in choosing a theme became his trump card, but that alone would not have been sufficient to produce the effect that was experienced at the unveiling in June 1981. The theme had to be in harmony with the principles of its artistic incarnation.

Historical events can be portrayed in various ways, with each interpretation bound to leave some viewers indifferent. When turning to events of such faraway days, artists can dramatize them, play them out, reproduce them as a documentary, make them into a poetic legend or paint pictures of them imbued with mysticism. The history of paintings shows examples of each variation.

Grigor Khandjian chose to create *Vardanank* in a manner that perfectly achieved his aim, which was, to some extent, to incorporate all of the ways of interpreting the past, but with an absolute and winning seriousness. It is a very special kind of seriousness, related to the historical Empire style. Incidentally, the artist's numerous preparatory sketches bear witness to the fact that in actuality he was influenced by the Empire engravings.

Seriousness alone, however, wouldn't be enough to cause the re-



Catholicos Vazgen I with Grigor Khandjian (right).

piece? How did he manage to awaken an interest that could be likened to the one that a person feels when reacting to current events?

Again Khandjian's choices were correct. He placed the most prominent figures in Armenian culture in his painting of the battle of Vardan. He especially chose the people who by their work, their destinies, were very near to the theme of the battle for the nation's preservation. His interpretation of the legendary historical event became the most understandable to the people's consciousness: Everyone who had played a role in the fate of Armenia took part in the battle. This is the leading theme of the biggest work on cardboard, and it was precisely this that drew interest, that attracted everyone's attention, that brought the most response.

A wonderful cultural tradition stood behind the artist's concept, and, if we consider the content of the work itself behind the method employed, the part of the painting that drew the most attention was the section featuring the face of the artist himself—his self-portrait crammed into the thick of the battle. It is the face of an utterly shaken witness and participant, nearly in a faint. Khandjian was guided in his execution of the work by the grandiose examples of past masters, but he did not copy them. He used a method that had been discovered long before him, employing it as a tried-and-true means of expressing his attitude toward the event he portrayed and to appraise it by participating in it.

Not only did spectators of the work discern their favorite writers, painters, historians and poets on the battlefield—those whom they had known since childhood, those whom they had followed as models, those whom they had read about in their youth—viewers also sought out the artist and asked him where such and such a person was.

The work, in effect, was taken as an act of crowning, and the viewers wanted to witness that lofty event. A major thematic work, if the artist has succeeded in finding the best way to express the theme, transcends the usual appraisals of a work of art and enters the broader sphere of social consciousness.

Now let us imagine the conditions under which artists—even if masters—find themselves when they undertake a work of such complexity and firmly resolve to make it worthy of the theme. Incidentally, though the dimensions for the work were fixed and in themselves were grandiose, Khandjian chose a refined and extremely difficult technique, that of a classical tapestry.

If you study the artist's preparatory sketches, you can see how he arrived at his final approach, how the work shaped itself, how the characters changed. For example, Khandjian rejected the original movement of the Prince (past the viewer, to the left) and replaced it with a more responsible and complicated movement (directly at viewers), but one with more eloquence and force. He made a valuable discovery in the extremely busy surface of the battle scene, from one end to the other, with no air or sky showing at all. This creates the impression of the true din of battle and plays the metaphorical role of space in time, of the absence of any respite. The top of the work is taken up by Persians, all wearing identical helmets.

Now for the word "patriotism." It is patriotism that makes the two works on cardboard—*Vardanank* and *The Armenian Alphabet*—so attractive, and not only to Armenians. The Visitors Book at the 1981 exhibition is full of comments jotted down by people from all over the world. Without delving into the history of Armenia, people from afar were filled with the same feelings that had impelled the artist to take up the work, feelings near and understandable to each and every person.

The last but by far not the least contribution to the success of Khandjian's work is the great skill with which it was executed. The authenticity of form, the manifest cogency, the virtuosity of the drawing itself (there isn't a single unnatural pose), the diversity of characters, the profusion of details (many highly entertaining, like the elephants, weapons and horses) and the groupings that give viewers a chance to actually experience the event (for example, the scene of mourning in the foreground) are just a few of its elements. In short, the instructiveness of the work (in the very loftiest sense of the word) created an orbit that drew everyone in.

Grigor Khandjian's work embodies his stand as a human being and asserts his principles as an artist. It is worthwhile to note that its triumph in his native city of Yerevan was preceded by a "dress rehearsal" in Central France, in that country's "tapestry region," where the works on cardboard were accepted as patterns for tapestries. The tapestry workshop of the Penton Brothers in the little town of Felletin held a widescale public display of the smaller of the two tapestries after it was completed. People flocked from other towns and cities in the region to see *The Armenian Alphabet*. The display caused a sensation: For the first time in many years a real tapestry had been made on a lofty theme! The people saw in this a promise of the rebirth of the significant monumental forms of the fine arts of bygone days.

The works of Grigor Khandjian arouse thoughts on the development of present-day art. They assert this art as a force uniting people in their yearning for good, for heroic feasts.

WE REMEMBER

By Edvin Polyanovsky

LEAFING through newspapers dated June 22, 1941, I see that a new stadium with a seating capacity of 50,000 will open the following day in Kiev, capital of the Ukraine. That would have been "tomorrow," but "tomorrow" the war broke out.

To be precise, it was not "tomorrow" but "today," at daybreak.

Peacetime papers with information about peacetime life came out on June 22, 1941, when blood had already been flowing in the country for several hours.

The following day's papers published the mobilization order and the declaration of the state of war issued by the Presidium of the Supreme Soviet of the USSR. They also carried the first day's report of the High Command.

On the evening of June 22, Winston Churchill spoke over the radio to the British nation. He said that no one had been a more persistent antagonist of communism than he had been in the past 25 years. He said he wouldn't take a single word of his back, but at the moment all of that retreated in the face of events. Churchill said that the danger threatening Russia also threatened Great Britain and the United States. The cause of every Russian fighting for his hearth and home was the cause of all free men and nations in all parts of the world.

The Soviet papers published a synopsis of the speech, omitting the first part of the paragraph where Churchill spoke of antagonism. I mention it not to foment ill will but to make people realize that today the time has come when dislike, antagonism and even hate should, at the least, move aside—I'm sorry, but it would be too unrealistic to say, "retreat altogether." Hasn't the time come for all people to choose whether to live or to die? Is it inevitable that a devastating new war must start for us to understand each other?

It is possible that when that war would be over there would be no one left to read the latest prewar papers in any language.

At dawn on June 22, 1941, Soviet border troops reported that the fascists were concentrating along the border, but they received strict orders not to succumb to provocation because, certainly, it could be nothing but provocation. A nonaggression pact between the USSR and Germany had recently been signed.

Three months after signing the pact, Hitler said: "We have an agreement with Russia. Agreements, however, are observed only up to the moment they lose their expediency."

Only after Kiev, Odessa, Sevastopol, Minsk, Murmansk and Kaunas were bombed and an hour and a half had passed since the Nazis had crossed our border did the German Ambassador hand his declaration of war to the Soviet Government. The reason for the Germans' unleashing of what they termed "a preventive war" was that the USSR was allegedly preparing to attack Germany.

The Nazis had taken everything into account: our industrial potential, our arms, the strength of our forces, tactical potential, fuel, the state of our roads and the weather conditions. They had taken everything into account except the character of our society and our people. How could the Germans have calculated beforehand that the Brest Fortress alone would cost them more than the conquest of whole nations in the West?

During the very first days of the war thousands of men and women, old people and teenagers, Communists and nonparty people, rushed to enlistment

offices to sign up to fight. Composer Dmitri Shostakovich, for instance, was determined to go to the front. "Yesterday I made a formal request to join the army," he wrote in a letter carried in newspapers.

During the war about 400 men flung themselves bodily on gun ports to choke enemy machine-gun fire. More than 400 pilots steered their burning planes at columns of enemy tanks. About 450 pilots rammed enemy planes. Most likely there were more feats of this type of heroism, but I am giving only figures that were officially registered. More than 11,500 men and officers became Heroes of the Soviet Union.

It is not the number of heroes that is important. It could have been less or more. Some people managed to rise to their full stature, while others could not. The point is that everyone was determined to rise and to fight, not to retreat.

Do you know how many of the men who threw themselves on gun ports have survived? Seven. One out of every two of those who rammed airplanes survived because what they did was something they could control by calculating their speed, altitude and angle of impact. As for those who blew themselves up with grenades, taking with them fascists, or those who directed their burning planes at enemy tank columns, they perished. Miracles do not happen.

A total of 20.3 million Soviet citizens died in the war. One Western politician declared that one death was death, while death en masse was statistics. A most cynical aphorism. Still, there is a fraction of truth to the fact that it is very difficult to imagine or comprehend the immensity of such a loss just as it is impossible to imagine a grave for 20 million or one tombstone for them all.

Private Sungutalla Aitkullov was buried in a small common grave in Byelorussia. His comrades fired the last salute in honor of their fallen comrade and marched on. That was in 1944. Two years ago a man introducing himself as "Aitkullov" came to the archives and asked for documents that he needed in order to receive a retirement pension. As it turned out, Sungutalla Aitkullov had not died. He was in shock when they had buried him. When he regained consciousness, he managed to crawl out of the grave.

Two and a half thousand of the living "fallen" like Aitkullov were discovered between 1970 and 1984. Let's take this little drop out of the ocean: 20.3 million minus 2.5 thousand, the arithmetic of death.

But the men who were wounded on May 9, 1945, Victory Day, and were brought home only to die on May 10 are not included among the statistics of the war dead. There were many people who returned home but died a week, a month or a year later.

Alik Jumagaliyev of Kazakhstan wrote: "I have not fought in the war, but I know that there is nothing more terrible than war.

"Our house stood on a hill, and below it there was an old dugout. A shellshocked pilot with both legs amputated lived there with a woman who was either his sister or his wife, or perhaps even a stranger.

"In the morning she would carry him outside and put him down on a blanket spread out on the ground. Then we youngsters would rush to the pilot and admire his shiny brass buttons and handsome air force cap.

"He could not speak, and, when he tried to say something, all he produced was a pitiful and incomprehensible mumbling. He pointed to the clear sky,

hummed like a plane and muttered strange sounds. And each time, tired with the effort and realization that no one would ever understand him, he would pull his cap over his eyes and weep."

This pilot was not included on the list of the dead.

Much later I understood how boundless and tenacious was the aftermath of war. In the early sixties I was in a hospital in a small Northern town. My neighbor in the ward was a colonel, big and powerful, who filled the entire bed. It was hard to believe that there could be a weak heart in his huge chest. However, that was true, and he lay motionless on his back most of the time.

"It is all on account of the war," he sighed.

I did not quite understand what he meant at that time. I thought that if his weak heart had survived the war, there was no reason to be ill now.

During the war everyone believed he was the country's last hope and mainstay, and there was no one to replace him. Even people who would hardly have moved in peacetime went and fought at the front.

At the Piskaryovskoye Cemetery in Leningrad there is complete silence except for the moaning of the ground. Light streams of air waver over the eternal flame, and it looks as though the burial mounds are breathing. For a moment one imagines hundreds of thousands of dead Leningraders rising up from their graves. Everybody should visit Piskaryovskoye Cemetery. Everyone should see the arithmetic of death. These are the figures for only one day of besieged Leningrad, February 20, 1942:

Frunze District Morgue—987 corpses
Sverdlovsk District Morgue—749 corpses
Vasiliyev Island District Morgue—870 corpses
Kubiyshev District Morgue—680 corpses

That day a total of 10,043 Leningraders were brought to the cemetery. Their bodies had been picked up in the streets, at the entrances to houses, in factory shops and in their cold apartments. They were brought to the cemetery on sleighs, and sometimes those who brought them also fell—from exhaustion.

May the dead forgive the living. They did everything they could at the time.

The thing that had a shattering effect on me was the sweets, which, together with some red carnations, lay on the granite slab of one brotherhood grave.

Imagine sweets lying on a grave! The child who is buried there among the rest must have dreamed of them that hungry blockade winter. He never lived to eat them or even see them.

Imagine! Four decades have gone by since then, and someone keeps bringing those sweets!

One day all 20 million of the war dead surrounded me on all sides. That was in the archives in Podolsk, a huge building containing the name cards of the war dead. The place has a very sad name—The Department of Irrecoverable Losses. "Irrecoverable"—short and simple. I assure you, the sensation I felt is indescribable, as though I were standing in a huge burial vault.

I had never before been surrounded by such a large number of dead. The Ivanovs alone occupied several huge shelves. Then came those whose names began with "K," "L," "M," "N," "O."

"May I have the letter 'P,'" I asked the young captain in charge, and I went to look for my father.

Courtesy of the newspaper *izvestia*

Exchanges between Moscow State University (MSU) and the State University of New York (SUNY) have existed for several years. They enable students and faculty members from the United States to take academic courses or do research work in the USSR, and their Soviet counterparts to do the same in the U.S. The length of stay is usually one semester—five or six months. Exchange programs exist between other Soviet and American institutions of higher education also.

I met with some of the 10 American philology students from the State University of New York who were in the Soviet Union as part of an exchange program with Moscow State University. The students I spoke with were Russian-language majors. All have a good command of Russian, so we could freely converse in that language.

The athletic Kathy Sowa was studying the problems of translating fiction from Russian into English. Sue Folger, who resembles a Scandinavian with her light hair and rosy cheeks, and the energetic Lori Jones were interested in modern Soviet theater. Cynthia Robbins, an elegant young woman, was specializing in children's literature, and Laura Scott, who has an attentive gaze and shy manners, was researching Russian fairy tales.

During the course of studies each of the Americans had her own academic advisor, who gave her theoretical and practical assistance. Apart from that, the American students worked independently in the library, located necessary source materials and compiled bibliographies, among other things. The most important aspect of the program was the Russian-language classes, which took up six to eight hours a week.

Kathy Sowa had this to say about language training in the Soviet Union: "I taught the Soviet students who came to take the course at SUNY, and I became convinced that they had an excellent command of the English language, though they were all in the U.S. for the first time and had studied the language in Moscow only."

In Moscow the Russian classes for the Americans were conducted by Natalia Malashenko, a senior instructor in the Russian Language Department for Foreigners. In her opinion, enthusiasm was the quality that united the young women from New York: enthusiasm, a serious attitude toward their studies and a desire to learn and see as much as they could, to fill each day of their stay in Moscow to the maximum. Theaters, concerts, museums, exhibitions, excursions, movies and meetings with the many friends they made here—all of this supplemented their academic studies.

Lori Jones set somewhat of a record during her stay in the Soviet capital: She attended 32 theater performances. Sue Folger was a close runner-up. She returned home with 30 theater ticket stubs.

"Honestly, it wasn't easy to understand the plays at first," remarked Lori, "especially the humor. The audience would burst out laughing, while we sat unsmiling. To react properly, you must have a good understanding of the Soviet way of life, which we certainly can't claim to have. However, the fact that you feel the immediate reaction of the audience at all performances is evidence of the work's topicality, as well as of good directing and fine acting. It seems to me, though, that the young actors of the Art Theater sometimes overdo it—too many gestures and too loud voices. They come across a bit melodramatic. But the older actors of the Art Theater are simply a miracle of mastery and taste."

The Americans, however, were greatly impressed by the Russian bathhouse they frequented: "It was a very unusual experience for us. There is nothing like it in America," recounted Sue Folger. "People come here to rest both body and soul. We tried steam with peppermint, with birch twigs and with kvass. And what woman, particularly in such situations, does not love to talk? So the bathhouse is also a kind of women's club where you can learn about an original remedy for radiculitis or a recipe for mushroom pie. And along with that, you can hear the ordinary, colloquial Russian language spoken. We, in fact, combined the useful with the pleasurable."

The Americans also liked Russian *bliny* (pancakes) and Moscow's pastry, ice cream and chocolate.

Cynthia Robbins, unlike Kathy Sowa, who, by her own admission, "can only make good instant coffee and scrambled eggs," boldly mastered Russian cuisine and treated the other Americans in the group to *bliny* and *shchi* (cabbage soup) that she made herself. During her stay she became quite familiar with her neighborhood and got to know the local stores very well. She would often visit the market not far away.

"It's a very picturesque spot where you see people from different republics and regions of the country," she said. "True, sometimes the seller—a farmer from Georgia or Tajikistan—spoke Russian with an accent, and I couldn't always grasp the meaning of his words. But in such instances I used a certain strategy. I would stand behind a Russian shopper and figure out the situation through his questions and comments."

Kathy, Sue and Lori didn't want to spend all of their time in the kitchen, so they frequented Moscow University's numerous cafeterias and cafés, where for only 60 kopecks* they could buy a balanced three-course dinner. When they wanted to eat something special, they would go to a local restaurant like the Ukraina. Of course, eating out every day on a 220-ruble monthly stipend is hardly affordable, yet the young women said that they were quite pleased with their standard of living at MSU. They weren't charged anything for their rooms in the dormitory. Going to a movie in Moscow costs only 50 kopecks, and to the theater an average of from 1.5 to 2 rubles. Kathy purchased a monthly all-round transport pass, which could be used on the subway, streetcar, bus and trolley bus. It cost six rubles.

By the way, the municipal transit system in Moscow, the Americans stated, deserves every praise.

Laura Scott said, "The system in Moscow and other cities—I was recently in Leningrad—operates very well. You can see that much effort is being put into developing it. There are a large number of bus, trolley bus and streetcar lines in the cities. The Moscow subway is very fast, clean and spacious. For only five kopecks you can travel under Moscow from end to end and make a lot of transfers. The old subway stations, prewar and postwar, are very beautiful, even though to me they seem somewhat pompous. The new ones are much more modest, but they are also well decorated with mosaics, bas-reliefs, chasings, and so on. Each has its own character. Personally, I like that—though some consider it unnecessary—but I think that an artistically designed interior fosters taste. In general, it is a pleasure to see beauty around you, even when you are hurrying to work."

The semester in Moscow for the young women from SUNY flew by. Each day was filled to the brim. "It feels like there are still many things I didn't have enough time to do and see," said Lori Jones before departure. "I have made many friends here that I hate to leave. I want very much to come back again."

Cynthia, Laura, Sue, Kathy and Lori stated that their studies were very productive, and they unanimously expressed a desire to visit the Soviet Union again. "Such trips are very necessary," said Cynthia Robbins, "and not just to upgrade skills. They help you learn about the life of the Soviet people and understand their concerns and worries. I, for example, have become convinced that the Soviet people are a very peaceful nation. We need to visit each other more often; it helps us find a common language."

* One ruble equals approximately \$1.25 U.S. at the official rate of exchange. There are 100 kopecks in a ruble.

Kathy Sowa (left) and Cynthia Robbins view the campus and the city from the balcony of their dormitory. Below: Specializing in translating Russian fiction, Kathy Sowa found many interesting literary magazines at the local newsstand. Facing page: Kathy Sowa, Sue Folger, Lori Jones, Cynthia Robbins, and Laura Scott tour Moscow's historical Arbat District.

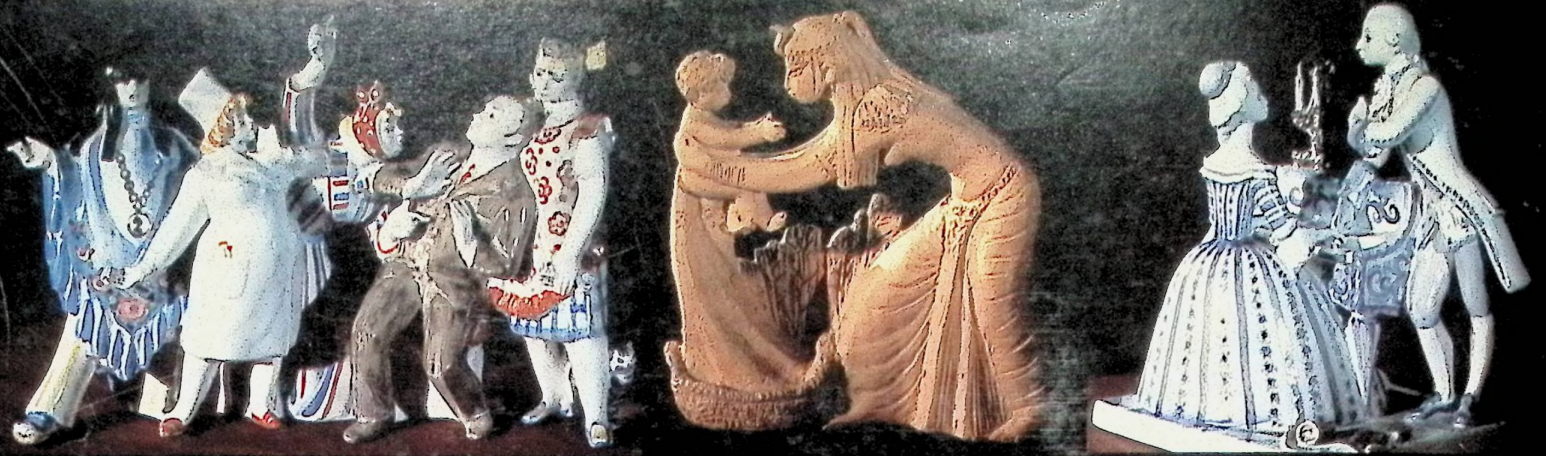


"WE NEED TO VISIT EACH OTHER MORE OFTEN"

As part of an on-going exchange program between Moscow State University and the State University of New York, a group of American philology students spent a semester in the Soviet capital.

By Vladimir Sergeyev
Photographs by Victor Khomenko





Above, from left to right: *Mironova and Menaker in the Show Man and Woman*, 1973; *Pharaoh's Daughter with Child*, 1967; *Mozart*, 1978.



Left: *Gulliver*, 1957. Below: *Choir*, 1967. Bottom: *Hamlet*, 1958. Far left: *The Trumpeters*, 1968-1969.



MOSCOW sculptor Asta Brzhezitskaya (right) calls her creations "little porcelain people." Her china world is permeated with harmony and beauty, but the exquisite form of her sculpture is only a key to the characters and situations. Her expressive statues feature celebrated actors, literary personages and genre scenes. They have been displayed at many exhibitions in the country and abroad.

