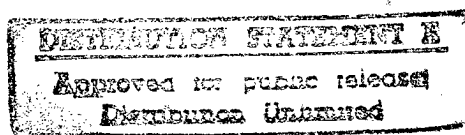


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Science & Technology

***Central Eurasia:
Science & Technology Policy***

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Science & Technology

Central Eurasia: Science & Technology Policy

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More Legislation Needed To Rescue Russian Science

927A0216A St. Petersburg NEVSKOYE VREMYA
in Russian 19 May 92 p 1

[Article by Sergey Zelinskiy under the rubric "An Intellectual Base or a Huge Burden?": "Perestroyka After Perestroyka"]

[Text] "The decrease of state financing of science with allowance for inflation by the end of 1992 will be fourfold"—such is the catastrophic prediction of the Russian Ministry of Science.

At the beginning of the year more than 4,600 organizations and enterprises of Russia carried out three-fourths of the scientific and technical work of the former USSR. More than 2.8 million people are employed in science and scientific service. But today this enormous army, which in all countries is the vanguard of society, is dwindling before our eyes. The best representatives of science are leaving—their work is losing prestige. Inventive activity is decreasing, the effectiveness of scientific research is declining, the existence of scientific school is in question. Russia is near the critical point, beyond which is the complete loss of world scientific authority.

Incidentally, similar warnings have been heard more than once. In recent days hope seems to have appeared among the representatives of science. Two documents gave rise to it: the recently published draft of the concept of science and technology policy of the Russian Federation and the recent Ukase of Yeltsin on urgent steps on the preservation of the scientific and technical potential.

The establishment of the State Russian Basic Research Fund, as well as the nonbudget-carried Russian Technological Development Fund are spoken about in the ukase. The government should draft a statute on tax credits for higher educational and scientific research institutions and for enterprises that invest the profit in science. The Ministry of Science has been charged within a month to draft jointly with the Ministry of Finance a statute on a 75-percent discount for scientists and undergraduates, who are sent abroad on missions. And much else....

It is possible to regard the ukase as one of the components of the future concept of scientific and technical policy. In general the legal basis of the concept requires the passage of seven packages of laws, five ukases, and five decrees of the government.

It is a matter of the protection of intellectual property. Of the reduction and careful examination of state scientific and technical programs (now there are 49 of them, there were about 150, while 23 should remain). Of the privatization of scientific institutions: to specify what can be privatized and to what extent. Of the legislative protection of domestic science from the "brain drain" abroad (preferential terms of the departure and return to their former place of work of highly skilled scientific

specialists are meant). Of the necessity of attracting foreign investments.... And so on and so forth....

The draft of the concept is a voluminous document. Its essence is the complete reorganization of the structure of research and development. The establishment of a common field of science and technology is planned, having eliminated the striking discrepancy between advanced scientific thought and mediocre economic practice.

All this, of course, is tempting. But, it seems, it is unrealistic. Too weak forces are behind this document. The Ministry of Science requested for the second quarter from the state budget 22 billion rubles [R]. The Ministry of Finance specified R13 billion. It succeeded with difficulty in getting R17 billion. The draft of the latest ukase of Yeltsin, which was prepared by the Ministry of Science, contained eight pages. Only two plus pages were issued with a large delay, but there the majority of points, in the opinion of many scientists, will not be fulfilled. Suffice it to recall the fate of the earlier, but absolutely analogous ukase that was devoted to the problems of the Russian Academy of Sciences. It simply remained on paper due to the red tape with the corresponding legal acts.

For many people today it is obvious—it is possible to save science only by having preserved what is advanced and having gotten rid of the ballast. That is, the problem of reduction is arising in all its significance.

Much is being said about the "ballast," but for the present no one can determine it. It is absolutely certain that in the ministry itself there is no clear plan at all of reductions. It is anticipated that the number of people employed in science will be reduced by 30-40 percent (about 1 million people). But how?

The concept of reductions by means of the "rating evaluation" of scientific research institutes and design bureaus seems most practical. For example, it is entirely possible to give the maximum evaluations to "the first 100"—the most well-known institutes (such as the State Optics Institute or the Physical Technical Institute in St. Petersburg). Also to allot them assets from the budget to the full extent. To the others in proportion to their distinction: either in reduced form or to halt centralized financing completely. The latter in practice will not mean at all the shutting of an institute as a legal entity. It is entirely possible that its staff will be retained, the collective will be reoriented toward other economic problems.

However, this project of "indirect reduction" in practice is also hardly practicable: As the head of one of its administrations acknowledged, in the Ministry of Science...there is no precise information about all the scientific research institutes and design bureaus of Russia.

So that although the latest documents brought about some excitement among intellectuals, it by no means strengthened confidence in the future.

They say that new "urgent" ukases are being prepared. But scientists meanwhile are packing their bags. The market has proved to be too serious an ordeal for science. Moreover, here it is difficult to count on appreciable foreign support—there they have their own science, which also requires outlays. Once a German professor from the ministry of science there related that in their country only half of the projects in the area of basic research receive state support.

So that only we ourselves can save our science.

Urals Branch Lacks Automated Information Support Base

927A0204A Moscow MOSCOW NEWS in English
No 19, 10-17 May 92 p 2

[Article by Vladimir Koryukin, Director, Library, Urals Branch, Russian Academy of Sciences: "Living In a Vacuum of Technical Information"]

[Text] While the statement that we live today in an age of information is true, it doesn't apply to those who live in the Commonwealth of Independent States. The right to information in the CIS doesn't mean that you can actually get that information. In the USA more than two-thirds of the work force are employed in establishments related to information processes; the figure here is only 15 per cent. It is said Japan will net, by 2000 up to 70 per cent of its national income from the sale of information rather than manufactured commodities.

According to some estimates, our scientists and experts receive only a third of scientific and technological information available in the world. We have no large computer networks with access to world networks. As for specialized libraries, they are inadequate. The current uncivilized transition to a market economy spells clear ruin for all fundamental research. Strangely, society doesn't seem worried at the prospect.

Moscow scientists of sufficient fame who are close to government circles, can do something to prevent total collapse, but what can scientists in the provinces do? They are unable to carry out even quite realistic projects (like setting up a library complex in Yekaterinburg, the Urals) because they have to spend all their efforts trying to salvage all they can from ruin. One example is the natural history library of Yekaterinburg. The library occupies the premises of the local folklore museum (a former church) which will soon be returned to the local Christian Orthodox church community. But can justice be restored by doing injustice to other people?

All words about "non-traditional information carriers," "optical disks," "data bases," etc., remain just words here.

Problems With Yeltsin Decree on 'Preserving' Science

927A0202A Moscow RADIKAL in Russian
No 17, 15 May 92 p 10

[Article by Vladimir Pokrovskiy; date and place not given: "Still, There Is a National Science Fund!"]

[Text] Very little time has passed from the moment that we established the guilt of the bureaucrats who squandered a remarkable scientific fund (see RADIKAL No. 10, 1992), and here it has appeared. If one looks carefully at Yeltsin's Decree "On Urgent Measures to Preserve the Scientific and Technical Potential of the Russian Federation," published in the last issue of our weekly, one can see that the first point, on establishing a Russian National Fund for Basic Research [NFFI], is the most important and timely of all the points in the decree.

It is noteworthy that it is declared by the decree to be a self-managing state organization. This means the NFFI will protect no one's interests, except those written into its statutes. It is noteworthy that the Fund's budget, received from the state, is strictly stipulated from the very start. It will consist of 2 percent of the allocations, aimed at the basic financing of fundamental research. This amounts to a sum of 2 billion rubles, which is not very big these days, but is inspiring all the same. In fact, the U.S. National Science Fund began with 50 million (dollars, it is true). It is also noteworthy that this fund is for everyone, not just the Academy of Sciences, where about half of domestic basic science is concentrated. In short, we may congratulate ourselves on the fact that our National Science Fund will be a fund operating according to rules, and will not be a sack of money, handed out at the discretion of its leadership.

Andrey Gonchar, vice-president of the Russian Academy of Sciences [RAN], was appointed the organizing director of the NFFI. Or rather, he will become president of the Fund, when the post of organizing director is automatically abolished after approval of the statutes. As it becomes clear, having familiarized oneself with the latest version of the NFFI statutes, approved by the RF government, Andrey Aleksandrovich was rather calm about the point regarding the impossibility of combining the post of Fund president with any other post. This means he will be leaving the post of vice-president of the RAN.

According to certain information, Aleksandr Konoshenko, who now heads the financial and economic administration of the RAN, will leave the academy (for the sake of the Fund!) right after Gonchar. After spreading through the academic institutes, this news subjected many to depression and gloomy forebodings about the academy's future.

It cannot be said that academy associates have loved these two people unconditionally. Some of the scientific associates, despite unquestionable respect for Academician Gonchar, hold the conservative policy (some call it

"reactionary") that he has implemented against him. Aleksandr Konoshenko's reputation in the academy is even odious to some extent, which in his position is not at all surprising. However, even Konoshenko and Gonchar's most frenzied opponents realize that without them, to put it mildly, the probability of complete disorder for the academy will increase significantly in a very short time.

There is yet another potential fly in the ointment. The future of the Fund in many ways depends on who will become the second person in its leadership, the executive director. The point is that Ministry of Science associate Igor Nikolayev, having devoted one and a half years to the development of the principles for the NFFI's activity and to its creation, is laying claim to this seat, and not without grounds. (As we said earlier, along with his associates he prepared the entire documentation on the Fund, and this documentation, which underwent expert analysis in the Carnegie Fund, was highly rated). "If I do not become executive director," he declares, "then I will keep these documents; let the executive director structure his work as he wants himself. This is the opinion of me and my associates, with whom I worked on the Fund documents. In the end, they are our intellectual property."

The Russian Federation government meets Nikolayev's candidacy favorably, but it is as yet unknown what Andrey Gonchar, on whom a great deal depends, will say here. Everything will be resolved on the afternoon of May 14.

It seems that the aspiration to lay it on thick has become a common Russian problem today. However, we confirm with satisfaction: Yesterday's many gloomy forecasts for today are in the habit of not fully coming true. Possibly, nothing terrible will happen to the Fund even without Igor Nikolayev and his documentation. First, however, such an outcome would be unfair, and second, it really would be sad to exchange a candy that one already knows is sweet for one that is (as yet) unknown.

Nikolayev's Fund really is good. It is designed according to principles, well understood by our Western colleagues. This is a big plus, considering our present aspiration for integration with Western science. The system of requests for grants, the system of authorizing grants, and so on, are in many ways analogous to that which is accepted throughout the world, but are adapted to our society, to our way of carrying out budget documentation, to our items of expenditure. An infrastructure, ensuring the continuous operation of a grant system in our country, and not just for the NFFI, is stipulated for the future. There is also a procedure which allows the grant system to operate right now.

A new system of expert analysis is applied, similar to that which exists in the U.S. National Science Fund, in which four independent experts rate a given request on a point scale, and then these ratings are put together and the final decision is made on their basis.

Although one hardly ever hears about it, the high degree of clannishness of our science is well known. Various scientific schools sometimes fight among themselves not so much with arguments of logic, as with arguments of their influence in higher echelons.

Therefore, even the most remarkable expert analysis system may turn into an unworkable fiction, for instance, if one particular clan seizes all four seats in a given scientific field. It will be even worse if the fighting schools share the seats equally: Then it will be hard to find the mathematical average.

In sociology this is known as a "conflict of interests." Nikolayev's version of the NFFI provides for a whole system of steps to overcome it. The complete openness of expert analysis is the most powerful means, and one of the conditions for the NFFI's activity. Right now the economics department of Moscow State University is developing an effective statistical information system, which will immediately tell who is who in the world of experts. It is even proposed to single out a special day, when the Fund will consider the claims of the dissatisfied. The involvement of foreign experts, who will more quickly ascertain the true level of the work, will also play a large role in overcoming the conflict of interests.

One way or another, the Fund has been created and there is a great likelihood that the first pancake will come out without lumps.

Draft 'Law on Russian Academy of Sciences' Criticized

927A0202B Moscow *RADIKAL* in Russian
No 17, 15 May 92 p 9

[Article; date and place not given: "Academy Wants to Define Its Status, But Implies The Status Quo By This"]

[Text] On 12 May, the presidium of the RAN [Russian Academy of Sciences] discussed the draft "Law on the Russian Academy of Sciences" for the third time. This unique document was drawn up by the RAN Institute of State and Law and submitted to the presidium by Academician Vladimir Kudryavtsev, a man whom to this day people call, some in jest, some seriously, "the country's main lawyer."

In short, the essence of the draft law is that the academy, as "the higher all-Russian scientific self-managing organization," receives money from the state for the conduct of roughly half of all domestic basic research and distributes it among the institutes which belong to it. In this regard, the buildings, equipment, and other property of the academy are declared its property, not subject to alienation, and essentially no one, least of all the Supreme Soviet, can control the actions of the academy.

Wicked tongues are interpreting this law somewhat differently: The presidium of the RAN, they say, is declaring itself to be national property, which is not subject to alienation from the academy.

Thus, we are faced with yet another attempt by the higher academy officials to get out of the dilemma, into which it was driven by its thirst to combine the incompatible: to remain an elite club of scientists and simultaneously to control a large part of the state scientific budget. Judging by everything, the attempt does not have many chances of success. Whereas under Soviet power the ambiguity of status and, correspondingly, the lack of clarity in questions of ownership was perceived as the norm, now, when we, albeit slowly and painfully, are entering the regime of the "legal state," the academy cannot get by without having the appropriate status.

It can choose between only two statuses, a state institution or a public organization. However, the academicians can in no way do precisely this. Having numbered themselves among the state organizations, they receive the opportunity, as before, to distribute finances for the conduct of basic research. However, according to Russian legislation all the constituent documents of the RAN (Statutes, etc.) must then be approved by the appropriate ministry. Indeed, even the elected president is not too tied up with state status: The state, in giving money, should have the possibility of controlling its expenditure, i.e., it should have the right to appoint and dismiss the head executive.

Things are even worse with the status of a public organization. Then not only are the state allocations hanging in the air, but there is also the question of the internal interrelations between academy members (academicians and corresponding members) and the scientific associates of academic institutes who, according to the RAN Statutes, while not members of the academy, are still included in its structure. In this case, the law dictates the complete equality of all members of a public organization and our customary self-authorized policy of apartheid, in which the "white" minority manages the lives of a "black" majority, becomes illegal.

For more than one and a half months the presidium has been struggling with the problem: Life without status is becoming quite impossible, but there is not a single status appropriate for the academy. And now there is the draft "Law on the Russian Academy of Sciences." Regardless of the fact that such a respected institution drafted it, and such an eminent lawyer presented it to the presidium for consideration, this document abounds with legal absurdities. Having stated in the preamble the need to establish a status, in the text itself the law... does not stipulate any status for the academy whatsoever. Yet the definition "self-managing organization" has no legal meaning whatsoever and leaves the main question open: To which laws of Russian legislation will the RAN be subordinate in the future?

The problem of intellectual property was also solved very interestingly. On the one hand, the rights of authorship over objects of intellectual property belong to their creators. On the other, the right to use these objects, as well as to receive compensation for them, belongs to the organization with whose money they were created. It

does not quite make sense: What remains for the creators, besides the right of ownership?

In general, not everything with property is going well in the draft. As everyone knows, the General Meeting of the RAN resolved to consider the RAN property to be federal property, but in the draft the buildings, equipment, and so on belong to the academy. Etcetera and so forth.

Yuriy Lebedev, member of the executive committee of the conference of RAN scientists, one of the few who has access to certain meetings of the RAN presidium, believes that the document in general was written at an extraordinarily low juridical level. "It is hard to presume," he says, "that people familiar with the drafting of legal acts wrote it. For instance, here is one of the blunders. Article 1 states that the RAN functions 'on the basis of existing law, of other legislative acts, and of the Statutes, which are passed by the RAN General Meeting.' In other words, the legislators refer for interpretation of the law to a secondary, sublegal act, which is what the RAN Statutes are. This is legal nonsense: The higher law does not appeal to the lower."

Of course, a "Law on the Russian Academy of Sciences" is needed. The academy's legal status is too shaky right now. A status is necessary. Yet the main thing that is needed, about which there is not a word in Kudryavtsev's draft, is a legal reinforcement of the interrelations between members of the academy and those who, while part of its structure, are not members of it.

Saltykov Interview on Plight of 'Science Cities'

927A0211A Moscow POISK in Russian
No 20 (158), 9-15 May 92 p 6

[Interview with Minister of Science, the Higher School, and Technical Policy of Russia Boris Saltykov by POISK correspondent Yelizaveta Ponarina under the rubric "What Is Science To Be Like?"; date and place not given: "Russia Alone Is Paying"—first two paragraphs are POISK introduction]

[Text] Chernogolovka, Dubna, the Academy Campus near Novosibirsk, Troitsk—just recently these names were associated with the special world of the elite of the scientific community. During the 1960's people were amazed by their way of life, during the 1970's they envied it, during the 1990's it is evoking pity and sympathy.

Did the age of "reserves" for scientists really prove to be so short and is the lot of these reservations of big science henceforth quiet extinction? Today at the request of our correspondent Yelizaveta Ponarina Minister of Science, the Higher School, and Technical Policy of Russia Boris Saltykov reflects on this theme.

[Saltykov] Let us begin with the fact that I do not agree with the picture that you have painted—in these cities science feels just as bad as in others, in the same St.

Petersburg or Moscow. Well, for example, the Scientific Research Institute of Physical Chemistry imeni Karpov is located within the Sadovyy Ring Road. It was an elite one in the Ministry of the Chemical Industry, in essence the center of basis research on its themes. But money of the department made up 80 percent of its budget, and no sooner had the ministry ceased to exist than it found itself in a most serious position, although it was in no way connected with the exclusiveness of science cities. Science is now having a bad time everywhere, everywhere the reasons are different, but the essence is the same—there is not enough money. The structural reorganization of the economy and industry is under way, and science, being by its nature conservative, is lagging behind them and is suffering terribly because of this.

[Ponarina] Especially if prior to this it was in a privileged position....

[Saltykov] Do you mean Dubna, its status as an international research center? Yes, the Joint Institute for Nuclear Research was established to a considerable degree for ideological reasons. The goal was not simply to unite nuclear physicists, but also to unite them on the territory of the great socialist power.... And now we have to accomplish simultaneously two tasks: to preserve the Joint Institute for Nuclear Research as a scientific institute and as an international scientific center.

[Ponarina] Does Russia indeed need this?

[Saltykov] Not only Russia, but also the other countries of the CIS. Today in place of the USSR in addition to Russia Ukraine, Belarus, Kazakhstan, Moldova, Azerbaijan, Armenia, and Georgia have become plenipotentiary members at Dubna. All have joined as equal members. True, only Russia is paying dues. The others for the present do not have the funds, and they have requested deferment until the end of the year. Many scientists from these countries are simply working there, in spite of all the perturbations that are occurring in the former Union. They, apparently, believe that reason will get its way—and big science will again be needed.

[Ponarina] Nevertheless Russia is also in dire straits. I remember that last year it never paid its currency dues—there was no money at all. Will it be the same this year?

[Saltykov] We hope that it will be better. But last year Dubna during the last quarter actually lived on the assets of a partner. United Germany paid for its membership, its currency was converted into rubles, and this made it possible to pay people wages with allowance made for indexing....

[Ponarina] Why not repeat this move?

[Saltykov] Our partners for the present have decided to limit themselves to semiannual payments. And then, they say, we will see.... It is a matter of the radical change of the structure of research and technical supply of the institute. In their opinion, at Dubna, as in all our science, a significant share of the expenditures goes for nonpriority

programs. Today they are off to the side of the front line of basic research. The second thing is that at the Joint Institute for Nuclear Research Russian scientists are working under permanent labor agreements, while in the practice of foreign centers there are contracts. For half a year, a year, two years. In our country you can quietly putter over something for decades behind the backs of the leaders. But foreign scientists do not want to keep such researchers. The financing of Dubna takes place, as in CERN [the European Council for Nuclear Research], according to the principle of a specific fraction of the gross national product of the member countries....

[Ponarina] Judging from your tone, you are inclined to accept the point of view of our foreign partners....

[Saltykov] There is a large grain of truth in their demands. The institute at Dubna has objectively grown old. The personnel have grown old, the installations have become obsolete—after all, the main accelerator of Dubna—a synchrophasotron—is more than 30 years old. Voices are constantly being heard that in the level of the experimental base it is hard for Dubna to compete with CERN, Grenoble, or scientific centers of the United States. Therefore, the key thing is that a new program of the building of the experimental base is needed. But the tragedy of Russia is that, while understanding all this, the country can now do hardly anything for science. We will not come up now with the billions in expenses, but installations in “big science” are of precisely such a scale.

Nevertheless, responding to your question, I cannot be on anyone's side. And I am trying to evaluate the situation objectively. This year it is a critical one.... Reconstruction—and not only technical, but also structural: a new experimental base, the adjustment of priorities, the attraction of young fresh forces—is needed. A certain, how could I put it a little more precisely, spiritless behavior of the board of directors of the institute is being superimposed on all this. This is connected with the fact that this year the reelection of the director is taking place, and everyone expects changes. The old board of directors is not making major plans. Whoever will come here should realize all the gravity of the problems that he will have to solve. And he should have considerable courage for resolute actions. But, on the other hand, this should be a person, whom both Dubna and the international community will accept as a scientist, as a leader....

Moreover, difficulties have arisen in the interrelations of the Joint Institute for Nuclear Research with the city. Earlier Dubna had the informal status of an extraterritorial center in Russia. The institute had its own territory and was not taxed, other privileges also existed—for example, the Joint Institute for Nuclear Research did not pay income taxes. Now, when everything has changed and the USSR does not exist, a new agreement of the Joint Institute for Nuclear Research with Russia is needed. That is, with the country of residence. And the

differences with the mayor's office are logical: After all, if the city does not receive taxes from one of its largest facilities, its economy will collapse. Earlier all these concerns hung on the neck of the Ministry of Medium Machine Building, which itself paid for municipal services, itself carried out construction.... The present successor of the Ministry of Medium Machine Building—the Ministry of Atomic Energy and Industry—is in serious condition, and the country is giving up the practice, when departments maintain a city. The city should live by means of taxes from the enterprises that exist on its territory. In short, a new agreement with Russia is now being prepared.

[Ponarina] Will its budget become the "neck," on which the city of Dubna will sit?

[Saltykov] No. Russia will pay the portion that should be taken from it as a member country. Just like Poland, Bulgaria, and Hungary. It is another matter that these countries do not want to pay specifically our taxes—for example, the retirement tax.... After all, their scientists will retire there, not here. No one is to blame for this conflict of interests, life has simply become different, and it is necessary to master it according to new rules. For example, the Joint Institute for Nuclear Research always had additional revenues, owing to the fact that taxes were not deducted. Now this will hardly succeed.

[Ponarina] And what will happen with currency?

[Saltykov] Russia, I think, all the same during the year will pay. At times it is possible to come to a gentleman's agreement—instead of currency to contribute some valuables, based on world prices: For example, in Dubna there is a motor pool of Czech Tatra. This is a part of the currency contribution of Czecho-Slovakia. On our part we are trying to see to it that the financing of Dubna would take place by a separate line....

[Ponarina] And will everything then turn out, roughly speaking, will the problem of the international center in Dubna be "resolved" of its own accord?

[Saltykov] No, it will not be resolved. However sad it is, we will have to think about a reduction of staff. Dubna does not differ in any way from several of our giant institutes, where a portion of the directions are today a long way from world priorities. They will have to be cut off, otherwise no money will be enough, the attention of the world community will weaken, and the Joint Institute for Nuclear Research as a recognized international center will simply languish. Of its own accord. I would not want this—all the same in Dubna there are excellent conditions for good work. An ecologically clean site, the Volga, an hour's drive to an international airport, satellite communications, a splendid collective with enormous traditions.... And if it has now found itself not ready in everything for the new economic conditions, one must not hinder it from completing the search for new forms, new mechanisms of survival. Is it difficult? Is

it unusual? What is to be done—today at the "reserves" it is also possible only to dream about a quiet and peaceful life.

Commentary on Belorussian Academy of Sciences Elections

927A0211B Moscow POISK in Russian
No 20 (158), 9-15 May 92 p 6

[Article by POISK correspondent Larisa Sayenko under the rubric "On Assuming Office" (Minsk): "'I Do Not Envy Myself,' Academician Leonid Sushchenya, the Just Elected President of the Academy of Sciences of the Republic of Belarus, Said"]

[Text] Indeed, the fate of the president of the academy is now akin to the fate of the captain of a sinking ship, whose only "privilege" is to be rescued last. In recently years much was said about the decline of the prestige of science in general and the scientist in particular, about aging, and about the decline of the level of achievements. But now it is no longer a matter of improvement—Belorussian science, as, most likely, any other science within the CIS, is now thinking about survival, about the preservation of the Academy of Sciences in principle. That is why, having gained a victory in the election, the new president called his triumph "a deadly trick."

On the eve of the election in academic circles there was no complete certainty of anyone's victory. Well-informed people predicted: "There will most likely become president..." and one of the four candidates followed: Academician Leonid Sushchenya—academician secretary of the Biological Sciences Department of the Academy of Sciences of the Republic of Belarus; Academician Ivan Lishtvan—an ecologist, vice president of the Academy of Sciences of the Republic of Belarus; Academician Radim Garetskiy—director of the Institute of Geochemistry and Geophysics of the Academy of Sciences of the Republic of Belarus; Academician Vladimir Pilipovich—director of the Institute of Electronics.

The previous president—Academician Vladimir Platonov, who resigned—did not come to the election. He as before is giving lectures as one of the universities of the United States. After the acceptance by the presidium of the resignation of the president a campaign of belated reproaches meant for him, particularly for the lack of patriotism, was launched in the republic. Platonov, probably, is actually to a greater degree a scientist than an administrator. Most likely the post of president was a fair burden on him. Nevertheless, his present status is a tribute not only to exotica (America, as is known, likes presidents), but also to scientific authority and is recognition of Belorussian science.

The present pre-election distribution of forces for the first time was unpredictable. Not only members of the presidium, but also all the academicians and corresponding members of the Academy of Sciences, as well as the members of the general meeting and the exponents

of the views of the "masses" took part in the secret ballot. In recent times in the absence of the president in essence all power was concentrated in the hands of Ivan Lishtvan, a very experienced administrator and financier, who knows perfectly all the budgetary and legislative nuances of the academy. Pragmatists gave preference to his experience and enterprise. But whether the fact that every manager has ill-wishers or the fact that owing to objective reasons the decay precisely fell to the period of the "rule" of Lishtvan, had an effect or the personal qualities of the candidate (he tends to be hot-tempered) played a role, his candidacy took only the second number of votes. This did not help Ivan Lishtvan to keep even his former post: He moved from among the vice presidents to the chair of an academician secretary.

In recent times another candidate for president, Radim Garetskiy, displayed exceptional energy: energy in the sphere of science, politics, national revival, and even journalism. He became one of the active members of the Belorussian Social Democratic Gromada (an officially registered party) and the defense of the idea of Belorussian national revival and the Belorussification of Vilnius and Vilnius Kray. Moreover, Radim Garetskiy is a representative of one of the most elite branches of the Belorussian scientific and cultural intelligentsia. Not having become the first person at the academy, he all the same took the honorable post of vice president.

The candidacy of the second vice president was far more unexpected. Mikhail Vysotskiy, general director of the Minsk Motor Vehicle Works, became him. And although he has rather high titles—academician, winner of the USSR and Belorussian SSR State Prizes, the holder of orders, and so on—in academic circles earlier they could not have thought about such a choice. The current president of the academy probably had not without reason the reputation of a man who stubbornly defended his point of view contrary to the opinion of the majority. All right, such a scientist as Leonid Sushchenya could venture some free-thinking. He, incidentally, was the only person in the republic to be recognized by "the big academy" not for his position, but for his scientific contribution. Without being president, Leonid Mikhaylovich was elected an academician of the USSR Academy of Sciences and later of the Russian Academy of Sciences. The supporters of the new president also stress his agreeability in relations and his cultural level.

The election did not become a competition of programs or ideas, but rather of personalities, for none of the candidates formulated a program of the rescue of the academy in the exhaustive sense. Each one put his trust in the government, the Supreme Soviet, the law on science, financing, as well as scientific collaboration. In particular, the necessity of a union of the presidents of the academies of the states of the CIS was spoken about. The continuity of academic traditions was repeatedly stressed. In the future reform within very cautious limits is allowed. Leonid Sushchenya spoke skeptically about

universal restructuring, believing that "normal, healthy conservatism, the erosion of which is fatal," will help the academy to remain intact.

And there is another detail. In spite of the fact that all the people who ran for the post of president and vice presidents by nationality are Belorussians, only two words in Belorussian were heard: in the campaign speech of Radim Garetskiy, leader of the national revival. Translated into Russian they mean "Otchizna" [native land] and "snasibo" [thank you].

New President of Belorussian Academy of Sciences Interviewed

927A0211C Minsk 7 DNEY in Russian
18-24 May 92 p 2

[Interview with President of the Academy of Sciences of Belarus Leonid Mikhaylovich Sushchenya, academician of the Academy of Sciences of Belarus and the Russian Academy of Sciences, by Anatoliy Akantinov; date and place not given: "Leonid Sushchenya: '...It Is Unpardonable for Any State To Destroy Intelligence'"—first two paragraphs are 7 DNEY introduction]

[Text] At the session of the general meeting of the Academy of Sciences of Belarus from among the four candidates the 10th president of the Academy of Sciences was elected on the first round of voting with a large lead over his rivals.

Get acquainted: Leonid Sushchenya, born in 1929 in the village of Malye Luki of Baranovichskiy Rayon, a Belorussian. In 1953 he graduated from the Belorussian State University imeni V.I. Lenin, he is a zoologist, a doctor of sciences, a professor, and twice academician—academician of the Academy of Sciences of Belarus and of the Russian Academy, prior to the presidency he held the position of academician secretary of the Biological Sciences Department of the Academy of Sciences of Belarus.

[Akantinov] Leonid Mikhaylovich, what main task now faces the president?

[Sushchenya] All the misfortunes, all the difficulties, which are characteristic of the life of our society, have also affected the state and the fate of the Academy of Sciences of Belarus. The problem of bread and the problem of life at this moment have come to the forefront. Given such a situation art, culture, and science, that is, what, it would seem, it is possible to postpone until later, are inevitably receding as if into the background. This is a mistaken opinion, for if today we neglect scientific and technical progress, catching up will prove to be extremely protracted, expensive, and painful. Take the fate of genetics, cybernetics.... Therefore, today the most important task of the president, the presidium of the Academy of Sciences, and the executives of other departments, which have a scientific potential, is not to let it go to ruin. It should serve the development of the republic.

[Akantinov] Can Belarus survive by means of its own scientific potential?

[Sushchenya] I would not speak that unequivocally. The scientific potential of the republic is great. It is at a rather good level, but should not be perceived as a national tool for the accomplishment of each and every task. It should be regarded as a means, which can adapt and enrich the accomplishment of practical tasks with allowance made for world experience and our own scientific achievements and developments. Science is international.

There should be no self-confidence which borders on national narrow-mindedness. Unfortunately, today many contacts of Belorussian scientists with colleagues from the former union republics, first of all from the Russian Academy, are being broken or have already been broken. This is a dangerous process, for it leads to self-isolation, and it is destructive.

[Akantinov] Tell me about the structural changes that are taking place at the academy.

[Sushchenya] Two trends have emerged. The first is the simplification and splitting up of gigantic structures, the reduction of the administrative staff, and the elimination of intermediate units which complicate work. The fact that instead of four vice presidents only two were elected can serve as an example. The very large Institute of Nuclear Power Engineering in the Academy of Sciences has been divided into three independent institutes. The second trend is the increased responsibility of the departments of sciences for the work of the institutes that are subordinate to them. It is necessary to shift the considerable center of gravity to the institutes, so that they would become more independent and would be the masters of their scientific direction.

Such structural changes as the appearance of various kinds of additional structures: joint ventures and small enterprises, temporary creative collectives, commercial associations..., are also occurring.

[Akantinov] Is it possible to speak today about the commercialization of science?

[Sushchenya] Certainly. Scientific developments were not always introduced here, now precisely commercial structures are "seizing" them. True, there is the question of the correctness of the use of the academy's scientific and technical base and research results by these structures. It is necessary that these commercial structures and small enterprises replenish science, owing to which they, strictly speaking, produce their "commodity." Unfortunately, thus far we have not generalized this experience and have not analyzed it.

Today, when the market is being introduced under strong pressure in the old systems of the national economy, it is impossible to understand clearly where the rational thing, which it is necessary to support in the science-commerce system, is and where it is necessary to eradicate swindling.

[Akantinov] Are you, probably like many people, experiencing a financial "famine"?

[Sushchenya] We are on partial budget financing. It is enough for only 60 percent of the activity of institutes. It is necessary to earn the rest ourselves, otherwise the collapse of the academy will begin. We have already lost 1,500 people—this is a large loss. In Ukraine, for example, according to the latest data, up to 10 percent of the national income will be allocated for science. Here for the present about 3 percent has been specified for culture. We believe that it would be correct, without directing attention to the top Ukrainian "level," to allocate if only 5-6 percent of the national income for science. It is necessary to realize that scientists are the intellectual potential of the nation, which it is necessary to protect and guard. It is enormous work and enormous expenditures to train a capable scientist, and it is unpardonable for any state to destroy such intelligence.

[Akantinov] Leonid Mikhaylovich, what qualities do you value most of all in people?

[Sushchenya] Adherence to principle, respectability.

[Akantinov] What can you say about your interests, passions?...

[Sushchenya] I am a person of the traveling type, for 12 years I traveled the seas and oceans. This most likely laid in me the longing for expanses, for movement....

[Akantinov] And what is your sign?

[Sushchenya] Scorpio.... At one time I had a passion for poetry. My favorite poets are Blok, Yesenin, Akhmatova, and Mandelshtam. Now I am drawn to prose, to modern stories and novels. During my leisure time I like to read a good detective novel. I collect books....

[Akantinov] And in conclusion about your family....

[Sushchenya] My wife works at the Academy of Sciences, she is a hydrobiologist, a doctor of sciences, and a professor. My daughter graduated from the geography faculty of the Belorussian State University, but is now unemployed. She is looking for a job. I have a grandson, Serezhka, a first-grade student—my loved one....

Commentary on U.S. Working Group on 'FSU' S&T Reorientation

927A02023A Moscow RADIKAL in Russian
No 17, 15 May 92 p 1

[Article by Valeriy Kamnev: "What They Want From Us In Return for Aid"]

[Text] Recently, a special working group consisting of roughly 120 American science and engineering specialists prepared a report titled "Reorientation of the Research Potential of the Former Soviet Union" for Alan Bromley, assistant for science and technology to the President of the U.S.

Without estimating the overall sum of expenses which aid to former Soviet science requires, the authors of the report propose a comprehensive strategy for such aid and, in particular, indicate the requirements which, in their opinion, must be made of us (of the administrative and scientific structures) so that the efforts of the U.S. and other developed countries are not spent in vain.

It is noteworthy that it is a question in the report not so much of Russian science (although, naturally, the basic stress was placed on it), as of the science of the former Soviet Union. The authors even use the abbreviation FSU [Former Soviet Union] which, it seems, may be even more widely used than CIS in the future.

The basic meaning of the proposed program reduces to integrating former Soviet science into world science: the giving by Western funds of grants to FSU researchers, participation in joint research, the financial participation of the West in FSU programs (in which it may be interested), information support, grants for holding problem-oriented conferences, joint conferences, the development of electronic mail and other elements of the telecommunications infrastructure, etc.

The report devotes basic attention to the Moscow International Center for Science and Technology, which is already being created, whose basic goal is to support researchers specializing in the field of nuclear research (basically in military programs).

Emphasizing that the 25 million dollars allocated to the Center by the U.S. obviously does not suffice for the entire reorientation program, the authors of the report see it as kind of a main (but not the sole) agency, from which the West's basic "catalytic forces" for saving and developing the basic science of the FSU will emanate. The Center may also play the role of "matchmaker" between researchers, sponsors, and the corresponding projects.

In addition, the report authors believe, the role of an ordinary intermediary between funds and researchers does not conform to the seriousness of intentions of the governments financing it. Therefore, the working group recommends creating a director's fund under the Center, to which a certain share (possibly a fourth) of all sums going through the center will be deducted. The Center will distribute the money of this fund itself.

The development of the basic and applied sciences of the FSU, the reorientation of its military research, in short, the entire program of Western aid will be effective only if a number of reciprocal steps are taken on the part of the governmental and non-governmental organizations of the FSU countries. These steps include lessening the regime of secrecy for researchers working on the creation of armaments so that they may freely interact with Western colleagues; the financing of foreign visits; releasing Western grants from taxes, etc. The authors of the project consider the most rapid passing of a package of laws on intellectual property to be one of the key conditions for Russia and other countries of the FSU.

The reader may find a detailed description of the report in the second issue of the "electronic magazine," VESTNIK RAN (see RADIKAL No 13, 1992).

New Mechanism for Regulating S&T Development

927A0203B Moscow RADIKAL in Russian
No 17, 15 May 92 p 11

[Article by Academy of Technological Sciences Vice-President V. Bryunin and advisor S. Menshikov: "New Mechanisms for Regulating the Development of Science and Technology"]

[Text] The state of Russian basic and applied science, the reduction in demands on technologies, the growth of all kinds of expenses, and ecological violations in industry require the accelerated development and implementation of new mechanisms to make developers more active in creating, and consumers more active in broadly applying technological innovations.

Proposals in this area have been drafted by the Academy of Technological Sciences [ATN] of the Russian Federation in the form of a Conception for the technological development of Russia. We offer the most essential elements of the Conception, prepared by V. Bryunin, vice-president of the ATN, and advisor S. Menshikov.

Privatization

The activity of proprietors, producing goods under market conditions, is impossible without transferring the rights of ownership of the means of production to commodity producers. In the scientific sphere, these are the collectives of scientific organizations. Granting these collectives of the right of ownership of the state property being used by them today—buildings, installations, equipment, land—requires making changes in the Program for Privatization, in existing legislation, and in other normative acts. It is necessary to define the forms of scientific activity where privatization is inexpedient (in defense research and the basic sciences) and where state (public) scientific organizations should be preserved, with the appropriate status reinforced by law.

In the remaining areas of scientific activity, primarily in applied science, we should implement privatization with the preferential creation of closed-type shareholder societies. To redistribute part of the income from the activity of scientific organizations into the social sphere, is it expedient to allocate part of the value of the privatized property to local (municipal) bodies of power while preserving the controlling block of shares for the scientific collectives.

Privatization according to the proposed scheme should not be implemented in the form of a free transfer or sale to individual shareholders of part of the shares of stock according to quotas, as stipulated in the Program for Privatization, but by selling the entire value of the means of production or the controlling share to the collective of

the scientific organization on long-term credit with repayment over the course of five-10 years. Such credit should be issued by a state bank at a reduced percentage rate and should be repaid at the expense both of amortized deductions for renovation, as well as profits and the employees' own funds. It goes without saying, it is necessary when selling to make an inventory of the salable resources and to re-assess them in order to ascertain the current market value of the objects of privatization.

In case a scientific collective rejects privatization in the proposed procedure, it may be carried out according to the regulations of the Program for Privatization, the Law on Privatization, and other normative acts.

The significant number of new proprietors' collectives, arising as a result of such privatization, should make the technology market noticeably more active, and in the collectives themselves it should significantly increase responsibility for the results of scientific activity.

Industrial and Intellectual Property

The present situation with industrial and intellectual property is leading to its squandering, its inefficient use, and its virtually free transfer, including to foreign partners.

We propose securing innovations, created in the course of the last 10 years, for the developer organizations and granting them general licenses for utilization of the results. These general licenses should be subject to payment and should stipulate the possibility of private implementation of the results of scientific developments, as well as the right of foreign patenting and the sale of licenses to other users, including abroad.

We should legislatively strengthen the right to use the results of scientific developments in the form of the acquisition by consumer enterprises of various kinds of licenses in conformity with world practice. The consumers' responsibility for illegal use of the inventions or violation of the terms of the licenses should also be stipulated. Inventions newly created by scientific proprietor-collectives should be officially registered by way of the acquisition of patents, copyrights, etc.

Tax Policy

The tax system existing today does not in practice take into account the special conditions of creating and using technological and other inventions. These special conditions lie in the originality of the inventions, which are created at one time and the realization of which often requires significant expenditures. Up to now the state took the financing of these expenditures upon itself, while the consumer received only the result (a new technology, design, material) at the cost of production without taking the expenses of scientific research and design work into account.

Changes in the tax system should provide for privileged taxation both for the developers of new technologies, as

well as for their consumers, so that the application of new and traditional technologies would at least be equally advantageous in the period of assimilating the innovations. Tax penalties are also needed for the users of obsolete, including ecologically dangerous and resource-intensive technologies. The introduction of tax privileges and penalties requires the development of periodically revised lists of progressive and obsolete technologies for various sectors of industry, drafted by groups of independent experts and approved at the governmental level.

Investment Policy

Problems of taxing the profit obtained by enterprises and scientific institutions from the use of progressive technologies are closely related to the problems of investment policy. This is stipulated by the state's rejection of centralized capital investments for the development of industry in the majority of sectors and by the preservation of centralized budget capital investments in sectors which provide for the development of the production infrastructure (medicine, education, culture, etc.), the support of the country's defense capability, and the development of the basic sciences.

It should be taken into account that today investment processes have slowed down considerably due to the overall drop in production. Evidently, a reanimation of production should be expected no sooner than in three-four years. It is important that this reanimation be accompanied not by a simple replacement of worn-out equipment, but by the technical re-tooling of enterprises on the basis of new progressive technologies. Whereas in the framework of state centralized investments this task can be solved traditionally, for all other areas definite regulating decisions are required. Since serious technological changes are fraught with large expenditures by the consumers of new technologies, it is necessary to resort to bank credits, granted by commercial or state banks, mainly Promstroybank. In this case, it is necessary to demarcate the credits being granted into innovation and simple investment credits, with the corresponding privileges in terms of time periods, amounts, and percentage rates.

Financial and Credit Policy

The creation of new technologies and their implementation require, as noted above, significant one-time expenditures. The reduction of amounts of direct state investment for these purposes presumes the broader use of commercial bank credits. This measure requires active regulation on the part of the Central Bank of Russia which, taking into account the government-approved lists of new progressive technologies, should issue goal-oriented privileged credit resources to commercial banks and should ensure effective control over their use.

The commercial banks, in turn, are obliged to issue the corresponding credits on a privileged basis both to scientific organizations which develop new technologies, as well as to the enterprises which are consumers of technical re-tooling. Giving credit at reduced percentage rates requires a reduction in the corresponding tax rates on the incomes of commercial banks, at least up to the level of generating equal income as compared to ordinary credits.

The creation as a result of the privatization of a large number of scientific organizations and proprietor-enterprises leads to a need on their part to form significant working capital. Funds obtained using property as security may act as one of the sources for such capital. This new form of banking activity for us requires the creation of a network of mortgage banks, issuing medium- and long-term loans on the security of the real property of the scientific developer organizations and of the enterprises that consume technological innovations at a low percentage rate. It also requires state documents on the assessment of the property being offered as security, a procedure for compensation upon failure to repay the loan, for overdue payments, etc.

Thus, it is necessary through legislation to make appropriate changes in the Law on Banks in connection with the activity of mortgage banks, in tax legislation in connection with privileged taxes on banks and on the innovation activity of enterprises and scientific organizations, as well as to develop tax legislation concerning the property of enterprises and proprietor organizations.

Foreign Economic Policy and Foreign Investments

The overall drop in production and the lack of enterprises' interest in assimilating technological innovations will lead in the near future to a further reduction in the export of science-intensive production, including machines, equipment, and instruments. Raw material and fuel resources will be the basic items of export. For Russia, this signifies the complete loss of world markets for technically complex science-intensive production and her conversion into a raw-material adjunct to the developed countries.

At the same time, Russia has a colossal, but virtually unused source of currency receipts in the form of an accumulated pool of progressive technologies. It could significantly improve the structure of our export and ensure significant incoming currency funds for the country.

The world has formed a market for science-intensive technologies, the effective exchange of which enables various countries to resolve the tasks of industrial development on the basis of international specialization and the exchange of the results of scientific research. For Russia's entry into this market and for the improvement of the structure both of export, as well as import, it is necessary to implement a number of measures of both a legislative, as well as financial nature.

First, this relates to stimulating the export of technological innovations and the trade in and exchange of licenses for the results of scientific development work through the use of taxes and customs tariffs. The involvement of thousands of scientific organizations which develop new technologies and enterprises which consume scientific output in foreign economic activity makes it possible, on the one hand, to strengthen scientific organizations financially due to the influx of currency resources, and on the other hand, to ensure the broad use of the best foreign technologies in industry.

The creation of joint enterprises—of developers and consumers of new progressive technologies—should especially be encouraged. Privileged taxation of these enterprises will make it possible not only to increase the export of technologies, but will also ensure the creation of new and the technical re-tooling of already-existing production capacities, will expand the assortment, will increase volumes, and will improve the quality of production.

Privileges for foreign investors who put their money into joint enterprises should stipulate the priority of new technologies.

The creation of joint enterprises with the participation of Russian entrepreneurs in other states should become a special form of joint activity for the effective use of technologies in foreign economic activity. Such enterprises, created for the joint use of progressive technologies on the condition of the privileged entry of profits thus obtained into Russia, would also significantly improve the overall currency balance. Such joint enterprise requires the introduction of amendments to the existing tax legislation in connection with the complete removal of the restrictions on the amounts of taxable sums.

Conversion of Defense Technologies

A basic source of progressive technological innovations is defense science and industry. The possibilities for their broad use in the national economy and in the foreign economic sphere are limited by their level of secrecy. To solve this problem, we propose taking an inventory of defense technologies to reveal which of them have dual applications, and to declassify for use in civil industry those which are not important for purposes of defending the country. It is necessary to reinforce in legislation the procedure for transferring defense technologies into civil industry, taking the above conditions into account. Considering that the scientific organizations and enterprises of the defense complex, as well as scientific organizations working on basic research, should not be subject to privatization, we should allot to them the task of controlling the use of dual-purpose declassified defense technologies in the civil sphere in the form of licensing for the use of such technologies, including in their sale abroad.

National Program for the Socioeconomic Development of Russia Based on Progressive Science-Intensive Technologies

The conception of the technological development of Russia contains the basic directions and proposals which must be implemented in order for the country to get out of the crisis and in order to turn her into a modern, developed, industrial state on the basis of using highly efficient technologies.

To implement these proposals, it is necessary to draft a National Program for the Socioeconomic Development of Russia, which will ensure Russia's inclusion within the next 10 years among the leading technologically developed countries of the world.

Implementation of the program should provide for the solution of the following problems:

The creation of mechanisms for stimulating the development and assimilation of new progressive technologies;

The creation of a modern scientific and technological base, supporting the practical assimilation and circulation of new technologies;

The creation of an infrastructure in the area of education and the information sciences, supporting the reproduction and circulation of progressive technologies;

Raising the people's standard of living, a qualitative change of the social sphere of society, and saturation of the market with everyday consumer goods and food through the use of progressive technologies;

Ensuring ecological safety and protection of the population's health;

Integration with the world community on the basis of an intensive mutually profitable exchange of progressive technologies.

Unification of the efforts of state bodies of management, including the legislative and executive power structures, as well as of the scientific community, including the Russian Academy of Sciences, the Academy of Technological Sciences, and sectorial academies, of other scientific associations, of specialists at higher educational

institutions, and of representatives of various forms of ownership in the production sphere, is necessary in order to solve these problems.

Determination of the most important directions for the country's socioeconomic development on the basis of shaping national interests enables us to reveal the most topical directions of development and to provide for a concentration of resources in them via the implementation of the mechanisms, set forth in the Conception for technological development.

In order to coordinate the course of work to draft and implement the Program, it is necessary to create a State Coordinating Council (GKS) under the president of the country from among representatives of the Program's basic developers with the broadest authorities. The decisions of the GKS should be supported by normative acts.

The main tasks of the GKS should be: to determine the basic directions for the country's scientific and technological development, and to support the substantiated formation of specific state goal-oriented scientific and technical programs and the rational use of the state budget funds allocated for this, as well as the accumulation of the free resources of its participants and executors of all forms of ownership at all levels of production and management.

Intersectoral, sectorial, and territorial programs may be implemented in the framework of the National Program, taking the specific features of the development of sectors and regions into account.

Implementation of the Program will make it possible in the next three-four years to obtain an economic effect of at least 150-180 billion rubles just due to the rational use of state budget resources, the involvement of various scientific and production executors in program measures, and the enlivening of the production sphere.

The social climate in the environment of scientists and the technical intelligentsia will improve significantly, the country's scientific and technical potential will be preserved and multiplied, the brain drain will be averted, the population's standard of living will rise, and real conditions will be created for Russia's rebirth as a developed democratic state, occupying a worthy place among the leading countries of the world.

Kravchuk Decree Establishing Site for Interstate S&T Council

927A0212C Kiev *RABOCHAYA GAZETA* in Russian
21 May 92 p 1

[Ukase of President of Ukraine L. Kravchuk of 16 May 1992 "On the Implementation of the Agreement on Interstate Scientific and Technical Cooperation]

[Text] I determine that the Agreement on Interstate Scientific and Technical Cooperation, which was signed on behalf of the government of Ukraine on 27 December 1991 in the city of Minsk (the Republic of Belarus), is aimed at the development of cooperation in the sphere of scientific and technical progress, while the structures and organizations, which will be established in conformity with this Agreement, are not suprastate ones, I resolve:

1. To agree with the proposal of the states that are parties to the Agreement on Interstate Scientific and Technical Cooperation on the location of the Interstate Scientific and Technical Council in the capital of Ukraine—in the city of Kiev.

2. The Cabinet of Ministers of Ukraine:

is to settle the question of the location in the city of Kiev of the Interstate Scientific and Technical Council and its Secretariat;

is to envisage annually assets for the payment for the participation of representatives of Ukraine in the work of the Secretariat of the Interstate Scientific and Technical Council.

[Signed] President of Ukraine L. Kravchuk

Kiev

16 May 1992

Scientist Protests Forced Retirements

927A0212B Moscow *POISK* in Russian
No 20 (158), 9-15 May 92 p 3

[Article by Doctor of Sciences Dmitriy Tsarev (Ulan-Ude): "So-So Esteem"]

[Text] Perhaps, it is reasonable to restrict the tenure of a staff member in an administrative position by an age limit, but in a scientific job some restriction in time is inadvisable. First, the restriction of a health, entirely able-bodied, experienced scientist in equal rights to work is his moral and physical destruction, a violation of human rights. Second, this is a "legal" opportunity of the administrator to get even with scientists who are unwelcome for personal reasons. Third, this is the easiest and most antihuman way to balance the reduced wage fund.

If they transfer a scientist to the nonstaff position of adviser, they force him to register for a pension and withhold from his salary the amount of the pension, although the work routine and the length of the work

week (40 hours) are retained. In this case the zonal coefficient and the seniority pay are added to the reduced salary, while the pension is subtracted with the full coefficient. Why for the same labor should a person, who has reached retirement age, receive a smaller reward?

Why does the head of a laboratory, who has a candidate degree or has no academic degree at all, have the right to work and to receive the full wage and pension up to the age of 65, while a chief or lead scientific associate, a doctor or candidate of sciences is thrown out to a nonstaff job of adviser or consultant at the age of 60 with a reduced wage? Moreover, it is stipulated by the law that in an administrative job people can also work beyond the age of 65, until the expiration of the competition period, and in a scientific job until the age of 60, regardless of the competition period.

Where is the logic of such laws and decrees? They were written, they say, for the purpose of the social protection of scientific associates who have reached retirement age. In fact this is a farce. All workers of retirement age receive the full wage and pension together, scientists do not.

In administrative surroundings they are saying and writing much about the rejuvenation of scientific personnel. But how is this to be done? Are experienced and able-bodied scientists, who have reached retirement age, to be dismissed? Or a people, who are unpromising in science, to be dismissed? Now the outflow of young people to cooperatives and broker organizations is large. The graduates of higher educational institutions are not going into science. While wasting mature personnel, science is not acquiring young people who are capable of research work. Science is being depleted in the intellectual, moral, and economic respects.

Only the subject himself, who has reached retirement age, and no one else, should have the right to the termination of labor activity and retirement on a pension. The administration should have the right to break a labor agreement only for the failure to fulfill labor obligations, for the violation of labor discipline, for criminal activity, and so on.

While reorganizing the sociopolitical and economic state of society, it is necessary to get rid of manifestations of animal instincts, and not to conceal them behind good intentions.

Formerly Secret Institute Trains Nuclear Specialists

927A0212A Moscow *POISK* in Russian
No 18 (156), 25 Apr-1 May 92 p 3

[Article by Konstantin Sidorenko: "The MIPK Atomen-ergo Is Experienced and Multipurpose"]

[Text] Among its colleagues and competitors, "firms that repair knowledge," the Moscow Institute of Advanced

Training of the Ministry of Atomic Power Engineering of Russia is a real patriarch. Established more than 20 years ago, when no one in the country was dealing in earnest with the problems of advanced training, the institute became the flagship among the half a dozen institutes of this type, which worked for the Ministry of Medium Machine Building. The sector, which dealt with nuclear affairs, enjoyed special attention. On this beneficial soil the Moscow Institute of Advanced Training was also cultivated.

Are you hearing about the MIPK Atomenergo [the Moscow Institute of Advanced Training of the Ministry of Atomic Power Engineering of Russia] for the first time? It is not surprising—earlier it was the Moscow affiliate of the Central Institute of Advanced Training of Management Personnel and Specialists. Moreover, it worked in a closed system—it was forbidden to mention to which ministry it belonged. They did not play with the atom. The closed system and all its mechanisms worked with the thoroughness and scope, which are inherent in closed systems. About 300 enterprises and 2 million people who worked at them—this is whom the present MIPK served for two decades. Many stars of atomic power engineering, including future academicians and ministers of the sector, polished their knowledge here.

Experience increased, its own techniques and methods were produced. For example, the MIPK was one of the few institutes of advanced training, which had the right to conduct scientific activity. Talented young people from leading higher educational institutions—the Moscow Institute of Engineering Physics, Moscow State University, and the Physical Technical Institute—were enlisted and as before are being enlisted for its implementation. Contacts with the higher school, as institute rector Boris Baturov said, made it possible to turn the selection of personnel “into manual work.” The institute has extensive ties, and among the people who teach here there are frequent guests—academicians, leading scientists of many fields.

The wealthy sector supplied its institute with an excellent material and technical base. Now the MIPK owns a five-story building, it has its own hotel and rehabilitation center, modern computer hardware, closed television systems, and an editing and publishing base are at its disposal. And having begun to earn a living independently—for three years the former ward of the Ministry of Medium Machine Building has been on cost accounting—the institute feels quite confident in the market element.

With the acquisition of greater freedom the range of possibilities and interests of the institute increased significantly. Now it is updating the knowledge of not only specialists in nuclear physics. In its structure there are chairs: the management of research; information technologies; systems analysis; the automation of scientific activity; the automation of design; management and economics; social and labor relations; radiation safety and environmental protection. The composition of the clientele in recent times has changed slightly. Fewer managers of enterprises are coming. Mainly those people

who urgently need new knowledge—specialists, who are involved with nuclear technologies and ecology, managers of enterprises, which are being resolutely reformed, adapting to market conditions—are going.

But behind them there is an enormous stratum of those people, who would be happy to avail themselves of the services of the institute, but are not capable of paying. The solution, in the opinion of Boris Baturov, is the following: to restore the state order for the advanced training of executives and specialists of the top and middle level of the sector in the sphere of nuclear technology, nuclear inspection, and radiation safety. It would be possible to carry out the financing of this state order through the conversion fund and other nonbudgetary funds, which are being formed by the ministry.

Representatives of commercial structures are now filling the desks that are being freed—market problems are widely represented in the program of instruction. As before there are many “narrow” specialists of enterprises and scientific institutes.

There is also a special stratum of clients—the elite stratum. For example, quite recently, when the Union still existed, republic ministers, who were involved with atomic power engineering, dropped in here. They are now also relying on a group of high-ranking officials: The ability to get one's bearings in the new aspects of financial, tax, and legislative policy is urgent for them as never before.

Often the people who formulate “policy”—prepare legislative acts or work in the highest executive structures: the Ministry of Finance, the tax inspectorate, the State Bank, and so on—“educate” the elite. The students, of course, do not confine themselves to the role of pupils, and often elite instructors leave seminars and conferences with a large number of remarks and additions for documents, the essence of which they explained.

The need for similar “interest meetings” gave rise to a new principle in work (it is also used at other institutes). The MIPK not only teaches, but also performs a “selection” and intermediary role: It determines the interest of one group of specialists or another in information, seeks consultants, brings both together, and makes it possible with the use of the hardware and methods of the institute for the “contingent” to master this information.

Not only the elite, of course, studies. The lower in rank the specialist is, the “narrower” and “deeper” the information, which he could obtain during the period of instruction, should be. And the MIPK is capable of teaching him at a high level. In the opinion of the leadership of the institute, under the new conditions it should receive the right to issue a “second diploma” in a number of specialties and a “first diploma” as a commercial faculty. The conversion of the graduation certificate is also among the tasks of the institute. Now the MIPK has the right to issue a certificate in a number of courses of the rather famous NANTUCKET firm. “The certificate on the completion of courses if only in several of our specialties should have the same weight as

after advanced training in medicine and dangerous works. While the process of mastering fresh knowledge should become permanent," Nikolay Ishchenko, prorector for education and science, considers.

The Moscow Institute of Advanced Training of Managerial Personnel and Specialists Atomenergo, Moscow, 125412, Senezhsкая, 1/9. Teletype: 417403 "SOYA." Telephone numbers: 453-12-37, 242-10-16.

Russian Federation Law on Trademarks**Text of Law**

925D0554A Moscow RADIKAL in Russian
No 23, Jun 92 pp 14-15

[Text of "Law of the Russian Federation 'On Trademarks, Service Marks, and Designations of Product Place of Origin'"]

[Text] Receiving numerous reader requests in this regard, we publish here the Law of the Russian Federation "On Trademarks, Service Marks, and Designations of Product Place of Origin" adopted by the Russian Supreme Soviet on 14 May 1992. In future issues we will publish the laws "On Legal Protection for Computer Programs and Data Bases" and "On Legal Protection for Topologies of Integrated Microcircuits" which were adopted at the same time, and the "Patent Law" of the Russian Federation, adopted 18 June. Texts of the laws are published in the wording adopted by the Russian Supreme Soviet. In this regard, minor editorial corrections may appear in the official text of the laws.

This law regulates relations arising in connection with the registration, legal protection, and utilization of trademarks, service marks, and designations of product place of origin.

SECTION I. TRADEMARKS AND SERVICE MARKS**CHAPTER I. TRADEMARKS AND SERVICE MARKS, THEIR LEGAL PROTECTION****Article 1. Trademarks and service marks**

Trademarks and service marks (henceforth referred to as trademarks) are markings capable of distinguishing the products and services of certain juridical or physical persons from similar products and services (henceforth—products) of other juridical or physical persons.

Article 2. Legal protection of trademarks

1. Legal protection of trademarks in the Russian Federation is afforded on the basis of its state registration in accordance with procedure as established by this law, or through force of international treaties of the Russian Federation.

2. The right to a trademark is protected by law.

3. A trademark may be registered in the name of a juridical person, as well as a physical person, engaging in entrepreneurial activity.

Article 3. Trademark certification

1. Trademark certification is issued for a registered trademark.

2. The certification attests to the priority of a trademark, the exclusive right of an owner to a trademark with respect to the products indicated in the certification.

Article 4. Exclusive right to a trademark

1. The owner of a trademark has the exclusive right to use the trademark, dispose of it, and prohibit use of the trademark by other persons.

No one may use a trademark protected in the Russian Federation without the permission of its owner.

2. The following are considered violations of the right of a trademark owner: unapproved manufacture, application, import, offer for sale, sale, or other introduction into economic circulation or storage with this purpose of a trademark or product designated by such marking, or of a marking similar to it to the extent that confusion may arise with respect to similar products.

Article 5. Types of trademarks

1. Trademarks which may be registered include markings in words, graphics, three-dimensional markings, and other designations or their combinations.

2. Trademarks may be registered in any color or combination of colors.

Article 6. Unqualified bases for denial of registration

1. Trademark registration is disallowed for trademarks consisting only of markings:

—incapable of being distinguished;

—comprising state coats of arms, flags, and emblems, official names of states, emblems, full or abbreviated designations of international intergovernmental organizations, official control or warranty marks and hallmarks, seals, award decorations, and other signs of distinction, and designations similar to the point of creating possible confusion. Such markings may be included as unprotected elements of a trademark if this is agreed to by the organ with appropriate jurisdiction or by the owners of the markings;

—which have come into universal use as markings of a certain variety of products;

—which constitute generally acknowledged symbols and terms;

—which denote the appearance, quality, quantity, properties, designation, or value of products, or the time and place of their production or sale.

Markings indicated in paragraphs 2, 4, 5, and 6 of this point may be included as unprotected elements of a trademark if they do not occupy a dominating position in it.

2. Registration as a trademark or designating element thereof is disallowed for markings:

- which are false, or capable of misleading the consumer regarding the product or its manufacturer;
- which are in contravention of social interests, human or moral principles.

Article 7. Other bases for denial of registration

1. Markings may not be registered as trademarks if they are identical, or similar to the point of creating confusion, to:

- trademarks previously registered, or trademarks for which application for registration in the Russian Federation has been made for similar products in the name of another person;
- trademarks of other persons which are protected without being registered by virtue of international treaties of the Russian Federation;
- the designations of product places of origin protected within the Russian Federation, except in instances where these are included as an unprotected element of a trademark registered in the name of a person having the right to use such designation;
- marks of certification which are registered in accordance with established procedure.

2. Markings are not registered as trademarks if they reproduce:

- well-known firm designations (or portions thereof) in the Russian Federation which belong to other persons who obtained the right to these designations before submission of the trademark application, with respect to similar products;
- industrial prototypes, rights to which belong to other persons in the Russian Federation;
- the names of well-known works of science, literature, and art in the Russian Federation, quotations or characters taken therefrom, works of art or fragments of such works, without the consent of the patent rights holder or his legal successors;
- names and surnames, pseudonyms, and derivatives of these, portraits or facsimiles of well-known persons, without the consent of these persons or their heirs, of the appropriate organ of jurisdiction, or of the Russian Federation Supreme Soviet, if these markings constitute the historical or cultural property of the Russian Federation.

CHAPTER II. REGISTRATION OF TRADEMARKS

Article 8. Application for registration of a trademark

1. Application for registration of a trademark (henceforth—application) is submitted by a juridical or physical person (henceforth—applicant) to the State Patent Department of the Russian Federation (henceforth—Patent Department).

2. The application may be submitted through a patent attorney registered with the Patent Department.

Foreign juridical persons or physical persons permanently residing outside the Russian Federation, or their patent attorneys, conduct business related to trademark registration through patent attorneys registered with the Patent Department. The authority of a patent attorney is certified by power of attorney issued to him by the applicant.

Patent attorney requirements and procedure for their attestation and registration are determined by the Regulations on Patent Attorneys approved by the Patent Department.

3. An application must relate to a single trademark.

4. An application must contain:

- a statement concerning registration of the marking as a trademark and indicating the applicant along with his location or place of residence;
- the marking for which application is being made and its description;
- a listing of the products and services for which trademark registration is being solicited, grouped according to classes of the International Classification of Products and Services for Registration of Symbols.

An application is submitted in the Russian language.

5. There must be attached to the application:

- documentation confirming the payment of duty in the prescribed amount;
- the collective trademark charter, if application is being made for a collective trademark.

Documentation attached to the application is submitted in Russian, or in some other language. If documents are submitted in another language, a Russian translation is attached to the application. The Russian translation may be presented by the applicant within two months after an application containing documents in another language arrives at the Patent Department.

6. Application document requirements are established by the Patent Department.

Article 9. Trademark priority

1. Trademark priority is established by the date of arrival at the Patent Department of an application meeting the requirements of Point 4, Article 8, of this law.

2. Trademark priority may be established according to the date of submission of original application in a participating state of the Paris Convention on the Protection of Industrial Property (convention priority), if the application arrived at the Patent Department within six months of that date.

3. Priority for trademarks displayed at official or officially recognized international exhibitions set up in the territory of a participating state of the Paris Convention on the Protection of Industrial Property may be established according to the date of the start of open presentation of the display at an exhibition (exhibition priority), if the trademark application arrives at the Patent Department within six months of that date.

4. An applicant desiring to use the right of convention or exhibition priority is obliged to so indicate while submitting his application for trademark or within two months of the date of arrival of the application at the Patent Department, and to append necessary documentation which confirms the legitimacy of this demand or present such documents not later than three months from the date of arrival of the application at the Patent Department.

5. Trademark priority may be established according to the date of international registration of a trademark in accordance with international treaties of the Russian Federation.

Article 10. Expert review of a trademark application

1. Expert review of an application is effected by the Patent Department and includes a preliminary expert review and expert review of the marking for which application is made.

2. During the period over which expert review is conducted, prior to the time a decision is made in this regard, an applicant has the right to supplement, clarify, or correct application materials, at his own initiative.

If supplementary materials substantively alter an application, these materials are not accepted for examination but may be drawn up by the applicant as an independent application.

3. During the period of conduct of an expert review, the Patent Department has the right to present inquiry for an applicant to submit additional materials, without which conduct of the expert review would be impossible.

Additional materials which comprise the subject of inquiry of an expert review must be submitted within two months of the date of receipt of the inquiry. This time limit may be extended at the request of the applicant if such request is received prior to expiration of the time frame. If the applicant violates this time frame or fails to respond to the inquiry of an expert review, the application is considered to have been retracted.

4. An application may be retracted at an applicant's request at any stage of examination of the application, but not later than the date of registration of the trademark.

Article 11. Preliminary expert review

1. Preliminary expert review of an application is conducted within one month of its date of arrival at the Patent Department.

2. During the course of conduct of a preliminary expert review, inspection is made of the content of the application, presence of necessary documentation, and their conformance with established requirements. As a result of the preliminary expert review, the applicant is informed as to acceptance of the application for examination or rejection of its acceptance for examination.

3. Upon acceptance of an application for examination, the applicant is informed as to the establishment of the trademark priority, with the exception of instances in which he is requesting convention or exhibition priority but, as of the time of acceptance of the application for examination, he has not presented the necessary documentation confirming the legitimacy of such a demand.

Article 12. Expert review of the marking for which application is made

1. Expert review of the marking for which application is made is conducted upon conclusion of the preliminary expert review.

During the course of the expert review, a verification is made of conformance of the marking being applied for with the requirements prescribed in Articles 1 and 6, and Point 1 of Article 7 of this law, and a priority is established for the trademark unless this has already been established during conduct of the preliminary expert review.

2. A decision is made based upon the results of the expert review to register the trademark or to reject its registration.

3. The decision of an expert review to register a trademark may be reconsidered in light of receipt of an application which enjoys an earlier priority in accordance with Article 9 of this law.

Article 13. Appeal of a decision regarding application and the reestablishment of lapsed time frames

1. In the event an applicant disagrees with the decision of a preliminary expert review or decision of the expert review of the marking for which application is made, he has the right to present an objection to the Appellate Bureau of the Patent Department (henceforth—the Appellate Bureau) within three months of the date of receipt of the decision. The objection must be evaluated by the Appellate Bureau within four months of the date of its receipt.

2. In the event an applicant disagrees with the decision of the Appellate Bureau, he may submit a complaint within six months of the date of its receipt to the Supreme Patent Bureau of the Russian Federation. The decision of the Supreme Patent Bureau is final.

3. An applicant has the right to become acquainted with materials presented in deposition for decision of the expert review.

An applicant may request copies of these materials within one month of receipt of the decision regarding application.

4. Time frames envisaged by Point 3 of Article 10 and Points 1 and 2 of this article, missed by the applicant, may be reestablished by the Patent Department upon petition of the applicant submitted no later than two months following their expiration, if it is confirmed that valid reasons exist and duties are paid.

Article 14. Trademark registration

Based on the decision regarding trademark registration, within one month of the date of receipt of documentation on payment of the prescribed duty, the Patent Department registers the trademark in the State Register of Trademarks and Service Marks of the Russian Federation (henceforth—the Register). Entered into the Register are the trademark, information concerning its owner, date of priority and date of registration of the trademark, the listing of products for which the trademark has been registered, and other information relating to registration of the trademark and subsequent changes to this information.

Article 15. Issue of trademark certification

1. Trademark certification is issued by the Patent Department within three months of the date of registration of the trademark in the Register.

2. The form of certification and content of information it contains are prescribed by the Patent Department.

Article 16. Registration term of validity

1. Trademark registration is valid for a period of 10 years, counting from the date of arrival of the application at the Patent Department.

2. A trademark registration term of validity may be extended, upon application of its owner submitted during the final year of validity, each time for a period of 10 years.

Upon petition of a trademark owner to extend the trademark's term of validity, he may be afforded a six-month period following expiration of the registration term of validity if a supplemental duty payment is made.

3. An entry on extending a trademark registration term of validity is made by the Patent Department into the Register and into the trademark certification.

Article 17. Insertion of changes in registration

The trademark owner informs the Patent Department of changes in his designation, name, patronymic, or surname, reductions in the listing of products for which the trademark is registered, changes in certain elements of

the trademark which do not alter its essence, and other changes related to the registration of the trademark.

Changes are entered into the Register and into the trademark certification upon payment of the duty.

Article 18. Publication of registration information

Information related to registration of a trademark which is entered into the Register in accordance with Article 14 of this law is published by the Patent Department in an official bulletin within six months of the date the trademark is registered in the Register or six months of the date changes to the trademark registration are entered in the Register.

Article 19. Trademark registration in foreign countries

Juridical and physical persons of the Russian Federation have the right to register a trademark in foreign countries or effect its international registration.

Application for international registration of a trademark is submitted through the Patent Department.

CHAPTER III. COLLECTIVE TRADEMARKS

Article 20. Right to a collective trademark

1. A collective trademark is the trademark of a union, economic association, or other voluntary association of enterprises (henceforth—association), intended for the designation of products produced and (or) sold by them which have uniform qualitative or other common characteristics.

2. A collective trademark and right to its use cannot be transferred.

Article 21. Registration of collective trademarks

1. Attached to the application for a collective trademark are the collective trademark charter which contains the designation of the association empowered to register the collective trademark in its name, the list of enterprises which have the right to use this trademark, the purpose of trademark registration, the listing and uniform qualitative or other common characteristics of products which will be marked with the collective trademark, conditions of its use, procedure for control of its use, and responsibility for violations of the collective trademark charter.

2. Information on the enterprises which have the right to use the collective trademark is entered into the Register and into the trademark certification as information supplemental to that prescribed by Article 14 of this law. This information and an extract from the collective trademark charter indicating the uniform qualitative or other common characteristics of products for which this trademark has been registered are published by the Patent Department in an official bulletin. The owner of the collective trademark informs the Patent Department of changes in the collective trademark charter.

3. In the event a collective trademark is used on products which do not have uniform qualitative or other common characteristics, the validity of the registration may be terminated prior to normal expiration in full or in part, based on decision of the Supreme Patent Bureau.

CHAPTER IV. USE OF THE TRADEMARK

Article 22. Use of the trademark and consequences of its nonuse

1. Use of a trademark consists of its application on products for which the trademark has been registered and (or) on its packaging, by the owner of the trademark or by a person to whom such right is afforded based on a licensing agreement in accordance with Article 26 of this law.

Use of a trademark may also be considered to comprise its application in advertisements, printed publications, on signs, in exhibit displays at fairs and exhibitions conducted in the Russian Federation, when valid reasons exist for nonapplication of the trademark on products and (or) their packaging.

2. Juridical and physical persons carrying out intermediary activity may use their own trademark alongside the trademark of the product manufacturer, on the basis of a contract, as well as in place of the trademark of the latter.

3. The validity of registration of a trademark may be terminated prior to its normal expiration in full or in part, based on decision of the Supreme Patent Bureau made upon the claim of any person with respect to continuous nonuse of the trademark for five years from date of registration, or five years preceding the submission of this claim.

In reaching decision of an issue concerning early termination of the registration validity of a trademark in connection with its nonuse, evidence presented by the trademark owner may be taken into account to the effect that the trademark was not used due to circumstances beyond his control.

Article 23. Limitation of rights based on registration of a trademark

Registration of a trademark does not afford the right to its owner to prohibit the use of this trademark with respect to products which were placed into economic circulation directly by the trademark owner, or upon his consent.

Article 24. Cautionary markings

A trademark owner may place a cautionary marking alongside the trademark, indicating the fact that this marking is a trademark registered in the Russian Federation.

CHAPTER V. TRANSFER OF TRADEMARKS

Article 25. Surrender of a trademark

A trademark may be surrendered by its owner according to contract with a juridical or physical person with respect to all or part of the products for which it is registered.

Surrender of a trademark is not permitted if this might cause the consumer to be misled with respect to the product or its manufacturer.

Article 26. Granting of licenses for the use of a trademark

The right of use of a trademark may be granted by the trademark owner (licensor) to another person (licensee) in accordance with a licensing contract.

The licensing contract must contain the provision that the quality of products of the licensee will not be lower than the quality of products of the licensor, and that the licensor will monitor fulfillment of this provision.

Article 27. Registration of a contract on surrender of a trademark or of a licensing contract

Contracts on surrender of a trademark and licensing contracts are registered with the Patent Department. Such contracts are considered invalid without this registration.

CHAPTER VI. TERMINATION OF LEGAL PROTECTION OF A TRADEMARK

Article 28. Declaration of trademark registration as invalid

1. Registration of a trademark may be declared invalid in full or in part during the entirety of its effective term, if the registration was effected in violation of the requirements prescribed by Point 3 of Article 2 and Article 6 of this law, or by virtue of the grounds prescribed by Article 7 of the law—within five years of the date of publication of information on registration of the trademark in an official bulletin.

2. Any person may, within the time frames prescribed in Point 1 of this article, present to the Appellate Bureau an objection to the registration of a trademark. An objection to the registration of a trademark must be examined within four months of the date of its arrival.

3. A decision of the Appellate Bureau may be appealed to the Supreme Patent Bureau within six months of the date it was rendered. The decision of the Patent Court is final.

Article 29. Annulment of the registration of a trademark.

Registration of a trademark is annulled by the Patent Department:

- in connection with termination of its effective term as prescribed by Article 16 of this law;
- on the basis of a decision by the Supreme Patent Bureau on early termination of its validity by virtue of use of a collective trademark for products which do not have uniform qualitative or other common characteristics, in accordance with Point 3 of Article 21 of this law;
- on the basis of a decision by the Supreme Patent Bureau on early termination of its validity by virtue of nonuse of the trademark, in accordance with Point 3 of Article 22 of this law;
- in the event the registration is declared invalid in accordance with Article 28 of this law;
- upon elimination of the juridical person/trademark owner;
- on the basis of a decision by the Supreme Patent Bureau in the event a trademark is transformed into a designation of universal use as the marking of a certain variety of products;
- in the event the trademark owner repudiates it.

SECTION II. DESIGNATION OF PRODUCT PLACE OF ORIGIN

CHAPTER VII. DESIGNATION OF PRODUCT PLACE OF ORIGIN AND ITS LEGAL PROTECTION

Article 30. Designation of product place of origin

1. The designation of a product's place of origin is the name of the country, population center, locality, or other geographic entity (henceforth—geographic entity) used in designating the product, whose particular features exclusively, or mainly, are determined by the natural conditions characteristic of the given geographic entity, or by human factors, or by natural conditions and human factors taken simultaneously.

The designation of a product's place of origin may comprise the historical name of the geographic entity.

2. A designation which, although it represents or contains the name of a geographic entity, has come into universal usage in the Russian Federation as the designation of a certain variety of product not connected with its place of manufacture—is not recognized as the designation of a product place of origin.

Article 31. Emergence of legal protection

1. Legal protection of the designation of a product place of origin in the Russian Federation arises on the basis of its registration according to procedure as established by this law, or by force of international treaties of the Russian Federation.

2. The designation of a product place of origin is protected by the law.

The designation of a product place of origin may not constitute the object of exclusive right of individual juridical or physical persons.

3. The designation of a product place of origin may be registered by one or by several juridical or physical persons. A person who has registered the designation of a product place of origin obtains the right of its use, if the product produced by this person meets the requirements established by Point 1 of Article 30 of this law.

The right of use of this designation of product place of origin, registered according to established procedure, may be granted to any juridical or physical person located in the same geographic entity and producing a product with the same characteristics.

4. Registration of a designation of product place of origin is valid indefinitely.

CHAPTER VIII. REGISTRATION AND GRANTING OF RIGHT OF USE OF THE DESIGNATION OF A PRODUCT PLACE OF ORIGIN

Article 32. Application for the registration and granting of right of use of a designation of product place of origin

1. Application for the registration and granting of right of use of a designation of product place of origin or application for granting right of use of the designation of a product place of origin already registered (henceforth—application) is submitted to the Patent Department by an applicant independently or through a patent attorney in accordance with Point 2 of Article 8 of this law.

2. An application must relate to one designation of product place of origin.

3. An application must contain:

—a request for the registration and granting of right of use of a designation of product place of origin or the granting of right of use of the designation of a product place of origin already registered, indicating the name of the applicant (applicants) and his (their) location or place of residence;

—the variety of product for which registration and the granting of right of use of a designation of product place of origin or granting of the right of use of the designation of a product place of origin already registered is being requested, indicating its place of production (boundaries of the geographic entity);

—a description of the special attributes of the product.

An application is presented in the Russian language.

4. The following must be attached to an application:

—the conclusion of a competent organ that the applicant is located in the geographic entity indicated and is producing a product whose special attributes are determined by the natural conditions or human factors characteristic of the given geographic entity, or by its natural conditions and human factors taken simultaneously;

—for a foreign applicant—a document which confirms his right to the designation of product place of origin applied for, in the country of origin of the product;

—a document confirming payment of the duty in the prescribed amount.

Documentation attached to an application is presented in Russian or in another language. If this documentation is presented in another language, a Russian translation is attached to the application. The Russian translated version may be submitted by the applicant within two months of the date of arrival at the Patent Department of the application containing documents in another language.

5. Requirements of application documents are established by the Patent Department.

Article 33. Expert review of an application

1. Expert review of an application is effected by the Patent Department and includes a preliminary expert review and expert review of the marking for which application is made.

2. During the period over which expert review is conducted, prior to the time a decision is made in this regard, an applicant has the right to supplement, clarify, or correct application materials, at his own initiative.

If supplementary materials substantively alter an application, these materials are not accepted for examination but may be drawn up by the applicant as an independent application.

3. During the period of conduct of an expert review, the Patent Department has the right to present inquiry for an applicant to submit additional materials, without which conduct of the expert review would be impossible.

Additional materials which comprise the subject of inquiry of an expert review must be submitted within two months of the date of receipt of the inquiry. This time limit may be extended at the request of the applicant if such request is received prior to expiration of the time frame. If the applicant violates this time frame or fails to respond to the inquiry of an expert review, the application is considered to have been retracted.

4. Preliminary expert review of an application is conducted within two months of the date of its arrival at the Patent Department.

During the course of conduct of a preliminary expert review, inspection is made of the content of the application, presence of necessary documentation, and their conformance with established requirements. As a result of the preliminary expert review, the applicant is informed as to acceptance of the application for examination or rejection of its acceptance for examination.

5. Expert review of an application accepted for examination is conducted with respect to a marking's conformance with requirements prescribed by Article 30 of this law.

6. According to the results of an expert review, the Patent Department makes a decision to register the designation of a product place of origin and grant its right of use, or to reject registration of the designation of a product place of origin and on granting its right of use, or a decision to grant right of use of the designation of a product place of origin already registered, or to reject granting of its right of use.

7. An applicant may retract an application at any stage of its examination.

Article 34. Appeal of a decision regarding an application and reestablishment of lapsed time frames

1. In the event an applicant disagrees with the decision of a preliminary expert review or decision of the expert review of the marking for which application is made, he has the right to present an objection to the Appellate Bureau within three months of the date of receipt of the decision. The objection must be evaluated by the Appellate Bureau within four months of the date of its receipt.

2. In the event an applicant disagrees with the decision of the Appellate Bureau, he may submit a complaint within six months of the date of its receipt to the Supreme Patent Bureau. The decision of the Supreme Patent Bureau is final.

3. Time frames envisaged by Point 3 of Article 33 and Point 1 of this article, missed by the applicant, may be reestablished by the Patent Department upon petition of the applicant submitted no later than two months following their expiration, if it is confirmed that valid reasons exist and duties are paid.

Article 35. Registration of designation of a product place of origin and issue of certification respecting the right of use of a designation of product place of origin

1. Based on decision of the expert review, the Patent Department effects registration of the designation of a product place of origin in the State Register of Designations of Product Places of Origin of the Russian Federation (henceforth—the Register). Entered into the Register are the designation of product place of origin, information on the holder of certification respecting the right of use of a designation of product place of origin (henceforth—certification), the variety and description of special attributes of the product for which designation of product place of origin has been registered, other

information relating to the registration and granting of right of use of the designation of a product place of origin, extension of certification term of validity, and subsequent changes to this information.

2. The Patent Department issues certification respecting right of use of the designation of a product place of origin within three months of the date of receipt of documentation showing payment of duty.

3. The form of certification and content of information presented therein are established by the Patent Department.

Article 36. Term of validity of certification respecting right of use of a designation of product place of origin

1. The certification is valid for a period of 10 years from the date of arrival of the application at the Patent Department.

2. The term of validity of certification may be extended upon petition of the certification holder, if the conclusion of a competent organ is presented confirming that the certification holder is located in the geographic entity indicated and is producing a product with attributes as indicated in the certification.

Such petition is submitted during the final year of validity of the certification.

The term of validity of certification is extended 10 years in each instance.

Upon request of a certification holder to extend certification term of validity, the holder may be afforded a six-month period following expiration of this term of validity, if supplemental duty is paid.

3. The Patent Department makes an entry regarding extension of certification term of validity in the Register and in the certification.

Article 37. Insertion of changes into the Register and certification

A certification holder informs the Patent Department of changes to his designation, name, patronymic, or surname, and of other changes relating to the registration and granting of right of use of a designation of product place of origin.

Entries on changes are made to the Register and to the certification if duty is paid.

Article 38. Publication of information on the registration and granting of right of use of a designation of product place of origin

Information relating to the registration and granting of right of use of a designation of product place of origin, entered into the Register in accordance with Article 35 of this law, is published by the Patent Department in an official bulletin within six months of the date of its entry into the Register.

Article 39. Registration of designation of product place of origin in foreign countries

1. Juridical and physical persons of the Russian Federation have the right to register designations of product place of origin in foreign countries.

2. Submission of an application for registration of a designation of product place of origin in a foreign country takes place following its registration and obtainment of the right of use of this designation of product place of origin in the Russian Federation.

CHAPTER IX. USE OF A DESIGNATION OF PRODUCT PLACE OF ORIGIN

Article 40. Use of a designation of product place of origin

1. By use of the designation of a product place of origin is meant its application on a product, in its packaging, advertisements, brochures, accounts, forms, or other documentation connected with the introduction of the product into economic circulation.

2. The use of a registered designation of product place of origin is not permitted by persons who do not possess certification, even if the true product place of origin is indicated, or the designation is used in translation or in combination with such expressions as "kind," "type," "imitation," or similar terms; nor is the use permitted of a like designation for similar products capable of misleading the consumer with respect to the place of origin or special attributes of the product.

3. A certification holder does not have the right to afford licenses for the use of a designation of product place of origin to other persons.

Article 41. Cautionary markings

A certification holder may place a cautionary marking alongside the designation of product place of origin, indicating the fact that this designation is a designation of product place of origin registered in the Russian Federation.

CHAPTER X. TERMINATION OF LEGAL PROTECTION OF DESIGNATION OF PRODUCT PLACE OF ORIGIN

Article 42. Declaration as invalid of the registration of a designation of product place of origin and of the certification to right of use of the designation of product place of origin

1. The registration of a designation of product place of origin may be declared invalid if it was effected in violation of the requirements prescribed by this law.

2. The validity of registration of a designation of product place of origin may be terminated in connection with the disappearance of the conditions characteristic of the given geographic entity and impossibility of producing the product with the attributes indicated in the Register.

In addition to the aforementioned reasons, the validity of registration of a designation of product place of origin in the name of a foreign juridical or physical person is also terminated in connection with that person's loss of right to the designation of place of origin in question, in the country of product origin.

3. Certification respecting the right of use of a designation of product place of origin may be declared invalid if it was issued in violation of the requirements established by this law.

4. Certification validity may be terminated:

- in connection with a product's loss of the special attributes indicated in the Register regarding the given designation of product place of origin;
- in the event the registration of designation of product place of origin is annulled;
- upon elimination of the juridical person holding the certification;
- based on petition of the certification holder submitted to the Patent Department.

5. Any person may submit an objection, based on the premises indicated in Points 1-4 of this article, to the registration of a designation of product place of origin and issue of certification respecting the right of use of a designation of product place of origin to the Appellate Bureau. The objection must be examined within four months of the date of its receipt. Both the person submitting the objection and the certification holder have the right to participate in its examination.

6. A decision of the Appellate Bureau may be appealed to the Supreme Patent Bureau within six months of the date of its decision. A decision of the Supreme Patent Bureau is final.

7. Registration of a designation of product place of origin or certification respecting the right of use of a designation of product place of origin are annulled by the Patent Department in the event they are declared invalid based on a decision of the Supreme Patent Bureau.

SECTION III. CONCLUDING PROVISIONS

Article 43. The State Patent Department of the Russian Federation

The State Patent Department of the Russian Federation carries out in accordance with this law a unified policy in the sphere of protection of trademarks and designations of product place of origin in the Russian Federation, accepts for examination applications for registration of trademarks and applications for the registration and granting of right of use of designations of product place of origin, conducts expert review of these, effects their state registration, issues certification, publishes official information, issues clarifications concerning the application of this law, and fulfills other functions relating to

trademarks and designations of product place of origin, in accordance with the regulations governing the Patent Department approved by the president of the Russian Federation.

Article 44. Duties

Duties are exacted for the accomplishment of legally significant actions related to registration of a trademark, or registration and the granting of right of use of a designation of product place of origin. Duties are paid to the Patent Department. The listing of actions, accomplishment of which entail exacting a duty, the amounts and terms of payment, and the bases for reimbursement of duties are established by the Russian Federation Government.

Article 45. Investigation of disputes related to the application of this law

1. Disputes related to the application of this law are investigated in accordance with procedure established by legislation of the Russian Federation, by a court, court of arbitration, or reference tribunal, including disputes:

- on violations of the exclusive right to a trademark;
- on the conclusion and execution of licensing contracts and contracts respecting surrender of a trademark;
- on illegal use of a designation of product place of origin.

2. The Supreme Patent Bureau of the Russian Federation investigates disputes which fall within its jurisdiction in accordance with Articles 13, 21, 22, 28, 29, and 42 of this law.

Article 46. Responsibility for illegal use of a trademark or designation of product place of origin

1. The use of a trademark or designation of product place of origin, or of a marking similar to a trademark or designation of product place of origin for similar products, in contravention of the provisions of Point 2 of Article 4 and Article 40 of this law, entails the assumption of civil and (or) criminal liability in accordance with legislation of the Russian Federation.

2. In addition to the requirements to cease actions in violation or make payment for losses incurred, the protection of civil rights against illegal use of a trademark is effected through:

- publication of a legal decision with the aim of restoring the business reputation of the injured party;
- removal from a product or its packaging of an illegally used trademark or designation similar to the point of causing confusion with it, or the destruction of manufactured depictions of the trademark or designation similar to it to the point of causing confusion.

3. A person who illegally uses a registered designation of product place of origin or marking similar to this designation is obligated, upon demand of the holder of certification respecting right of use of the designation of product place of origin, a social organization, or prosecutor:

- to cease its use and provide compensation to all injured parties for losses incurred, and to contribute to the local budget revenue the amount of profit received in connection with illegal use of the designation of product place of origin which exceeds recompensed losses;
- to publish a legal decision with the aim of restoring the business reputation of the injured party;
- to remove from the product or its packaging an illegally used designation of product place of origin or marking similar to it to the point of causing confusion, or to destroy manufactured depictions of the designation of product place of origin or marking similar to it to the point of causing confusion.

4. A person who produces a cautionary marking with respect to a trademark or designation of product place of origin not registered in the Russian Federation bears responsibility in accordance with procedure as prescribed by Russian Federation legislation.

Article 47. Rights of foreign juridical and physical persons

Foreign juridical and physical persons enjoy the rights prescribed by this law on an equal footing with juridical and physical persons of the Russian Federation, by force of international treaties of the Russian Federation or on the basis of the principle of reciprocity.

The right to registration in the Russian Federation of designations of product place of origin is afforded to juridical and physical persons of states which afford an analogous right to juridical and physical persons of the Russian Federation.

Article 48. International treaties

If regulations other than those which are contained in this law are established by international treaty of the Russian Federation, the regulations of the international treaty apply.

Decree on Implementation

925D0554B Moscow RADIKAL in Russian
No 23, Jun 92 p 15

["Decree of the Russian Federation Supreme Soviet: On Implementation of the Law of the Russian Federation 'On Trademarks, Service Marks, and Designations of Product Place of Origin'"]

[Text] The Supreme Soviet of the Russian Federation decrees:

1. To implement the Law of the Russian Federation "On Trademarks, Service Marks, and Designations of Product Place of Origin" as of its date of official publication.

2. The Law of the Russian Federation "On Trademarks, Service Marks, and Designations of Product Place of Origin" is applied with respect to legal relations which arise following implementation of this law.

3. To establish that duties imposed for the accomplishment of legally significant acts related to the registration of trademarks and service marks, and to the registration and granting of right of use of designations of product place of origin, are paid directly to the budget of the State Patent Department of the Russian Federation.

4. To acknowledge the validity on the territory of the Russian Federation of the registration of trademarks and service marks effected previously in the former USSR.

5. With respect to applications for the registration of trademarks and service marks for which processing has not been completed and certification not issued as of the date of implementation of the aforementioned law, to afford applicants the right to petition registration of the trademarks and service marks in the Russian Federation while maintaining the priority which was established according to the originally submitted application documents.

Petitions are submitted to the State Patent Department of the Russian Federation not later than 31 December 1992.

Applications for which petitions have been submitted within the designated time frame are examined in accordance with procedure as established by the Russian Federation Law "On Trademarks, Service Marks, and Designations of Product Place of Origin." In this regard, requirements prescribed by legislation in effect as of the date of submission of the application are brought to bear with respect to the registration for which application is being made.

6. The Russian Federation Supreme Soviet Committee on Science and Public Education and the Russian Federation Supreme Soviet Committee on Legislation, with participation of the State Patent Department of the Russian Federation, will:

- draw up and present to the Russian Federation Supreme Soviet proposals on administrative and criminal responsibility for violations of legislation on trademarks and designations of product place of origin;

- generalize the practical application record of this law and report on the results prior to 1 January 1994.

7. The Russian Federation Government will:

- present to the Russian Federation Supreme Soviet prior to 1 June 1992 proposals on the introduction of

changes to existing legislation in connection with adoption of the Russian Federation Law "On Trademarks, Service Marks, and Designations of Product Place of Origin";

- ensure the adoption of normative acts envisaged by the Russian Federation Law "On Trademarks, Service Marks, and Designations of Product Place of Origin" prior to 15 June 1992;
- determine the state organs which will be entrusted with supervision of the production and sale of products marked with registered designations of product place of origin;
- accomplish necessary measures with respect to regulating the use of geographic designations, with the aim of terminating their application with respect to products whose place of manufacture does not correspond with such designations.

[Signed] *R. Khasbulatov, chairman of the Russian Federation Supreme Soviet*

Commentary on RF Law on Trademarks

925D0554C Moscow RADIKAL in Russian
No 23, Jun 92 p 15

["Commentary" by Igor Krylov, docent at the Institute for Professional Improvement of Information Specialists]

[Text] The trademark is an element of the market economy which is as necessary as the stock share or insurance policy. Attesting to this is not only the practice of the world market in goods and services, where the number of registered trademarks is estimated to be 20 million, but also the rapid rise in submission of applications for the registration of Russian trademarks. According to the Scientific Research Institute for State Patent Expert Review, the flow of such applications over the past three years has increased more than fourfold, and this has led to a significant increase in the time frame for examination of the application (today registration of a trademark requires at least a one-year wait).

Legislation dealing with trademarks in Russia has a curious history—the first law regulating their protection goes back to 1667 (i.e., significantly earlier than in other developed countries: Great Britain—1862, France—1857, the United States—1870, Japan—1888, Germany—1894, etc.). In the USSR, however, the legal protection of trademarks was carried out exclusively on the basis of normative sub-legal enactments—the Resolution of the USSR Council of Ministers "On Trademarks" and Regulations on Trademarks approved by the USSR State Committee on Inventions and Discoveries.

Trademarks first received protection on the level of law with the USSR Law "On Trademarks and Service Marks" adopted by the USSR Supreme Soviet 3 July 1991. However, the subsequent dissolution of the USSR prevented implementation of this normative act.

We can only regret destruction of the unified "patent space" on the territory of the former USSR—after all, any holder of a protected document, whether it be a patent for an invention or certificate for a trademark, is interested in expanding as much as possible the territory in which his rights are effective. But life led us in a different direction, and Russia is following in Lithuania's footsteps in introducing national legislation with respect to trademarks.

The significant particular feature of this law (and its distinguishing element from the Union law and normative acts previously in effect) is the introduction of legal protection for designations of product place of origin. Although a designation of product place of origin—as opposed to a registered trademark—cannot be an object of exclusive right (Point 2, Article 31) and may be registered in the name of any juridical or physical person by virtue of his presence in a certain territory, the introduction of this as a protected object nonetheless has great significance. Registration of designations of product place of origin is important primarily with respect to popular arts and crafts articles, with the aim of preventing the counterfeiting of articles of traditional small-scale Russian folk trades, handicraft trades of the peoples of the Russian North, etc.

Another new aspect is the introduction of collective trademarks. The need for legal regulation of the protection and use of this variety of trademark new to our legislation issues from the Paris Convention on Protection of Industrial Property and from a significant expansion of the practice of uniting enterprises into all possible kinds of unions, associations, partnerships, concerns, etc.

In full conformance with the Russian Law "On Enterprises and Entrepreneurial Activity," a trademark may be registered not only in the name of a juridical person, but also in the name of a physical person who engages in entrepreneurial activity.

In order to prevent violations of the rights of registered trademarks, the law introduces a provision (Article 41) regarding a cautionary marking (a special "R" [English letter R used] marking placed alongside the trademark).

It should be noted, however, that the norms of Article 46, which establish liability for the illegal use of trademarks and designations of product place of origin, are not sufficiently specific and do not contain an effective mechanism for protection against possible violations.

Point 1 of Article 46 contains a norm with reference to civil and criminal legislation of the Russian Federation. However, existing legislation contains no provisions enabling reliable protection against violations of the rights of the trademark owner or compensating for damages inflicted against him. Indeed, Article 155 of the Criminal Code of Russia establishes a liability of 300 rubles for violation of the exclusive trademark right (an amount which is simply ludicrous in today's world to any violator). Also quite dubious is the possibility of

providing protection against violation of trademark rights on the basis of the norms on unscrupulous competition in Article 10 of the Russian Law "On Competition and Restricting Monopolistic Activity in Commodities Markets." The fact is that Articles 23 and 24 of the Antimonopoly Law, which establish liability for its violation, do not make any mention at all of unscrupulous competition. On the whole, establishment of incidence of violation of trademark rights and of the amount of compensation to be exacted from the violator constitute, without a doubt, the subject of activity for a court

of arbitration, but in no way for an administrative organ—the Antimonopoly Committee of Russia.

Insofar as it is precisely in providing a reliable mechanism for protection of the rights of the trademark owner from duplication and counterfeiting and in ensuring payment of commensurate compensation when a violation is committed that the main interest of any trademark owner lies, the new Russian law is clearly incomplete in this aspect.

U.S. Efforts To Restrict Technology Exports Criticized

927A0213B Moscow *DELOVOY MIR* in Russian
4 Jun 92 p 4

[Article by Viktor Presnyakov, head of a sector of the All-Russian Scientific Research Institute of Foreign Economic Relations attached to the Ministry of Economics of the Russian Federation, under the rubric "Point of View": "Export Control: What Lies Behind It?"

[Text] In world economic practice export control holds a significant place, having turned into an important means of maintaining the monopoly on world markets of the latest technologies and protecting state interests and the interests of firms. The mechanism of export control (first of all with respect to our country) has existed abroad for more than 40 years. During this period, especially in the last decade, its effectiveness and strength have grown. This system includes the Coordinating Committee on Multilateral Export Controls (Cocom), as well as national and intrafirm regimes of export control. It has assumed a truly global nature, the policy of drawing into it all countries, which are exporters of high technology goods, has been adopted. In recent times the states of Eastern Europe and the Baltic region have been among them.

The more and more scrupulous attitude of the West toward its technological superiority as a guarantee of military and economic security and the fundamental increase of the importance of the latest achievements of scientific and technical progress in the competitive struggle on foreign markets are among the reasons for the preservation of Cocom. Export control enables the suppliers of the latest technologies to exert a powerful influence on practically the entire world economy.

Therefore, it is possible to draw the conclusion that they, and first of all the United States, will also try to preserve this system in the foreseeable future. Within it the implementation of the policy of maintaining "the controlled technological lag" of Russia and the member countries of the CIS, which was adopted back in the middle of the 1980's, is continuing. Therefore, the basic science-intensive commodities and technologies, in spite of the appreciable clearing in the recent period of obsolete items from the Cocom lists, continue to be strictly regulated, and most often of all bans are being imposed as before on deliveries of them to Russia. Everything is being done in order to cut us off from advanced achievements of scientific and technical progress and to measure out their export to Russia in the future. And as a result to halt or slow the development of its science-intensive sectors, thereby undermining our export possibilities on foreign markets.

In the western system of export regulation a shift from the control of the export of individual commodities to the control of the sale of the most important technologies is occurring. Here freedom is being given for sales of commodities and technologies, which are new for the

countries under control, but are already old for Cocom members and those who abide by the rules of this organization in export operations ("leading edge" control). This was actually confirmed at the Cocom conference in May 1991. The present principle of compiling prohibited lists, which was agreed upon by all its members, was formulated by W. Wendt, the U.S. representative to the Coordinating Committee, as "the greater protection of a smaller number of commodity items."

On 1 September 1991 a new "core list," on which first of all basic technologies: supercomputers, advanced fiber-optic communications equipment, lasers, high-precision metalworking machines, the strongest hydrocarbon and polymer fibers, the latest models of microinformation hardware, and so on, were included, took effect. Moreover, particular attention is devoted to the following channels of technology transfer: the export of complete plant equipment turnkey; the export of licenses with the extensive training of personnel; cooperation with permanent work contacts of personnel; the organization of the training of personnel in science-intensive sectors of industry; the export of technological equipment and new knowledge. At the same time in western states criminal and administrative punishments for the violation of the rules of the delivery of commodities and technologies are being used more and more widely and rigorously.

As before the United States is playing the role of the leading organizer of the policy of export control. Here it should be particularly emphasized that it is possible to remove one item or another from the control lists and to make a decision on the delivery to a country under control as an exception of one or another strategic commodity only on the condition of the unanimity of the Cocom members. Therefore, it is possible to predict an increase of the conflicts, for example, between the United States and Western Europe, which is interested in a broader scale of "eastern trade."

At the same time, although now western competitors, and first of all Japan, have overtaken the United States in development in several high technology spheres, as a whole American technological leadership in the coming decade, to all appearances, will remain. Consequently, the role of the United States as the initiator of the improvement of national and international systems of export control will also remain. The aspiration of other foreign states and the firms based in them to obtain North American technology will remain, while this means that the threat of losing access to it as before will be an effective means of influencing both countries and firms. Therefore, American laws, which prescribe a set of measures on the organization and implementation of export control, are retaining their effectiveness, in spite of the fact that they do not have legal force outside the United States. Since the late 1980's intrafirm export control services have been actively established, first of all on the initiative of the United States.

Therefore, within the modernized system of regulation the sphere of control can be broad or more narrow,

depending on the criteria, in conformity with which technologies are grouped with "strategic" technologies. Taking this into accounting, the system of export control, which has been established in the West, in itself is suitable for periods of both the increase and the relaxation of international tension.

Under the conditions that have formed today the increasing possibilities of technological imports for the purpose of modernizing the Russian economy should be used to the utmost. However, it would be inadvisable to rely carelessly on foreign sources of technologies, which, as we noted, would doom the country to the reinforcement of its lag. It is extremely important to maintain a high, competitive level of domestic scientific and technical developments and to exert efforts for their diversification. At the same time it is necessary to participate actively in international projects and in joint ventures, where possible ensuring in so doing a bilateral nature of technology exchange.

For the increase of the technological level of imports of Russia it is possible to use, first, contacts with various Cocom member countries, with allowance made for the differences within this informal organization and the discrepancies in national control lists; second, the diversification of the imports of high technologies, the development of contacts in this area with states that are not participating in the system of multilateral control. However, such opportunities are limited by the increase of the standardization of control mechanisms and the involvement of new countries in cooperation with the Cocom states.

The comparatively favorable development of the international situation during the recent period and the cessation of global confrontation are making it possible to raise questions about the streamlining of export control and to seek their discussion at various international forums. The elaboration of clear criteria of the assignment of commodities and technologies to the category "dual purpose" (that is, the possibility of their direct military application should be proven) should be made the fundamental goal of bilateral and multilateral talks.

Thus, the increase of the role of technology in the competitive struggle is leading to the separation of world trade into two "levels": The active liberalization of trade is under way at the bottom level (approved commodities and technologies); diverse obstacles for free exchange remain at the top level (high technologies).

The effectiveness of export control of the western states, to all appearances, will increase, and if Russia were to find itself in the role of the "weak link" of this system, this would significantly complicate its integration in international economic relations.

South Africa Runs Ad Recruiting CIS Scientists

927A0213A Moscow POISK in Russian
No 20 (158), 9-15 May 92 p 6

[Article under the rubric "POISK-Continental": "In Yellow Hot Africa..."—first paragraph is POISK introduction; last paragraph is POISK conclusion]

[Text] We continue the publication of information about stipends, on which scientists of the CIS can count abroad.

South Africa

One of the South African universities annually accepts applications for stipends for researchers who have the degree of candidate of sciences.

The area of research should interest one of the faculties of the university:

- the arts faculty (archeology, history, economic history, the history of the arts, languages);
- the commerce faculty (accounting, economics, business, statistics);
- the education faculty (library science, education, adult education);
- the engineering faculty (the chemical industry, civil engineering, electrical engineering and electronics, power engineering, applied mechanics, materials science);
- the fine arts and architecture faculty (architecture and planning, design, urban planning);
- the law faculty;
- the medical faculty;
- the music faculty (ballet, opera, music);
- the science faculty (chemistry, geography, mineralogy, biochemistry, botany, microbiology, zoology, mathematics, applied mathematics, computer technology, statistics, physics, astronomy, oceanography);
- the social sciences faculty (philosophy, political science, psychology, sociology, labor relations).

Preference is given to those people, who have recently received an academic degree and do not yet hold a serious position.

Stipends are granted for a period of three to 12 months in the amount of 3,600 rands (1 rand=\$0.30), which corresponds to the level of the monthly wage of a lecturer. They are paid in advance quarterly. Travel expenses in the amount of 9,000 rands are paid to foreign stipend holders. (It is necessary to note that rands are not exchanged abroad for another currency.) Supplementary payments for insurance, housing, and food are not provided for. The expenses for room and board for

students in 1991 came to 6,000 rands a year. Moreover, students annually spend about 1,500 rands on books, local travel, and other needs.

Written applications with a detailed program of the proposed research, a transcript of the grades from the appendix to the diploma, and the names of two references should be submitted by 31 July. You will receive a response in late September.

It is possible to receive more detailed information at the address: 103050, Moscow, Ulitsa Sadovaya Triumfal'naya, Building 2/30. The Association of Postgraduate Education.

Reaction to Elbrus Developers, SUN Microsystems Joint Venture

*927A0213C Moscow POISK in Russian
No 19 (157), 2-8 May 92 p 12*

[Article under the rubric "A Presentation in 'The Computer Market': "SUN + Babayan?!"]

[Text] The news that one of the best developers of supercomputers, Corresponding Member of the Academy of Sciences Prof. Boris Babayan of the Institute of Precision Mechanics and Computer Technology (ITM i VT of the Russian Academy of Sciences), is working in close cooperation with the best known workstation producer, the American SUN Microsystems Computer Corporation, instantaneously spread through the civilized part of our world. On their pages THE WASHINGTON POST and THE NEW YORK TIMES, THE WALL STREET JOURNAL and THE FINANCIAL TIMES, THE SAN FRANCISCO EXAMINER and THE LOS ANGELES TIMES, WORLD and TIME, THE GLOBE AND MAIL and THE JAPAN TIMES allotted deserved space to it. Information reports flew over the channels of ABC, CNN, NBC, and CBS.

In our country the reaction was considerably more reserved. One of the leading specialists in the area of the operation of UNIX stations expressed a rather unexpected opinion: "I do not know how prestigious such cooperation is for Babayan himself. And is it befitting of you and me to admire the fact that Bill Joy, who during the years of Babayan's prime ran around in shorts, deigned to avail himself of the mind and experience of one of the leaders of computer making?"

Well, this is indeed a theme for reflection. And, I think, we will yet return to it. But for the time being let us let Babayan himself speak.

"All our life we tried to make the fastest computer in the world. Someone tried to copy and improve the IBM. Someone broke into the maze, which has just been found by theorists, and immediately proclaimed the introduction in practice of absolutely new principles. We stewed in our own juice. And we began to understand too late that self-isolation had never brought anyone to any good, and as a result were no better off than before, although

what we had was our own. After all, they never made the computer. Although we had our own ideas and, as it turned out later, rather strong ideas.

"Take the same Elbrus-3, on which we worked so much. We have the wonderful architecture of a powerful and high-speed computer. And in spite of technological problems the computer may soon appear. While working on it, we learned to use as much as possible the parallelism of algorithms. And checks on an interpreter showed that our supercomputer in speed surpassed by a factor of almost three all the closest competitors. What is one to say about domestic analogs, when the American Cray VMP supercomputer, about which so much was said and written at one time, in the performance of the processors lagged behind us by a factor of two. Moreover, these are not our own computations, but the results of the check on the officially accepted Linpack test. But still the Elbrus-3 is not capable of competing with western equipment. And here is why.

"Once an American journalist interviewed me. He was also interested in the filling of our 'supercomputers,' about which he had heard a lot. And he almost fell off his chair when he learned about the characteristics of the circuits. I should think so: Only 1,000 gates (electronic devices for the switching of logic signals) are mounted on our chip. On American chips there are 150-fold more. The domestic electronics industry rejected our project on the assimilation of integrated circuits with 300,000 transistors, when abroad very large-scale integrated circuits with 3 million semiconductors on one chip were assimilated long ago. A difference of even 20-30 percent makes such a device uncompetitive. Now imagine a lag by an order of 10!

"If you put a Cray and an Elbrus side by side, even a layman will immediately notice our lag. The American super is a comparatively small device with a high technical speed. Ours is a gigantic one on the scale of computer hardware—a rack cabinet. With slow communications and low reliability.

"But we knew that our ideas promise very, very much. If a worthy application is found for them. We, like many scientists, began to seek partners abroad.

"Our ideas could be embodied on far from any base. Today in the production of computers there are three, in general, independent directions. In particular, for our purposes firms that manufacture personal computers were not very suited. But the production of supers had also experienced a certain crisis. Their complexity and expensiveness hindered the further development of the direction. Therefore, we decided to seek a partner among the companies that were engaged in the production of workstations.

"The company we needed ought to have had a number of peculiarities. For example, it ought to have invested considerable assets in this. It also ought to have conducted parallel programs. A careful analysis showed that

in Europe firms in practice were not engaging in development in the area of original architecture. The companies of the Pacific Ocean region had already determined their directions of activity and did not intend to change them. It was only then that we came to SUN.

"This may seem surprising, but the Americans immediately took an interest in our ideas. And received them with great interest. It is significant, I believe, that SUN Vice President Bill Joy, in spite of an enormous work load, allotted us several hours. An exceptional case, according to the testimony of people who know him. R. Ditsell, a leading specialist in the area of advanced operations, specially came to Moscow in order to become better acquainted with us. On saying farewell, he said: 'Here I again felt like a student. For me the world of a completely new architecture was opened.' The Americans, as it turned out, know how to listen. They see the prospects and strive to put them into practice. But what else does the scientist need?"

"We have begun to work to our utmost on the SPARC-Elbrus project. We expect on the basis of our ideas to develop very fast processors for the SPARC-joint computers. But they will be manufactured, of course, abroad.

"This project is another opportunity for our science and information science to take part in the international process of the division of labor. We have been given a chance to make up for what was lost during the years of the great self-isolation."

Commentary of "The Computer Market." Not only our foreign critics, but also we ourselves have known for a long time that we do not know how to appreciate our own intellectual wealth. And, perhaps, it is necessary to be delighted that Babayan found an application for his efforts, that information science will advance owing to the work of our scientists.

Let it only be a consolation to us.

[Boxed item, p 12]

A Few Words About the Partner of Professor Babayan, by Dr. Cherian Ipen, President of Roy International Consultancy Inc., Representative of SUN Microsystems in Moscow

SUN Microsystems Computer Corporation is the largest graphics station producer in the world. In 1991 it held up to 40 percent of the world market in this area. For comparison: Hewlett-Packard held 16 percent, DEC held 15 percent, and IBM held 9 percent.

SUN intends to deliver to the CIS workstations of models ELC, IPC, IPX, and SS2 costing from \$6,500 to \$35,000 and multiprocessor systems—SPARCsystem 630 MP, 670 MP, and 690 MP—costing from \$60,000 to \$140,000.

SUN Microsystems also proposed to the states of the CIS the delivery of a limited number of SPARCstation SLC workstations costing \$2,600.

Decisions were also made on the supplying of the deliveries with integrated packages of applications programs, which were developed by Mentor Graphics Corps., Valid Logic Systems Inc., Prime, Structural Dynamics Research Corp., Landmark, and so on.

Scientists Comment on U.S.-Russian Cooperation in Nuclear Research

Kurchatov Laboratories Chief Golovin

927A0214A Moscow POISK in Russian
No 20 (158), 9-15 May 92 p 7

[Article by Prof. Igor Golovin, head of a laboratory of the Institute of Atomic Energy imeni Kurchatov, under the rubric "Sensations of Our Times": "Superenergy"—first three paragraphs are introduction by Dmitry Gvozdev]

[Text] Since the time that Academician I. Kurchatov with an openness, which was unprecedented in the middle of the 1950's, delivered in London a report on the prospects of control thermonuclear fusion in the interests of peaceful power engineering, this theme has always been talked about in the world scientific community. The threads of "thermonuclear contacts," as a whole, were not broken even during the era of the more than cold relations between the great powers. It is not surprising that any new large-scale initiative in the area is, as a rule, of an international nature: Such is tradition. Another thing is surprising: Projects, which do not blend at all with the usual notions about how thermonuclear facilities should operate, are appearing. Here scientists, fortunately, are not adhering so rigorously to traditions. Precisely one such bold project was discussed at a recent meeting of Russian and American scientists in Moscow.

The scientific research, which is aimed at the generation of electric power by means of nuclear fusion, until now was concentrated primarily on two concepts. The first approach is demonstrated in famous units like the tokamak, in which a magnetic field confines the hot plasma of hydrogen isotopes—deuterium and tritium—which are a kind of nuclear fuel. The second approach is fusion using inertial plasma confinement. Here a laser beam or a stream of high-energy subatomic particles strikes a small sphere—the target, heating and compressing the small quantity of deuterium and tritium, which is contained in it. Although in both of these directions work has been performed for several decades and leading scientific centers of the world are participating in it, according to the estimates of experts, tens of years will pass before the building of the first commercial electric power plants, of which the mentioned principles have been made the basis.

What alternatives is it possible to propose, taking into account all the allure of the "taming" of thermonuclear fusion, which is based on practically inexhaustible natural reserves of fuel for electric power plants of this type? And if in theory such a variant is known, how is it to be

implemented in practice using the mechanisms of international cooperation? The participants in the Russian-American scientific meeting, which was devoted to the development of promising directions of thermonuclear fusion, examined these questions. Here is what they related.

Prof. Igor Golovin, Head of a Laboratory of the Institute of Atomic Energy imeni Kurchatov:

Mankind is faced with an important task—to provide itself in the next century with ecologically clear and economically acceptable sources of power. Scientists throughout the world are preoccupied with the search for such sources. It is well known that the use of fossil fuels—coal, petroleum, and gas—pollutes the atmosphere and poisons the habitat. And their reserves are limited.

Might thermonuclear power not become such a source that is acceptable from the ecological standpoint? If we use deuterium-tritium fuel, toward which the research of all preceding decades was oriented, the achievement of radiation safety remains in doubt. After all, tritium is radioactive, and the interaction of deuterium and tritium produces very many neutrons. Consequently, in case of the operation of such a thermonuclear reactor radioactive waste will appear. Therefore, society is watchful, as in the case with conventional nuclear reactors.

However, in the last five to six years the possibility of developing different thermonuclear reactors, which “burn” deuterium, the reserves of which in the world ocean are inexhaustible, and helium with an atomic weight of 3, has attracted us. If such reactors are designed properly, it is possible to ensure radiation safety.

I also want to note another aspect. All classical development of thermonuclear reactors, which has been conducted since the 1950's, has been oriented toward the building of large, powerful—and, consequently, expensive—facilities. But is it impossible on the basis of physical principles and the technology of accelerators to develop far more compact and inexpensive reactors than those which it is planned to build on the basis of plasma physics?

Together with our American colleagues we gathered here, in Moscow, to discuss the possibility of conducting research that should answer this question. Today this direction is at the initial stage of development. But it is clear that it is necessary to engage in this. It is intolerable to miss such an opportunity, if it exists in nature. It is necessary to study in detail the area of so-called plasma beam formations. Reassuring reasons exist. However, it is impossible to say anything affirmatively until full-scale tests of the experimental plant take place. We discussed the possibility of organizing such experiments, which would demonstrate the feasibility of developing reactor facilities of the new type.

RAS Vice President Mesyats

*927A0214B Moscow POISK in Russian
No 20 (158), 9-15 May 92 p 7*

[Article by Vice President of the Russian Academy of Sciences Academician Gennadiy Mesyats under the rubric “Sensations of Our Times”: “Superenergy”]

[Text] The Russian-American meeting, which the University of California, Advanced Physics Corp., and the Russian Academy of Sciences organized, was devoted to the development of promising directions of thermonuclear fusion. Prof. Bogdan Maglich once told us that now in the United States the technologies, which satisfy three conditions, will receive support. First, this should be **High Tech**—the highest level of technology. Second, they should be ecologically safe. Third, they should have a potential application to future space programs.

The direction, which we are discussing, meets all these American standards, and it is entirely capable of finding support.

At present an agreement between an American consortium and individual institutes of ours has been signed. But detailed elaboration is required. Further financing will depend on the success of the talks. I want to note that this is one of the fields, in which the authority of Russian scientists in the world is very great. If Russian scientists were to oppose this program, it would probably also not go right in America. By having an agreement with us, and specifically with a number of institutes, the Americans will have a very strong trump card so that this program would be launched on a rather broad scale, inasmuch as, although there industry is providing a part of the money, it is also no less important to obtain the corresponding appropriations from congress. In February of this year I and my colleagues had occasion to meet precisely with congressmen, having been directly in the U.S. Congress.

A peculiarity of the situation with the new research program is the fact that many facilities, which are suitable for research in this direction, have already been built for a number of other projects, including here in Russia. We have the corresponding facilities and know how to make them. Therefore, we came to an understanding with our American colleagues to cooperate in the following manner.

First, theorists should collaborate.

Second, it is possible to use the already available facilities.

Third, we will use the promising equipment which we develop both in accordance with our own plans and under contract.

In our country such facilities will be built almost for certain in Tomsk—at the Institute of High-Current Electronics, in Novosibirsk—at the Institute of Nuclear Physics, and in Moscow—at least at the Institute of

Atomic Energy imeni Kurchatov. While in all in both countries, as was already noted, six facilities should be built simultaneously, so that there would be a sort of competition.

In this program the fact that, as is proposed, the 100 Russian scientists, who are working most actively in this field, will receive their wage in currency, working here, at our laboratories, and without going to America, is unusual. This is extremely important. By American standards the amount, perhaps, is small—\$500 a month, six months a year. But the scientists will also receive here their usual wage.

If 20-30 lead associates were to leave the institute, the institute would cease to be.

But people are now leaving for business and are going abroad. Today it is necessary to support scientists.

Of course, the program, about which we are talking, does not at all mean that it is necessary to abandon other directions of research in the area of thermonuclear fusion.

Advanced Physics Corporation President Maglich

927A0214C Moscow POISK in Russian
No 20 (158), 9-15 May 92 p 7

[Article by Prof. Bogdan Maglich, president and lead scientists of Advanced Physics Corporation, under the rubric "Sensations of Our Times": "Superenergy"]

[Text] American and Russian scientists in the last 10-15 years independently approached the idea of thermonuclear fusion on the basis of advanced fuel. In case of this fusion a negligible number of neutrons would be produced, therefore, it is also called neutron-free fusion. This does not mean that there are no neutrons at all. But there are substantially fewer of them than at traditional thermonuclear facilities. We came to the conclusion that if the experiment with advanced fuel is successful, this will open a new road to the technology of compact radiation-safe power facilities. The agreement of the Russians to take part in a scientific program costing \$100 million, which in English is designated by the abbreviation SAFE (such an abbreviation was chosen very aptly: It is perceived by the ear as the word "safe"—Dmitriy Gvozdev), was a result of the current meeting.

It is proposed that work will be performed simultaneously in six directions for the purpose of developing six different experimental facilities. A portion of them will be built in the United States, a part will be built in Russia. Experiments on the obtaining of power by means of thermonuclear fusion will also be conducted at them. The technology of beam self-collision, which is being developed both in Russia and in America, is the basis for all this. In installations of this sort a beam of charged particles collides with itself. Here a temperature of 10 million degrees has already been achieved.

According to the concept, which is now widespread in the United States, it is necessary "to make sense" of an invention, which can be used as a source of power, not only in university laboratories, but also in industrial companies. In our case such a symbiosis is present—there is a university in California, which Prof. Norman Rostoker represents, and a company, of which I am president and at which prominent physicists work. For example, Nobel Prize winner Glenn Seaborg is company chairman. We expect that next year four American universities and four corporations will join the SAFE program.

For us it is important that we received the support of Russian scientists. I can say that in Russia there are excellent experts in the field of thermonuclear fusion. It is very important that, for example, one of the participants in our meeting, Prof. Vitaliy Bystritskiy, has in his laboratory a new injection technology. While Prof. Igor Golovin gave the key report at an international conference on neutron-free fusion in 1989. He was the first person in the Soviet Union to think of and propose using in fusion advanced fuel. We are also satisfied with the fact that Academician Yevgeniy Velikhov agreed that in the field of thermonuclear fusion it is necessary to conduct parallel research in various directions. This is a new stand.

On the part of Russia five institutes, apparently, will participate in the program. Professor Rostoker and I came to the conclusion that half of the scientists, who will be involved in the projects and will begin to receive the corresponding pay, should be young people, not over the age of 30. It is impossible to make a revolution with people who imagine too well what should be done.

It must be said that the work on neutron-free fusion in the United States was financed in part by the Air Force. The reason was that this source of power was regarded as one of the promising versions which, perhaps, are suitable for satellites and spacecraft.

Small size is one of the advantages of facilities of this type. This is achieved by the use of the most advanced technologies, for example, superconducting magnets. I believe that with improvement these reactors will keep on decreasing in size.

But an electric power plant, which consists of small modules, is exactly what power engineering needs. Industry would like very much to receive such modules. But, as you know, America is strong when the time of mass production comes. And if the new power plants will be series produced, it is possible to reduce their production cost.

I hope that the time will come, when by means of the new method it will be possible to obtain inexpensive electric power.

University of California Professor Rostoker

927A0214D Moscow POISK in Russian
No 20 (158), 9-15 May 92 p 7

[Article by Prof. Norman Rostoker, the University of California-Irvine, under the rubric "Sensations of Our Times": "Superenergy"—last two paragraphs are conclusion by Dmitriy Gvozdev]

[Text] I had worked in the field of thermonuclear fusion for nearly 20 years. Professor Maglich had also worked nearly 15 years in the same direction. And only a few years ago did we understand that we were trying to do practically the same thing—independent of each other, without having met once during that time...

My work was financed not by the Department of Energy, but by the U.S. Department of Defense. But we now see that this technology can be useful for an alternative approach to thermonuclear fusion, namely the approach, to which the conference held here was devoted.

Now there is no longer a need to work on the former scale on military programs. And now an opportunity is appearing to turn the best forces, the most talented scientists both in Russia and in the United States for the solution of the energy problem. It is the most important problem of our times from the standpoint of ecology. Either we will solve it or we will arrive at a change of the climate, which will alter the essence of life on our planet. For present power generation is the most important factor of environmental pollution. This problem is no less important than defense. It merits the same level of attention as the defense program did at one time.

Since 1964 I have regularly been to your country, approximately three times a year, and cooperated with many scientists here in Russia. With great pleasure I will also now continue joint work with them in such an important field.

The accelerator, which we are building, is not a gigantic accelerator, but one that could fit even in an ordinary room. This is a pulse accelerator with high currents.

The proposals, which we are discussing, are intended for implementation over five years. There is, of course, a risk, inasmuch as much for the present is unknown. But we either will achieve success over these five years or will

terminate the program. We are proposing financing in the following proportion: 60 percent of the assets will be received from industrial companies, while 40 percent will be state financing on the part of the American government. This type of financing differs somewhat from what was proposed earlier. For industry, which will use this latest technology, is very interested in its success. This is a very important feature of the proposed plan.

For POISK readers there is nothing surprising in the fact that American physicists are willingly inviting namely Russian scientists to be partners in the implementation, let us say frankly, of the fantastic project which promises a genuine technical revolution in power engineering. An article in the authoritative American journal PHYSICS TODAY, the translation of which our newspaper published at one time, testified to the great prestige in the United States of our specialists who are dealing with pulse technology. Its authors are leading American physicists, who for the first time received the opportunity to visit a number of our institutes, which were once closed to foreigners, spoke in very complimentary terms about what they saw and mentioned, incidentally, works of participants in the present conference—Gennadiy Mesyats and Vitaliy Bystritskiy. The contribution of Academician G. Mesyats to the development of powerful pulse technology was recently commended by an international award—the Erwin Marks Medal.

It is important to note that in this field of research not only scientific centers of the capital, but also regional scientific centers have been actively drawn into the orbit of international cooperation. And it is necessary to preserve this potential no matter what. The form of interaction, which was jointly chosen by Russian and American scientists, so it seems, is entirely "in step with the times." And even if five years prove to be insufficient to obtain substantial results, which confirm the promise of the new scientific direction, even if it in general is recognized as unproductive and dead-end, the scientific collectives of the country all the same will stand to gain. For the demand for original scientific equipment—and it is developed during such a program—is invariably great throughout the world. And the very atmosphere of openness, in which the leading physicists of Russia and the United States are now cooperating, cannot but contribute to new joint discoveries.

Newly Created Union of Ukrainian Scientists, Educators Justified

927A0209B Kiev VECHERNIY KIYEV in Russian
2 Jun 92 p 2

[Article by Doctor of Technical Sciences Prof. Vasiliy Kuzmenko under the rubric "Let Us Discuss": "Will We Also Dismember Science in the Future?"]

[Text] Scientists, just as other workers of Ukraine, are looking with anxiety into their future, having an abundance of proof that the situation in the scientific sphere as a whole is worsening. It is not even a matter of the material supply or, more correctly speaking, the lack of supply of our science. The problem is broader: Where are we heading and how?

The invariability of the slogan: "Science is at the service of the people," it would seem, makes it incumbent during this difficult time for Ukraine to increase the responsibility of all scientific personnel (and particularly "organizers" of science) both for daily work and for decisions (or for the lack of them) on "restructurings" and "construction projects" in science. However, namely this is precisely not being observed, and, on the contrary, processes, which are disastrous for scientific research, are developing: Provincial exclusiveness is increasing, the interest in in-depth development is decreasing, discipline is declining, the careerist and arrogant aspirations of those people, who were not lucky or who were unable to catch the scientific firebird, have increased significantly. The last one is confirmed, in particular, by the mass appearance in Ukraine of various kinds of scientific associations: academies (the Academy of Engineering Sciences, the Academy of Technological Sciences, the Engineering Academy, the Pedagogical Academy, and others), associations, unions, societies, and so on with the small enterprises and firms, which surround them.

The diversity of scientific structures, just as of social organizations in general, it would seem, is an indisputable benefit. And to a considerable degree, particularly with respect to social sciences and structures, this is actually so. But as to the engineering and technical sciences and in general the exact sciences, diversity is a benefit only on the condition, which follows from the essence of the sciences themselves, that they are "exact." In other words, there should be a unifying element, because several "exact sciences" on the same theme, which are not interconnected, are often not only unjustified parallelism and, thus, additional material expenditures, but also the unhealthy speculative competition of scientists, the servants of the truth, which, as is known, is one. If the consumer, who is the client, and the market in general evaluate and judge the competitors, who are the producers, by their goods, who can arbitrate between scientists, except themselves, since they work in the majority of cases on issues for the future, and not for today's market? Therefore, while also taking into account the narrow specialization of modern science, we

should strive not for the dispersal of scientists of the corresponding specialty, but for their "concentration" if only for individual intervals of time and if only in the general ideological respect. Such a periodic concentration of specialists to a significant extent is ensured by thematic conferences and similar meetings. This, however, is not enough, to which the experience of the leading countries of the world testifies.

We like to cite the experience of the United States, Japan, Germany.... However, while adopting (it should be noted, without proper comprehension) their economic system, in matters of science we are taking the opposite course: There exists there the traditional statewide uniting (although on a voluntary basis) of specialists in specific directions of scientific activity, while in Ukraine there is the establishment of "its own," very broad, single-type "academies" or associations, the orientation of which is determined sooner by the surname of the president than by the nature of research. What is more, it is possible to be an "academician" in engineering with the same scientific achievement, it turns out, at different engineering academies of Kiev or Kharkov, or else at technological academies as well. Such "pluralism" would be allowed to flourish, if there were specific unifying bodies, for example, such as in the United States the Society of Mechanical Engineers, the Society for Metals, the Society for Testing Materials, and other similar very authoritative public organizations, which even issue statewide standards. By joining such societies, specialists of the corresponding type can, of course, compete with each other and with whomever they like and can keep their own and firm secrets, but for the accomplishment of statewide matters of their field, as well as for the development of this field in their own narrow, "shop," interests they gather without fail at summer, winter, and other sessions in order to draw conclusions and to make a forecast for the future.

But try to put together something similar in Ukraine! Will some department of the Academy of Sciences of Ukraine really agree to a working association with the corresponding scientific or engineering society or invite it to come and without the arrogance, which is characteristic of many "members of the academy," associate in earnest with other, "rather lower," although certified, specialists?! Or, perhaps, did the newly formed engineering or other academies come forth with the initiative of the ideological unification of their colleagues in the specialty with all of Ukraine? The academies, scientific associations, and unions, in my view, have gotten too carried away with commercialization (I understand that it is not because of the "fat," but also, after all, not only for the sake of science), and the Supreme Soviet passed the Law on Science in this key.

During the times of stagnation the coordination of scientific research in the natural sciences and later in the engineering and technical sciences was assigned to the Ukrainian SSR Academy of Sciences. But this coordination was conducted, with minor exceptions, anyhow, just as everything that was done and is being done on a

bureaucratic basis, under compulsion, under the pressure of exaggerated, not genuine scientific authorities, who for their most part remained outside the Ukrainian SSR Academy of Sciences, in contrast to the favorites of the science department of the Central Committee of the Communist Party of the Ukraine and the presidium of the Ukrainian SSR Academy of Sciences. And I do not want to belittle at all the members of the now numerous "academies": They, as active people and ones who are not inferior in their level to the "immortals" from the Academy of Sciences of Ukraine, by the fact of the establishment of their own academies and by their membership in them are voicing an entirely just protest against anachronistic membership in the Ukrainian SSR Academy of Sciences and in the Academy of Sciences of Ukraine (although the leadership of several such "academies" and associations—either out of respect or out of caution—are declaring their "peaceful" intentions with respect to the Academy of Sciences of Ukraine headed by B.Ye. Paton), as well as against the division of scientists into the superelite and "others"....

The emphasis here with respect to the top echelon of the Ukrainian SSR Academy of Sciences and the Academy of Sciences of Ukraine is being placed not without grounds: I consider that precisely the bureaucratized leadership of the academy with its Stalinist structure of construction and management bears the maximum responsibility for the actual disunity of high-class Ukrainian specialists and for the fact that this disunity is increasing in Ukraine in contrast to other industrially developed countries. With such a policy in science (and fundamental opposition to it is also not evident on the part of the newly formed Committee for Scientific and Technical Progress attached to the Cabinet of Ministers of Ukraine) we not only will not make progress, but will also lag forever behind the leading countries of the West and the East.

Indeed, instead of uniting all highly skilled scientists from the academies, from higher educational institutions, and from sectorial scientific research institutes (and whoever is considered the most respected and authoritative, that is, the Academy of Sciences of Ukraine, should carry out such unification) into strong narrowly specialized departments or councils of the academy, the top echelon of the Academy of Sciences of Ukraine is continuing to split the scientific personnel of Ukraine. Determining by means of self-election the superelite in the form of academicians and corresponding members, it is continuing the implementation of the notorious principle "divide and rule." It has more than once been proposed to expand representation in the departments of the Academy of Sciences by means of doctors and candidates of sciences (and not only from the Academy of Sciences of Ukraine). However, such proposals are being ignored by the top echelon of the Academy of Sciences of Ukraine. The Committee for Scientific and Technical Progress attached to the Cabinet of Ministers of Ukraine in turn is preserving amorphism and division in the organizational principles of

Ukrainian science, since it is establishing not in a purposeful and democratic manner its own scientific and technical structures like the National Council for Science, about the composition of which it is difficult even to find out, while one all the more need not expect anything significant from this assembly of different levels, which consists of 100-200 people. As we already know from our recent history, such scientific organizational structures are specially established in order to secure the "OK" for the actions of sages who aspire to the leadership of science.

The cheerful slogans of the "organizers" of science about the uniting of academic and VUZ science as the guarantee of the development of basic science are being heard against the background of this. But it is also clear to the beginner in science that the unification of scientists is based not on arrogant or territorial principles (recently I heard on the radio that there is being established "the Lvov Academy of Sciences—in a region, where six academicians and several corresponding members and technological academicians work"), but on professional and ideological affinity. The United States, where tens of strong, authoritative specialized societies operate, has already been mentioned. We speak with no less enthusiasm about the scientific achievements of Japan. But in these countries there are also no provincial local academies (just as there is no all-Japanese academy-ministry) and there are also about 50 narrowly specialized scientific societies, of which all high-class specialists consider it an honor to be a member. Thus, recalling what Shevchenko bequeathed, "learn a foreign thing and do not renounce what is your own," I think, at last, we will come to the conclusion of the necessity of fundamental changes in the establishment of scientific unions.

One must not renounce what is one's own: Our Academy of Sciences of Ukraine as an association of efficient scientific research institutions, although not having analogs in highly developed countries, should, undoubtedly, be retained and developed. It is not a question of the disintegration of the Academy of Sciences of Ukraine. It is a matter of each department of it (and today there are about 15 of them) beginning an association (and, perhaps, not one) of all skilled specialists of Ukraine. And this unification should take place on a specific professional basis, and not on a caste (academician or corresponding member), territorial (Kiev, Kharkov, Lvov, and so on), or functional (instructor, scientific associate, inventor, engineer, process engineer, and so forth) basis. Trade union organizations exist for the general unity of instructors, engineers, and other specialists and should be strengthened, while scientific associations are a more "delicate matter." I am convinced: Scientific and technical progress in Ukraine will get going properly only when we have perfectly mastered this matter, inasmuch as it will ensure not only mutual understanding among specialists in their personal issues, including, if we are to be frank, issues of pride, but also the making of professional (at a high level!) decisions on all the important

problems of the corresponding direction, decisions in the interests of all the regions of Ukraine and in the interests of science, not its provincial affiliates.

This is much work, and, undoubtedly, it deserves attention on the part of the Supreme Soviet and the President. And, of course, here the activity and persistence of scientists of Ukraine should be properly displayed. As for the latter, the first step has been taken: The Union of Instructors of Higher Educational Institutions and Scientific Personnel of Ukraine—the first public organization, which can actually, without academic arrogance or territorial barriers, unite the interests of the largest (that is, VUZ) group of certified and beginning specialists with the interests of scientists of academic and sectorial institutes—has been established. The activity of the Union will be based on both individual and collective membership. And precisely the above-indicated narrowly specialized associations of all specialists of Ukraine (regardless of whether they will be established under the Union or under the departments of the Academy of Sciences of Ukraine), by working as collective members of the Union, will be able to create in the scientific surroundings of Ukraine an atmosphere of unity and great professionalism.

Greater Effort Needed To Reform Uzbek Science

927A0209A Tashkent PRAVDA VOSTOKA in Russian
29 May 92 p 2

[Article by Doctor of Philological Sciences L. Usmanov under the rubric "Point of View": "Will Cosmetic Repairs Save Education?"—first paragraph is PRAVDA VOSTOKA introduction]

[Text] Each time that you read advertising announcements about the willingness of scientists of our former country to go aboard this minute, if you like, for any job, you get out of sorts. Western universities, colleges, and scientific research centers are already now filled with "Soviet" specialists. Unfortunately, there are also losses among personnel of "the highest skill" in our republic. The fruits of the domestic squandering of the intellectual potential and of the indifference to the needs of the thousands of instructors of the higher and secondary school, scientific personnel, and the technical and humanities intelligentsia, who have slipped below the poverty level, will make themselves felt for a long time and negatively. Whereas it is possible all the same to stimulate the collapsed economy in a few years, it is possible to restore the collapsed system of intellectual labor and higher education only after tens of years.

The experience of Japan, South Korea, Turkey, Chile, and other countries, which were able in a short time to raise themselves to the level of the leading countries (while Japan became a leading economic power), testifies that precisely large investments in scientific educational structures were one of the important factors of their successes. But in our country for some reason they are somehow linking all hopes very mechanically with the

formation of a market economy. Do we not understand too narrowly the nature of market relations? This, incidentally, is spoken about in the article "What Kind of Future Will We Acquire?", which is quite controversial, but is appealing for the pointedness of the posing of complicated socioeconomic questions of the development of the republic.

To say that in Uzbekistan people do not understand the importance of the scientific educational factor would be entirely incorrect. A large number of ukases of the president and governmental decrees, including the increase of the wage for scientists, instructors, and teachers, are aimed at the improvement of our scientific educational system. Hundreds of our boys and girls have gone abroad to study. The most progressive forms of the Turkish model of education are also being successfully assimilated in the republic. Scientific contacts are being rapidly developed. But is this enough and is this not more like the cosmetic repair of the old, dilapidated building of education and science?

It is not only that as before the administrative command system of the management of science and education, which for a long time has needed reorganization and the elimination of unwieldy, sluggish, and inert ministerial and academic departmental structures, remains. Precisely this system suppresses any initiative and fresh idea from below.

Recently K. Dzhambabayev, rector of the Andizhan Medical Institute, appearing on the pages of the newspaper PRAVDA VOSTOKA, wrote that the republic is drawing near the problem of the overproduction of medical personnel. Now we have more physicians per 10,000 residents (27) than on the average for the country (22) and in the United States (10-12). Meanwhile every resident of Uzbekistan knows how difficult it is to receive treatment here and how high infant and general mortality is in the republic. The low professionalism of our medical personnel became long ago the talk of the town on the pages of the central and foreign press. And is it really not here that it is necessary to seek means of improving our medicine? Or here is the following fact. A huge army of our philologists, historians, physicists, engineers, and so on are working not in their specialty, but as salesmen, drivers, militia personnel, and others. They say that candidates of sciences have also appeared among salesmen. Why do we graduate each year an armada of specialists so that they would settle wherever they want, while the economy of the republic as before needs personnel? Uzbekistan holds one of the last places among the republics of the Commonwealth in the standard of living of the people and the development of the economy, but one of the first places in the number of medal winners, specialists with a higher and secondary specialized education, candidates and doctors of sciences, and even academicians.

The trouble is not that we have few specialists, but that they are poor and many of them do not make any sense.

I am afraid that during all the recent years of existence of our republic ministries an erroneous strategy of the development of the system of secondary and higher education continued to be developed. They are pursuing the gross in the certainty that quantity turns into quality. But such a conversion exists only in Marxist-Leninist philosophy, while in life the matter is more complicated. In my opinion, it is necessary not to open, but to close educational institutions. First of all those, with respect to which there are already enough specialists and at which there are no skilled teaching personnel and no sound modern material base. To reinforce with the assets, which have thereby been released, the remaining institutes, faculties, and chairs, without forgetting the differentiated increase of the wage of professors and instructors, who are working professionally on their own educational and scientific tasks. While the addition to the universities and institutes of the republic of new ones will only disperse the educational, personnel, material, and scientific potential of the existing system of higher education. Will it not turn out that we will hastily put together feeble institutes and will chase the usual defective output, and for long years will incorporate hack work in the operation of these educational institutions?

It seems to me that it is necessary to change over more determinedly from extensive forms of education to intensive forms. And here is what is to be done with professors and instructors, two-thirds of whom according to their professional qualities cannot teach at a higher educational institution. The whole trouble is these weak personnel, who have shielded themselves well with a barricade of academic degrees and titles. This is the basic reason why the higher school is skidding and why our creative research is so ineffective, why cliquishness, clannishness, nepotism, and graft are flourishing at institutes.

It is necessary to seek a way out of the formed situation in such modernization of the educational process at the higher educational institution on a contractual, control, and rating basis, which would force out professionally weak personnel and would force the others to "take themselves in hand." It is necessary to bring oneself to take an unpopular step—the reduction of staffs, having looked after, of course, those people who will not satisfy the rigorous and high requirements. It is necessary already now to reduce significantly the recruitment of students for the specialties, with respect to which there is the overproduction of personnel.

And, undoubtedly, it is necessary to give complete freedom to institutes, requiring only the implementation of the end results. And it is possible to do all kinds of things for the improvement of the work of higher educational institutions, scientific institutions, and creative centers. But here is what disturbs me: We write, submit one project after another, and advise, and everything vanishes in ministerial and departmental structures. The impression is forming that ministries and departments, on the one hand, have become even more invulnerable and, on the other, to an even greater extent have lost the

ability to control the complicated situation. I consider that for the stimulation of activity it would be necessary to exempt or relieve from tax assessments and numerous obstacles VUZ science and production operations on their way to a market and currency receipts. A set of stimulating preferences can in many respects save institutes and personnel of the higher school from ruin, flight to private organizations, and degradation.

Latvian Academy of Sciences President on Science Crisis

927A0205A Riga SM SEGODNYA in Russian
20 May 92 p 3

[Interview with Academician Yanis Lielpeters, president of the Latvian Academy of Sciences, by Renata Laricheva: "Over the Abyss and in the Thorns"]

[Text] This happened on 31 January 1686. Near the estate of Rauda in Kurlyandia, a beggar was dragging himself along and encountered something unusual. As it follows from the ancient description, it was a "peculiar substance which fell from the sky along with the snow during a violent storm. None of the local residents dared to touch this substance, fearing magic." Only the beggar picked up a piece of the black mass, in order to show this wonder to the residents of the neighboring estate.

How the scientific spears would clash later! The famous French physicist Biot considered the "meteorite cotton" from Rauda to be matter from the northern lights, which the northeast wind carried to earth. The physicist and chemist Teodor Grothus hypothesized that along with aerolites also exist "aerophytes," sky plants, which fall to earth from the same regions of space. Researchers of later days considered this some kind of pseudo-meteorite, a dried layer of earth's plant growth, lifted up by the strong wind that raged in Europe in those days. In all this scientific debate, the name of the courageous beggar was not preserved. However, no matter what has been written since those days about the first Latvian scientists, for me personally he is still the first, the nameless researcher who was not afraid of magical charms. From my office window, the "skyscraper" of the current Academy of Sciences is well visible, and I ever more often recall the profession of our first national scientist, a beggar. Today, 300 years later, it seems, this social position can still be claimed by academicians, scientific associates, and the intellectual elite of our unhappy society. Our talk with Academician Yanis Lielpeters, president of the Latvian Academy of Sciences, is about this.

[Laricheva] Above all, is it true that the Academy of Sciences is being evicted?

[Lielpeters] We recently received a letter from the gorispolkom to the effect that the Academy of Sciences must evacuate the entire building by June, without being given other premises. However, today, as far as I know, the Ministry of Justice no longer claims this building. I think that for now we need not worry—until the next time.

[Laricheva] The situation of an unemployed scientist is more tragic, than that of a worker, because this is a very narrow "ecological niche." He has spent his whole life specializing in one scientific problem....

[Liyelpeters] A conference of all European academies of sciences was held in Sweden, and representatives of the Baltics and former Union republics were invited. Its resolution directed attention to the position of the East European countries in science—a bad, ruinous position. Latvia is no exception here. However, the situation in the Russian Academy of Sciences is no better. They are allocating money only to pay salaries, and intensive cuts are also occurring. Right now it is impossible to buy a good, new instrument, for there is neither money, nor a seller.

[Laricheva] The current "divorce" from the academies of sciences of the other republics is an objective reality, and the picture with the supply of reagents for applied work is sad.

[Liyelpeters] We have decided not to interrupt existing scientific ties. Contacts among scientists are independent of the system. The fact that there are fewer scientific conferences is an obstacle. Whereas previously there was one conference after another in the House of Science in Lielup, this winter there have been virtually none. However, we still hope that in time we will manage to create a complex here for holding scientific events, some kind of international center. After all, we even have excellent tennis courts here.

[Laricheva] The brutality of our day lies in the struggle for survival, and something will happen to the academic institutes. Perhaps, only three out of 17 will remain in a year?

[Liyelpeters] I think that 14-15 will remain. Essentially, the situation is difficult in all of them. Humanitarians do not earn anything: Previously the academy institutes earned roughly half the money themselves. Right now it is very hard to conclude contracts for scientific research. After all, many orders came from large union enterprises, which have also become poor. Right now, in general, few are thinking about tomorrow. We have no other funds except the budget, which is supporting science. In Germany there are more than a thousand institutes, both private, as well as individual companies, and at the same time scientists there believe that they are not being given much money.

[Laricheva] Right now, basically 40-year-olds are going into politics. Can you say what the fate of 40-year-olds is in science today?

[Liyelpeters] This is a very good age for active work. It is a pity, but there could be more of them. Many are willingly going into joint enterprises and organizations with a commercial orientation. Indeed, one must feed one's family, and the average salary in the academy is lower than the republic average. However, it is especially

sad that they are ceasing to work in science. Unfortunately, we have almost no innovation companies which would work on applying scientific developments. This is explained by the overall situation in the economy: There is no need for scientific developments in an industry that is cutting back.

[Laricheva] Are there any signs of commercialization of science?

[Liyelpeters] There have been some attempts. The previous deputy director of the Institute of Wood Pulp Chemistry, Kreytus, organized his own production company and no longer works in the Academy of Sciences. However, this is the only case: Commercial talent rarely mixes with scientific.

[Laricheva] Once again, we must learn from the West. Maybe their entrepreneurs, having learned a bit more about the level of our science, will invest n-th sums in it. A channel of communication has been opened up, since the Danes have decided to throw open a window onto the European scientific world for us, having undertaken an expert study of Latvian science.

[Liyelpeters] The Danish expert study has already begun, and the Danes have visited several times. Right now, representatives of our council on science are going to Denmark and taking 40 kilograms of documents with them. The Danes will have to work on this and compile their assessment by the end of the year. It will be interesting to compare it to our own, domestic evaluation.

[Laricheva] Might the Danish colleagues be rendering us a well-intended service with the opposite effect, having let the world familiarize itself with our ideas? After all, we have always had problems with timely patenting, and in general this costs a lot of money?

[Liyelpeters] Scientific potential is a tremendous wealth, but not just for us. To this day, the republic has not passed the Law on Intellectual Property. The Supreme Soviet, for instance, holding a reading of the law on science a year ago, then set it aside. Only the Charter of the Academy of Sciences, presented by us, has become an incentive for working on the law again. Right now, it has been accepted for a second reading.

[Laricheva] What do you consider most fundamental and important in the Charter?

[Liyelpeters] The definition of the Academy of Sciences as a non-state organization. This is very important. It gives one the freedom to express one's opinion on all matters.

[Laricheva] That is, long-awaited independence. After all, due to the former serf-like dependency on ideology, science's rating as such is now much lower than one would like. People sometimes say: "How many years have we been supporting you scientists, and we have to feed you again?"

[Liyelpeters] As regards the social sciences, this is true, but this does not concern the natural and technical sciences.

As far as the interrelations of man and society are concerned, before this was regulated from above. However, in an open society it is the scientists' duty to inform people about their work, or else the impression is created that they are spongers. We must now understand that people have the right to demand information and results. So, public opinion will depend on the scientists themselves, if they can show what is needed.

[Laricheva] However, how will the basic scientists prove that they have a right to life? Yet, not a single field of science will move from a standstill without basic research.

[Liyelpeters] Science is a part of culture, but we are having a cultural tragedy. You yourselves write in the newspapers that we are already faced with the threat of shutting down the hospitals.

[Laricheva] I sense that life before 1940 has become an obsession for many, which means the Academy is also something alien. After all, it did not exist at that time.

[Liyelpeters] This is so, although back then Raynis, as Minister of Culture, had said that it was necessary to create it. However, they managed to organize only the first part of the future academy, the Institute of History. Ulmanis supported this idea. We have a joke that Beriia later implemented Ulmanis' ideas, in signing the decree to create the Latvian SSR Academy of Sciences (he was then deputy chairman of the Council of Ministers, or something like that).

[Laricheva] As dark a jest, as there has ever been in history. It seems to me, yet another such is being readied: The Law on State Language will not only slow science down, but even throw it backwards. Will not talented people, unable to write a scientific article in Latvian, end up unemployed?

[Liyelpeters] We are hoping for the adoption of the Law on Science, which will protect us. However, of course, henceforth the majority of articles will be in both English and Russian: We must not break the continuity of the scientific information space and create some kind of republic mini-science for ourselves. I see no possibility of losing brilliant minds for reasons of language.

Report on Uzbek Academy of Sciences 1992 General Meeting

927A0197A Moscow PRAVDA VOSTOKA in Russian
7 May 92 p 2

[UzA article: "Academic Science: Radical Changes Needed"]

[Text] The annual general meeting of the Academy of Sciences of Uzbekistan was held on 5 May. Its participants discussed the tasks of scientific collectives in

accelerating scientific and technical progress and in raising scientists' contribution to implementing the radical economic and social changes occurring in the republic.

M.S. Salakhitdinov, president of the Academy of Sciences [AN] of Uzbekistan, opened the meeting. K.G. Gulamov, chief scientific secretary of the presidium, corresponding member of the Uzbek AN, gave a report on the basic results of work by the scientific research institutions of the republic AN.

It was noted that the last year of the academy's activity was marked by the republic's transition to market relations, the formation of the bases of an independent democratic state, and the solution of key problems of social development. The Academy of Sciences was transformed into an independent, self-managing organization precisely in this period.

In the academy institutions, research was conducted on 633 themes in the framework of 49 scientific fields, including those such as nuclear physics, microelectronics, mathematics and computer engineering, power engineering, biotechnology, and the creation of new materials and substances. About 100 developments have been used in sectors of the national economy, with an expected economic effect of more than 120 million rubles. A number of important results were obtained both in basic research, as well as in applied work—in high energy physics, modern areas of mathematics, the chemistry of natural compounds, and earth sciences.

At the same time, the meeting participants said, there is a serious lag in a number of fields that determine scientific and technical progress.

The need for a cardinal review of the bases for forming scientific and technical policy in the republic was emphasized at the meeting. The participants noted that the market has not yet fully restructured economic ties in the production sphere and, as before, it remains poorly receptive to scientific and technical innovations. For example, in the last two years, one-third fewer developments than before were transferred to the production sphere for use.

The number of people working in the Academy of Sciences has also decreased. About 400 associates have left the research institutions, and more than 600 people have left the design organizations. As a rule, the most talented youth have gone into better-supported spheres of activity: industry and free enterprise.

The problem of strengthening the material, technical and experimental base of science, where an especially unfavorable picture has taken shape, requires a constructive approach. The institutes do not have funds to acquire the necessary equipment or reagents. The supply of science via the commodity and raw materials exchanges is taking a heavy toll on the puny budget of academic institutions.

As the speakers emphasized, the institutes should more actively organize direct contacts with foreign countries and conclude direct agreements with foreign companies on the creation of joint enterprises and laboratories.

It is necessary to mobilize the efforts of scientists to solve problems, such as development of the cotton complex, electronics, scientific instrument building, the rational use of mineral and raw material resources, and energy conservation. Research to create new compounds and biotechnologies for nature-preservation, national economic, and medical purposes should take priority. It is also necessary to increase the activity of jurists, economists, philosophers, historians, linguists, and literary critics. The improved education of young scientists, as well as the use for this of the possibilities of training them in large world scientific centers, should be an important factor in the intensive development of science.

The meeting passed the new statutes of the Academy of Sciences of Uzbekistan, which regulate its activity under the new socioeconomic and sociopolitical conditions. The presidium of the republic Academy of Sciences was instructed to ensure its registration in the established procedure. A report on the prospects of work by the Higher Certification Commission (VAK), created in Uzbekistan, was made by its chairman, B.A. Tashmukhamedov.

Prime Minister of Uzbekistan A.M. Mutalov addressed those gathered.

M. Karabayev, deputy prime minister, S.S. Saidkasyimov, state advisor to the president of the Republic of Uzbekistan, N.R. Yusupbekov, chairman of the State Committee on Science and Technology of Uzbekistan, and the leaders of a number of ministries and departments participated in the annual general meeting.

Lack of Financing Impedes Rocket Fuel Conversion Plan*927A0199A Moscow RADIKAL in Russian
No 17, 15 Jun 92 p 11*

[Article by N. Trofimov, doctor of technical sciences, and A. Dunets, candidate of technical sciences: "Rocket Fuel—A New Commodity?"]

[Text] In connection with the sharp reduction of armaments, plants that produce rocket fuel have virtually come to a halt. The accumulated fuel reserves are being stored in special warehouses and in the tanks of military missiles. The MBRs [intercontinental ballistic missiles] are being removed from military readiness, dismantled, and then destroyed. Serious problems are arising in this regard. The instruments, automation, and other valuable components of the missile and the metallic parts, after appropriate processing, can be used in various sectors of the economy, and the oxidants can be used to produce mineral fertilizers. Yet for now there is no way to use the fuel.

In practice, ways to use the fuel, dimethylhydrazine, directly have not even been considered. Besides this, it must be taken into account that in accidental spills, dimethylhydrazine, entering the soil and water tables, breaks down extremely slowly and is a threat to the surrounding environment and the plant and animal world, making it necessary to perform urgent work to convert the dangerous fuel into less toxic compounds, needed by the national economy.

How do the Americans act in a similar situation? This problem does not particularly trouble them, because the U.S. ICBM is a solid-fuel system. They have their own difficult problems. However, let us leave these to the Americans.

Some specialists suggest burning the fuel in a manner similar to what is being done with the solid-fuel blocks of missiles in the U.S. However, this requires significant additional funds to create ecologically clean incinerating systems. This approach, in our opinion, is unacceptable.

Today, chemists specializing in fuel, united into an association on the industrial use and reprocessing of military and technical equipment, are seeking ways to use dimethylhydrazine in the interests of the national economy in the framework of a specialized program. In our opinion, it is most expedient to use the fuel as a raw material in the heavy organic synthesis industry. The work on utilization should be comprehensive, beginning with the development of a technology for obtaining new useful products with the subsequent creation of industrial facilities at chemical plants.

Research has shown: The reprocessing of missile fuel as one of the raw material components for obtaining corrosion inhibitors in the gas and oil industry is preferable economically and ecologically. About 100,000 tons of

such inhibitors are needed annually, and their production and import barely cover the need by one-third.

According to rough estimates by economists, implementing the proposals to reprocess dimethylhydrazine in the industrial production of corrosion inhibitors and quartizine will make it possible to obtain multi-million profits and substantially improve the ecological position of the rocket fuel storage sites. Incidentally, about quartizine. This is a new, effective plant growth regulator. It functions in a broad range of concentrations and is less toxic by a factor of 5-7 than chlorcholine chloride (a TUR [expansion unknown] preparation) currently used for these purposes. The use of quartizine in the processing of potatoes, lupine, and cereal crops makes it possible to raise crop yield significantly, as verified by field experiments with samples of quartizine obtained at a pilot installation.

Dimethylhydrazine can also be used to make hardeners of epoxy resins, used to produce very strong composite materials, and highly effective solvents for cleaning natural gas of sulfur-containing impurities. Meanwhile, such solvents are also purchased on import.

In our opinion, the indicated ways of using missile fuel are the most realistic for industrial enterprises.

Today, the absence of centralized financing and privileged credit, which is needed in order to complete the scientific research and development work and to create industrial facilities to produce the new, valuable products is impeding implementation of the proposals. Without solving the problem of finances, in our opinion, it will be virtually impossible to carry out the outlined programs.

One would like to hope that our concerns will be heard by the Russian Ministry of Economics and that the necessary funds will be allocated to solve the problems of using rocket fuel.

Conversion Problems of 'Secret' Scientific Production Association*927A0199B Moscow KOMSOMOLSKAYA PRAVDA
in Russian 3 Jun 92 p 2*

[Article by A. Khokhlov: "Are They Referring to Mars?"]

[Text]

Yes, They Are. And Maybe Even Much Farther.

Do you remember? A southern city, the year 1920. Clouds of cigarette smoke in the billiard room, a White Guard counter-espionage agent, who already knows what is going on, tells an "elusive avenger," laughing:

"Don't miscue, Valeriy Mikhaylovich!"

"I am trying, Mister Staff-Captain..."

A sharp thrust of the cue, and the popular actor Dzhi-garkhanyan disappears in clouds of smoke: A bomb, placed in the billiard ball by members of an underground organization, has exploded...

I am holding a sphere in my hands of precisely such dimensions and weight, only it is coal-black. If this explodes, perhaps only a silhouette on the wall will remain of me? Nuclear scientist Albert Semenovich Chernikov reassures me: The filling of this sphere is safe. The real spherical uranium-graphite TVEL (heat-releasing element) is not a great danger. The scientists and designers have placed five barriers in the path of the radiation.

The "billiard" TVEL's were created for a new kind of nuclear reactor, the AES-VTGR. If from 200,000 to a million spheres are loaded into the reactor's active zone, a chain reaction occurs. The VTGR has a mass of various values, but the main thing is that in practice it is safe. The technical design was developed long ago, but the fourth block of the Chernobyl Nuclear Power Plant and perestroika "went off with a bang" almost simultaneously. Today, such reactors are being built throughout the world, except here.

Really, today the scientists and production workers at the defense "Luch" [Ray] Scientific Production Association [NPO] should have more than enough cause for offense against their native state.

The history of "Luch" began in 1946 with a small experimental facility. The Soviet Union had entered the nuclear race, and began the creation of its own nuclear industry. New materials were needed for the new weapon. They were created here, in a small town near Moscow. Here at the "Luch" NPO new technologies were developed with titanium, rare earths, and ceramics. Everything—from zero, everything—from ideas to the finished "good," everything—through their own efforts. The outstanding scientists M. Yakutovich and I. Gberdtsiteli worked at "Postal Box 12." Here they created the Soviet SOI [Strategic Defense Initiative, SDI] and also prepared for a flight to Mars.

Now we are poor and unfortunate. We are begging dollars of America and asking them to let Russia under the "nuclear umbrella" of SDI. It is no longer of interest whether there is life on Mars; one must survive oneself... However, how rich we are! I am not speaking of oil, timber, and gold (there are enough of these, too), but about the talent and minds of our people. Getting off a hopelessly dirty electric train and crossing the usual bedlam in the rail station square, one comes to the "Luch" NPO and sees a ray of hope for Russia. Incidentally, they do not let people in: The doors of this VPK [military-industrial complex] facility are closed. We were the first journalists allowed to visit this unique scientific center. However, other "doors" at "Luch" are open now: "Defense" is beginning to transfer high technologies to the national economy and to trade profitably abroad.

At the dawn of conversion, in whose twilight, evidently, more than one VPK enterprise will disappear, Academician I. Fedik, director of "Luch," proposed three principles to the NPO employees. Here they are. First: Not to "survive," but to develop. Second: Not to convert and not to "conserve" military technologies, but to adapt them to the needs of the civil economy. Third: To view the time of changes not as a calamity, but as a chance to go out into the world. "Luch's" chance of surviving under market conditions is high.

G. Babayants, director of the ceramics department, showed us transparent silicon carbide. There are no other technologies for manufacturing it anywhere in the world. In Holland, they cut a piece from a sample for analysis: They were unable to believe it was possible. Later, they quickly asked to conclude a contract for the delivery of this material, very necessary for the creation of lasers.

Another unique material, zirconium carbide with a 75-percent porosity, was also created in Babayants's "establishment." Items made of it do not change shape and dimension even at temperatures of up to 3,000 degrees Celsius, which opens up new possibilities for nuclear power engineering. Here they have learned how to make equipment out of silicon carbide for the production of integrated microcircuits. Until now, the American "Norton" and the Japanese "Toshiba Ceramics" companies had monopolized this world market. The Minsk "Integral" NPO has approved "Luch's" product: It surpasses world samples and costs all of 230,000 "[d?rev?nykh—word illegible]." The Byelorussians have already concluded a contract with "Luch" for 7 million rubles.

One of the interesting conversion directions is the work to create sodium sulfate accumulator batteries (SNAB).

"They can be used in electric automobiles, subways, and railroad transport," says laboratory head M. Golubev. "They are ecologically 'clean,' weigh less than lead batteries by a factor of five, and they are 85 percent efficient. There are already experimental models of the SNAB, and their series production is possible in a year or two.

Two hundred-fifty contracts have already been concluded, many with foreign companies. The biggest is the sale of the unique "Topaz-2" nuclear power facility to the United States. And this is not the "selling of the homeland." They are selling samples and goods, but "Luch" is faithfully keeping the technologies.

Nonetheless, regardless of the influx of rubles and dollars, not everything at "Luch" is favorable. High technologies are capable of bringing fabulous dividends, but, or course, it is not so easy or profitable to trade in them as in beer by the subway station.

"Our problem is that today in Russia, in the CIS, very few people need them," says Academician I. Fedik.

"Conversion must begin with an influx of finances into the VPK, and we already have taken a different path: Financing was cut fully two years ago," says science deputy Professor Yu. Nikolayev. "'Luch' can do a great deal that is useful for the civil economy, but after all we have spent our whole lives only creating reactors for military equipment. Give us a little time and a little money."

Twenty doctors and 160 candidates of sciences work at the "Luch" NPO. The average salary in the first quarter of 1992 was 1,434 rubles. The difference between those employed and those dismissed was 400 people (in favor of the latter, of course).

"If there is no financing of work or an increase in wages for a couple of months, I know many others will leave," says senior scientific associate Yevgeniy Lysenko. A candidate of sciences, he has worked at the NPO for 27 years. His salary is 1,500.

"Ivan Ivanovich," I asked Fedik, almost like Ostop Bender, "how much do you need for complete happiness?"

"Credit for 150 million rubles on privileged terms for one year. With this starting capital we will be able to bring all 17 conversion programs into series production. The businessmen or companies that give us millions today will receive billions tomorrow."

Are such being found? One would like to believe that not all business people in this country are engaged in selling chewing gum and poorly washed Western "second hand" clothing. The "Luch" company does not tie twig-brooms: Who will decide to look into the 21st century along with it?

Finally, I ask the attention of the curious, the inquisitive, and simply of spies. In the photograph you see Academician Ivan Ivanovich Fedik with a unique object in his hands. It is a metallic "lance," the technological channel of a Russian nuclear missile engine (YaRD). When about forty of these are gathered in the engine, it is possible to fly to Mars. Although, to be honest, for now there are only ground installations. Incidentally, according to estimates, it will be 10 years before the Americans can organize a flight to Mars. We could fly there sooner: The first ground version of the domestic YaRD was tested at the Semipalatinsk Test Range back in 1974. Except at that time there were no reliable carrier missiles. Now, they say, there are. But to make up for this, there is not much else. Our last test was in 1989....

Russia, Turkmenistan Sign Science Agreement

927A0210B Ashkhabad TURKMENSKAYA ISKRA
in Russian 29 May 92 p 2

[Article (TURKMEN PRESS): "They Came to an Agreement About Cooperation"]

[Text] The Academies of Sciences of Turkmenistan and the Russian Federation came to the agreement to preserve existing scientific ties, having continued jointly conducted research in common programs and projects. Cooperation in the training of scientific personnel will also remain as before. The agreement on cooperation, which was signed by the presidents of the Academies of Sciences of the two states, specified its basic directions. These are basic and exploratory research in the area of the humanities and the natural and technical sciences and the scientific elaboration of socioeconomic problems that are of great importance for the national economy and culture of Russia and Turkmenistan.

"The development of the Academy of Sciences of Turkmenistan is closely connected with the activity of scientists and scientific institutions of Russia," President of the Academy of Sciences of Turkmenistan A.G. Babayev told a TURKMEN PRESS correspondent. "The conclusion of the agreement will ensure the further expansion of scientific and technical cooperation of scientists of the two countries."

Politics Continue To Dominate Academy Science Reorganization

927A0177A Moscow MOSCOW NEWS in English
No 14, 5-12 Apr 92 p 5

[Article by Vladimir Yadov, Ph. D., director, Sociology Institute, Russian Academy of Sciences: "Science Mustn't Be Mixed With Politics"]

[Text] I had to speak up on that subject on several occasions lately, addressing a meeting of the Philosophy and Law Department of the Russian Academy of Sciences, the Presidium of that Academy, and other congregations of scholars, and levelling criticism at the social scientists who mix politics with science.

My concern is easily explicable: as a sociologist studying different dimensions of society I must—also as a committed citizen—give society a true picture of itself. However, the task becomes unattainable when scientific knowledge gets substituted by politics, academic ethics is replaced by interests of the profession, and everyone seeks to get the upper hand by any means available.

In the past substitution of the scientific approach by the political approach was the norm. I remember how a Communist Party dignitary publicly taught me a lesson: "We expect from you the data we need, and never the data we don't want." Some scientists still prefer to place themselves at the service of political structures. Imagine the feeling of a conscientious sociologist—from a professor of sociology down to a rank-and-file public opinion interviewer—who becomes aware of negligence, or of a ranking academician tampering with the facts. In short, we are once again facing the threat of sacrificing a scientific approach for political aims. But then what's the use of a science which is dependent on politics?

These thoughts were triggered by a scientific report on the socio-political situation in the country and the strategy of reform being drafted at the Russian Academy of Science. On February 11 Russian Academy member G. V. Osipov submitted the theses of the report to the Academy's Presidium for discussion. Questions followed. How reliable is the factual basis formed from the results of public opinion polls? Don't the political views of the author of the report interfere with his conclusions? I asked the author where he got the number of 40 per cent favouring a new Communist Party in December 1991 (which contradicts the results obtained by other centres, including the academic Sociology Institute). The answer was: from polling readers of the (pro-Communist) RABOCHAYA TRIBUNA (Workers' Rostrium) newspaper.

But it is obvious that people choose a newspaper reflecting their own political orientation. In my opinion this case was a direct falsification of public opinion. In this connection, I and several colleagues from the Sociology Institute and other scientific centres who believe in the impermissibility of biased interpretation of facts made our own survey of the social situation in the country before the Congress of Russia's Deputies.

This work was prompted not by personal ambitions but by a realization of the need to save the image of sociology, since certain students and practitioners seem to favour political gambling. I wouldn't like my Sociology Institute to be mixed up with its recent offspring—the Institute of Socio-Political Problems headed by Academician G. V. Osipov, who is also one of the chief organizers of the scandalous report being prepared for the attention of a certain Russian body of power.

I believe the report is now being changed following criticism from the Presidium of the Russian Academy of Sciences.

This shocking fact and many others have been dropped from the report. Nevertheless, Osipov published some theses of the report in an unchanged form in the RADICAL newspaper and distributed them among members of the coming conference on social and political aspects of the current situation in the country. A school of scientific thought indeed!

The border between science and politics is easy to overlook. The report mentions the "pointlessness of a constitution for Russia" and recommends that it be substituted by a decree valid for four years. It also recommends state price control for fuels, machinery, and fertilizers. The author expresses his disbelief in the effectiveness of the market in this country and calls for state regulation of the market, as well as salaries and wages. He also disapproves of privatization and suggests that "any attempts to draw up a balanced budget must be abandoned," disregarding the opinion of the International Monetary Fund. The author severely criticizes the Russian government "in general" but avoids names.

But what has this got to do with academic science and sociology?

Now imagine that this report is submitted for the discussion of the general public and the government as a report from the Academy. Someone will surely believe that sovereign Russia is in conflict with other CIS members and that the country is sponged by a "criminal-monopolist market," that the middle class is to be recruited from graduates of agricultural colleges and that the current economic situation is characterized by an "unprecedented slump in production" (what about the years when millions of Soviet citizens were starved to death?). Suppose someone discerns some deeper motive in the irrational opposition of the President and the legislators, after reading that "the law must be kept by everyone, from the president to a criminal?"

When I was appointed director of the Sociology Institute in 1988 I learned that some of my academic colleagues from a certain department of the Institute were in fact career KGB officers. I was stunned by information about that department gathered from classified documents. I began waging a small private war against them. I wasn't strong enough to separate this department from the Institute's structure. I could only "contain" their influence on the Institute's academic life. The KGB head of that department was replaced by another man (perhaps also a KGB, but they preferred to keep it from me now). Once, after a public opinion poll conducted at the request of the CPSU Central Committee (and concerned with ethnic issues), I officially commended sociologists actively involved in that poll and gave each one a reward. However, one of them refused to take it and told me in a patronizing manner that he had already been rewarded "by my superiors in the service."

The whole of that department was transferred to the Institute for Social and Political Research, comprising about one half of the staff of the new Institute. I hear that the Russian KGB has since abandoned the department. Nevertheless, the people who worked there must still remember their "school."

I'm against mixing human attitudes and professional work. Human honour is not the same as professional honour. No researcher should let his or her personal opinions interfere with work which must be impersonal. Like serious scientists we must doubt conclusions which perfectly tally with hypotheses or the preferred course of events. This position is accepted by sociologists all over the world. But there is no guaranteed immunity from partiality. I call it an eternal problem.

'Crisis' of American Space Program Described

927A0206A Moscow RADIKAL in Russian
No 17, 15 May 92 p 10

[Article prepared by Petr Daynichenko using foreign press articles; date and place not given: "Will American Reach the Dream?"]

[Text] Today the American space program is in a profound crisis. The reader may say: What is their crisis to us! However, the Americans are facing the same dilemma in space research, as we are: to continue expensive, prestige projects or to approach space more pragmatically. The answer is not as obvious as it seems. Even our experience is interpreted in two ways: Whereas supporters of the American "Freedom" space station confirm that we long ago outdistanced them, having created our "Mir" orbital complex, their opponents think that the creation of a space station should not be undertaken precisely because "Mir" has proven its ineffectiveness.

However, both the "pragmatists" and the "dreamers" note the crisis which the American space agency is experiencing today. Recent personnel re-arrangements within the NASA leadership evoked the hope among American observers that necessary reforms will nonetheless be carried out. The LOS ANGELES TIMES recently published an article by American journalist Greg Easterbrook. It could have been titled "How Should the American Space Program be Reorganized?" We offer the readers fragments of this article.

Old problems often lead government agencies into a fatal spin. When things are going badly, it becomes harder to attract good managers, the poor ones make the situation even worse, and it becomes even harder to attract the appropriate talents.

In the 1980s, this sad ailment struck NASA. This is only one way to break out of this vicious circle. One must find a gifted administrator, who realizes that an organization which has fallen into such a trap has only one path: to become effective and useful once again.

Right now, it seems, NASA has managed to find a suitable person. This is Daniel S. Golding, approved by the Senate at the start of April. What kind of person is this Golding, what circles does he represent, and what precisely should he do?

In February, President Bush retired Richard Truli, head of NASA since 1989. A retired admiral and former astronaut, Truli represented the old guard, who considered the "shuttle" the answer to all space problems. Truli's retirement is the work of Mark Elbrecht, chairman of the National Space Council, headed by Vice-President Dan Quayle. Elbrecht and Truli did not like each other. Elbrecht disliked Truli because he believes that NASA is freezing all of Quayle's reform attempts. And Truli viewed Elbrecht as a tiresome gnat, buzzing about his ear. However, Elbrecht worked in the White House and could also buzz in the president's ear...

Golding's appearance in the chair of the leader of NASA seems unusual, because he is an outsider of a sort. He spent a large part of his career at TRW. Although TRW is a well-known aerospace contractor, this company has not done business with NASA for a fairly long time. And here is why. During the "moon race," TRW was the

space agency's favorite, developing important components for the "Apollo" launch vehicle. When this project was finished and NASA was thinking up new ones, TRW stepped forward with its idea of creating a large one-time delivery system. According to this concept, NASA would build relatively cheap unmanned missiles for getting a large part of the load into orbit. However, NASA decided to take a risk and put everything on the "Shuttle," an expensive system based on the idea of the constant presence of astronauts, even for ordinary transport flights. In the first years, critical for financing the "Shuttle," TRW brought NASA into a fury with the results of its own tests, which proved that their unmanned delivery system was cheaper and more practical. TRW continued to remain the leading producer of communications and "spy" satellites, thus remaining a buyer of NASA's services: After all, the satellites had to get into orbit somehow. When the price of launches increased, when the "Shuttle" turned out to be far more expensive than supposed, and especially after the destruction of the "Challenger," when launches were stopped, TRW suffered financially.

Golding did not participate in the development of this delivery system, but spent his entire professional life in the "aura" of NASA's opposition. He is the first leader of NASA, not inclined to have a reverential attitude toward this organization.

At TRW he did some research for the SDI program. Many adepts of SDI hate NASA, because it is impossible to create a space defense if there is no cheap and practical way to get a number of space objects into orbit. Elbrecht felt that he should seek suitable allies for reforming NASA precisely in the Organization to Implement SDI. Elbrecht discovered that this organization heads a design bureau for the development of a cheap delivery system. The existence of such a bureau had been concealed, not from the councils, but from NASA. Last year, Elbrecht pushed Maykla Griffin, director of this program, through to the post of assistant head of NASA. This appointment may lead to profound changes in the agency. Thus, possible reformers have occupied the initial positions. Will they succeed in doing anything?

Management's reforms may run into diseases that are gnawing away the very foundation of NASA. The first of them is the fact that NASA will not start working again until it rationalizes the system for getting spacecraft into orbit. Right now they are being sent into space irregularly, with long interruptions and with great expenses, up to a million dollars for one "Shuttle" flight, by some estimates.

In order to deal with this, Greg Easterbrook thinks, Golding should:

Resume the program for a large delivery system. Right now it may be successful: The combination of new electronics and cheap components will bear fruit. At present, the U.S. is using rockets developed back in the

1950s, in the bronze age of the space era. NASA is using its monopoly in order to prevent the introduction of new developments.

Let the "shuttle" lie idle. There actually are not that many tasks, for which the shuttle is really necessary, for instance, biological research. Two-three flights a year suffices to resolve them. The corps of astronauts will have work, the risk of failure is reduced many-fold, and billions of dollars will be saved.

Reject the "Freedom" space station. Right now the Russians are close to closing their own "Mir" station, because there has turned out to be nothing in particular to do on it. Why should the United States spend 40 billion dollars on a bigger and more convenient version of that which the Russians are already rejecting?

Postpone talk of flights to Mars and bases on the Moon for the distant future. Right now, discussions of fantastic projects only distract NASA from creating basic delivery systems.

Turn NASA into a scientific agency. Science should hold a leading place in space planning. Incidentally, science is the most effective part of NASA.

Create a convenient space vehicle for manned flights. It is possible to deliver loads into space using a one-time delivery system, and people—using the proposed "space-plane," which starts from a carrier-plane. This rationalizes the launch system, reduces expenses and risk, and enables the discussion of projects, such as flights to Mars.

Work with the Russians. In the course of many years, NASA has opposed joint space projects to an even greater extent than its Soviet partners. Officially, this is because of the "cold war." In fact, the reason is that it drove NASA crazy that the USSR conducted up to ten manned flights a year. The Russians managed this only because they used simple and cheap delivery systems.

Joint space programs will not only make it possible to save money. Only they will make it possible to move farther into space—to the Moon, to Mars...

It seems, by the way, that neither Daniel Golding, nor the American legislators are inclined to listen to the voices of critics and advisors. At the very end of April, the House of Representatives offered rigid resistance to desperate attempts to shut down the program to create a space station. With 259 votes versus 159, the house rejected an amendment, which in fact withdrew almost the entire 2.25 billion dollars allocated to this program in the 1993 federal budget.

"I am happy and proud of all the efforts, undertaken in order to save the program," said Daniel Golding.

This victory is very important for supporters of the station, for a bill is being discussed precisely now, which will enable NASA to spend 47.3 billion dollars on this program over the next three years. The battle, however,

is not yet done. The station's fate will really be decided, when voting on the budget bill is held.

Supporters of the station, including George Brown, chairman of the Committee on Science, Space, and Technology, believe that the recent vote made rejection of the station less likely. In his opinion, the creation of the station is a key stage in the preparation of fundamental space programs. It is necessary, if man wants to learn how to survive in space.

The regions of California, Alabama, Texas, and Maryland, where about 40 percent of NASA's budget is spent, have the greatest number of station supporters in Congress. They assert that the program to create a space station will require 75,000 jobs in 39 states.

"We need something more than a space station," believes Jim Bacchus of Florida. "We need new high-technology industries." However, all the same, he says, the space station is necessary mainly "for the sake of our future, our dreams, our destiny, and our freedom..."

Court Overturns Supreme Soviet Decree on Russian Copyright Agency

*927A0210A Moscow POISK in Russian
No 19 (157), 2-8 May 92 p 3*

[Article by Anna Malysheva under the rubric "Details for POISK": "Protection Against the Protector"—first paragraph is POISK introduction]

[Text] The Constitutional Court of the Russian Federation declared unconstitutional the decree of the Presidium of the Supreme Soviet of the Russian Federation "On the All-Russian Copyright Agency."

Do you remember? The two from the small chest. The fine fellows from the fairytale helped with pleasure the boy Vovka. They chopped firewood, stoked the stove, and kneaded dough. But the moment came when the hero of the fairytale lost his head. "What are you going to do, will you also eat for me?" he asked, looking at how his helpers were tucking in the pirozhki. "But of course!" the fine fellows willingly replied. Incidentally, these two actually worked, and they ate their pirozhki with every right to this.

In no way would you say this about the deceased union department, which shortly before the end degenerated from the VAAP [the All-Union Copyright Agency] into the GAASP [the USSR State Agency for Copyrights and Related Rights], inasmuch as until its last days the agency existed at the expense of authors, living parasitically on the people, whom it was called upon to protect. Starting in 1973, the VAAP actually monopolized the right to control the dissemination of any products of intellectual activity abroad. From then on the agency year after year grew fat, while authors got only the crumbs from the table that was laid at their expense. The press criticized the VAAP-GAASP—just as tirelessly as unsuccessfully. Up to the closing.

Do not think, however, that they eliminated the GAASP for self-seeking and theft. No, they simply closed all the union departments—they also closed this one.

However, on 15 January of this year the executives of subdivisions of the former GAASP convened a constituent assembly. For the sake of decency it was announced that this was the initiative of Russian creative unions. Having gathered together, the founders decided to establish a public organization for the protection of copyrights. Let us note that the creative unions did not authorize them to do this, and the decision of the assembly was a complete surprise for them. Just as, incidentally, the charter of the new VAAP [the All-Russian Copyright Agency; hereinafter VAAP refers to the All-Russian Copyright Agency—translator's note], from which it was evident that now this, already All-Russian, agency was taking upon itself the representation of the interests of authors, without troubling itself with obtaining their consent.

"In the area of civil law activity in the interests of others without an assignment is impossible," Prof. Viktor Dozortsev, an expert of the Constitutional Court of the Russian Federation, asserts. "The most important thing in civil law is that I myself manage my own rights. Here no one represents the interests of authors without their knowledge and consent. According to the law it is possible to treat this way only two categories of citizens—the mentally ill and the feeble-minded." It would be interesting to find out, with which of these categories did the fathers of the new VAAP group their wards?

At any rate, the constituent assembly took place and the charter of the organization was adopted. As of this moment a sequence of mysterious events, which brought a group of people's deputies of the Russian Federation to the Constitutional Court, also began.

The power of the newly established public organization appeared immediately: While not having even been registered in the Ministry of Justice, that is, as if not yet existing, it received support on the part of the Presidium of the Supreme Soviet. And what support! In addition to the giving of its blessing and general words about the necessity of establishing the VAAP the Presidium of the Supreme Soviet resolved to transfer to the newly established organization the entire material base of the former GAASP, that is, it presented to it, in other words, a fair amount of state property.

At this time in the Ministry of Justice they studied the charter of the VAAP. Without enthusiasm. Rather with horror: The document was interspersed with absurdities, vagueness, and direct violations of the law.

Soon the Ministry of Justice received an order of the chairman of the Supreme Soviet of the Russian Federation: "...until the passage of the appropriate legislation the Ministry of Justice of the Russian Federation is to register the charter of the VAAP."

The ministry, however, displayed firmness and refused to register the charter. At that time N. Chetverikov, director of the VAAP, wrote to R. Khasbulatov a letter of complaint: "Dear Ruslan Imranovich! In connection with the formation on 15 January 1992 at the constituent assembly of the All-Russian Copyright Agency the necessary documents for the registration of its charter were submitted to the Ministry of Justice of the Russian Federation....

"To my question: Is there an order of the chairman of the Supreme Soviet with the assistance of the Ministry of Justice to register the VAAP?, Comrade Danifelskiy, chief of an administration, replied that the document exists, but this does not change the matter, since this order does not have legal force for the Ministry of Justice. The chairman of the Supreme Soviet, in the words of Danifelskiy, can promulgate orders within the Supreme Soviet, but outside it they are invalid...."

The next letter was delivered, as you can guess, from the Supreme Soviet to Minister of Justice Nikolay Fedorov:

"Nikolay Vasilyevich, I ask that it be explained to the staff members of the Ministry of Justice what the request (legal) of the head of parliament means.... [Signed] R. Khasbulatov"

Let us digress for a while from this lively correspondence and try to understand: For what do R. Khasbulatov and other top officials of the Supreme Soviet need this agency, why did they try with such persistence and in circumvention of the laws to restore this monster of totalitarian times?

The Presidium of the Supreme Soviet would hardly squabble for the sake of an ordinary public organization. That is just the point, this one is an unusual one. It is semi-public and semi-state, inasmuch as it provided itself with a number of state functions. The practice is a well-known one: In past years the state often also shared its functions with public organizations. To mutual advantage, of course. Let us recall if only the omnipotent CPSU....

We have been saying much about the harm of monopolism and about the necessity of healthy competition. But for the patrons of the new VAAP, one must assume, precisely the fact that there were no other VAAP or other VAAP's was particularly valuable. Thus, if the attempts of competitors to organize something similar are stopped in time, in the future the VAAP will be a wealthy, very wealthy organization. In Russia, in a country with such a powerful intellectual potential and just as powerful a lack of rights, a VAAP-monopolist simply cannot go bankrupt.

Let us note, incidentally: Authors themselves, the very producers of the intellectual product during these days did not display any activity. And a group of people's deputies, who for their most part are far from creative activity, appealed to the Constitutional Court.

The high court declared the decree of the Presidium of the Supreme Soviet to be unconstitutional. However, the rights of authors in our country as before are not protected. Their ideas, discoveries, and manuscripts are being stolen and are being used shamelessly. Undoubtedly, an organization, which would help scientists and writers to understand this chaos and would protect their rights, is needed.

Now the president is trying to establish such an organization. In accordance with his ukase the Russian Intellectual Property Agency is being established. But will it not also become another parasitic department? Will it not fall into the alluring trap of former aims at the compulsory "protection" of authors?

The questions are not idle. Our short democratic experience has already demonstrated more than once how the monsters of the recent past deftly revive and how they sprout in new, completely, it would seem, new structures.

And who in this case will protect us against compulsory protection, which is strikingly similar to the spoonful of cod-liver oil in childhood: It is unpleasant, you do not want to take it, but they force you to?...

POISK Science News Briefs 9-15 May 92

927A0215C Moscow POISK in Russian
No 20 (158), 9-15 May 92 p 2

[Article]

[Text] Figure

Mathematician Karl Witts was 12 years old, when in 1814 the University of Hesse awarded him a doctoral degree.

Quotation

"For Russia it is simply a disgrace that the peoples, who speak such developed languages as German and Norwegian, thus far do not have in it their own universities."

N. Novichkov, Deputy Minister of Education of Russia

Fact

In the specification of the status of the Academy of Sciences in the draft of the Law on the RAS [the Russian Academy of Sciences] it was decided to go beyond the previously generally accepted terminology, which presumes that an organization can be called either state or public. The authors of the draft proposed the following version: "The RAS is the highest all-Russian scientific self-administered organization, which is financed by the state...."

- The "second reading" (with allowance made for the remarks on the draft, which were made at the preceding session) of the Law on the Russian Academy of Sciences took place in the presidium of the RAS. The

majority of the additions in the "fresh" version concerned questions of property. The work on it is continuing.

The draft, which was prepared within the walls of the RAS, as Academician V. Kudryavtsev acknowledged, is "the maximum program" from the standpoint of the expression of the interests of the academy, and, therefore, it may be subject to criticism in parliament. But here it is necessary to consider the fact that similar communities throughout the world are in a privileged position, V. Kudryavtsev added.

- The presidium of the RAS adopted a decree on the procedure of filling positions at the academy. It was established that people up to the age of 70 can hold executive positions from president to head of a department, laboratory, and sector of a scientific research institute. It will be possible to hold a number of positions for not more than two five-year terms in a row. Among them are the positions of president, vice president, chief scientific secretary, academician secretary of a department, and others.

The positions of adviser of the RAS and scientific adviser of a structural subdivision of the RAS will be introduced in the nomenclature of the academy.

- From 16 to 20 May the Ekspolingva International Educational Exhibition will be held for the first time in Moscow. About 30 domestic and foreign linguistic centers, private schools, publishing houses, producers of linguistic packages of computer programs and methods, and producers of video programs will take part in it.

The exhibition should interest undergraduates and school children, who are studying foreign languages, instructors and translators, and experts of departments, who deal with the planning and development of language policy.

The holding of seminars, round tables, and conferences is planned: "Languages and Law," "Little Studied Languages and Languages of Intercultural Contacts," "Language Instruction of Modern Information Technologies."

- The opening of the competition "Teacher of the Year-92," which for several years in a row UCHITELSKAYA GAZETA and the Ministry of Education have conducted jointly, opened on 11 May in the Ministry of Education of Russia. The superfinal of the competition, on the winner of which the title "Teacher of the Year-92" will be conferred, will take place on 15 May in the Department of Education of Moscow.
- In former years more than 4,000 undergraduates from Uzbekistan studied in Russia, of them about 3,000 were future Russian instructors. Now their number has decreased sharply. According to the data of the Ministry of Education of Uzbekistan, among the undergraduates, who for various reasons were forced

to interrupt their studies and to return home, ethnic Russians made up 12 percent.

- According to preliminary data, which were obtained in the Ministry of Education on 22 May, of the 1,200 Russian schools, which intend to strike, only 600 will begin the strike. The reason is the lack of coordination of the demands of the future strikers. Some are appealing to begin the strike much earlier—on 13 May.
- G. Yagodin, rector of the International University, was elected chairman of the Board of the INTO (Information Technology in Education) Association.

The INTO Association was founded in January 1991 and is the largest structure that is working in the area of new information technologies in education. At present more than 30 organizations of Russia and 14 organizations in the states on the territory of the former USSR are members of the INTO. One of the main directions of the activity of the INTO Association is the implementation jointly with the IBM Corporation of a pilot educational project.

- In No 14 of POISK a mistake was made, which today we want to correct. "1,500 rubles [R]—such is the amount of a graduate student stipend at the Academy of Sciences of Turkmenistan," it was reported at one of the press conferences that were held at the RAS, after which this information appeared in our newspaper. As it turned out, it does not correspond to reality. Until recently graduate students of the Academy of Sciences of Turkmenistan received R600-700. In April of this year the president of the Turkmen Academy signed an order, in conformity with which the directors of scientific research institutions of the republic are permitted to pay graduate students a stipend in the amount of R800.

On the Verge of Collapse (by Stanislav Fioletov, Tashkent)

That is how Academician Zakirdzhan Salimov, director of the Institute of Chemistry of the Academy of Sciences of Uzbekistan, described the state of basic science in the republic. For this institute alone the shortage of funds for paying for municipal services comes to more than R1 million.

The situation at other academic scientific research institutes is also no better. And in recent times another dangerous trend has appeared: Specialists, first of all young people, are leaving institutes. In the last year approximately 400 associates left scientific research institutes. More than 600 left design bureaus. In the last two years the number of completed scientific research developments decreased by a third.

All these sad figures were heard at the general meeting of the Academy of Sciences of the Republic of Uzbekistan, which was held the other day in Tashkent.

A discussion in the mass media of the means of getting science out of the serious financial situation and of changing over to a market economy preceded the forum of scientists. Corresponding Member of the Republic Academy of Sciences Romen Zakhidov, for example, spoke in favor of the establishment of a republic fund for the support of basic science, as has been done in many countries. But then Uzbekistan People's Deputy Academician Pulat Khabibullayev considers that a fund for the development of science and technical policy is needed.

At the same time the majority of scientists are convinced: The development of science should rest on a legal base—a law on science is needed, and scientists have already prepared the draft of such a document.

At the general meeting the new charter of the academy, which is aimed first of all at the democratization and the strengthening of the independence of academic institutes, was adopted.

POISK Science News Briefs 2-8 May 92

927A0215B Moscow POISK in Russian
No 19 (157), 2-8 May 92 p 2

[Article]

[Text] Fact

The leadership of the RAS [the Russian Academy of Sciences] considers it possible to move the institutions of the academy, which are located in the new building of the presidium (Leninskiy Prospekt, 32A), to the buildings of the headquarters of the General Staff in the southwest part of the capital or to the premises of the Moscow headquarters of the Warsaw Pact on Leninskiy Prospekt.

- Minister of Science, the Higher School, and Technical Policy B. Saltykov acknowledged that the budget of Russia today is incapable of ensuring the fulfillment of the point of Ukase No. 1 of Boris Yeltsin, in conformity with which the average wage of professors and instructors of the higher school should exceed by twofold the wage in industry. In his opinion, it is possible to depart temporarily (if only for a year) from this formula, having in so doing "preserved the spirit of the ukase."
- The Committee for the Awarding of the Australia Prize invited the Russian Academy of Sciences to take part in the selection of candidates for the 1993 prize and nominal medal.

The Australia Prize was established by the government of the Commonwealth of Australia in 1990. It is awarded for outstanding achievements in science and technologies, which contribute to the progress and prosperity of mankind.

The prize is presented in a selected field of science and technology. In 1993 this will be "sensory perception"—a theme that concerns studies of the mechanisms and

processes of the sensory perception by people and animals of symbols, sounds, and touch. The amount of the prize is \$250,000 [Australian dollars].

- **The Norwegian Nobel Institute announced the competition for the filling of a vacant position of senior scientific associate. The inquiry was also sent to the Russian Academy of Sciences.**

"An authoritative scientist, who deals with the problems of history, international law, or the social sciences and has a significant number of publications on the corresponding theme" can be hired to the position.

The general theme of the program of research, which the Nobel senior scientific associate will conduct in 1993, is called "The Great Powers and International Systems."

Address: Dr. Odd Arne Westad, Research Director, The Norwegian Nobel Institute, Drammensv. 19, N-0255, Oslo, Norway. The international fax number is: 47-2-430168.

Candidates should send to the mentioned address or fax a brief description of the project, a short biography, and two letters of recommendation.

- **An information library council is being organized under the presidium of the RAS.** The scientific organizational and procedural supervision and the coordination of the work of the All-Russian Institute of Scientific and Technical Information, the Institute of Scientific Information on Social Sciences, the library of the Academy of Sciences, the library for the natural sciences, and the central scientific libraries of the regional departments and scientific centers of the RAS will be included in its task. The council will also draw up recommendations "on the optimum development of the system of the scientific information and library network" at the academy. Academician Yevgeniy Chelyshev was approved as chairman of the council.
- **RAS President Yuriy Osipov will head the academy's Committee for Systems Analysis, the presidium of the academy decided.**
- **The Moscow Institute of Advanced Training (MIPK) "Atomenergo" is holding from 29 June to 4 July the seminar conference "Scientific and Programmer Collectives: How To Help Themselves Survive."** The proposed themes of the papers, reports, and discussions: programmers, science and commerce, questions of marketing; the legal ethics aspects, license cleanness, legalization, and protection of developments; the mechanisms of scientific cooperation and mutual assistance; software collections.

Telephone inquiries: (095) 453-12-37.

The Example Is Science for Others

Scientists of the Institute of Electronics of the Academy of Sciences of Uzbekistan sold to the largest Japanese

steelmaking company, Nipon Steel Corporation, licenses for methods of the electric arc removal of scale, oxides, and contaminants from metals.

Several years ago this institute for the first time in all the years of existence of the Academy of Sciences of Uzbekistan sold a license to a highly developed country—Switzerland. And now there is Japan.

"Our technology is absolutely ecologically clean," Corresponding Member of the Academy of Sciences of Uzbekistan Utkur Rasulev, director of the institute, asserts. "Moreover, according to the estimates of specialists, including foreign specialists, the method is significantly less expensive than all others."

POISK Science News Briefs 25 April-1 May 92

927A0215A Moscow POISK in Russian
No 18 (156), 25 Apr-1 May 92 p 2

[Article]

[Text] Figure

\$300 million is how much, according to the estimates of western experts, the new building of the presidium of the Russian Academy of Sciences (Leninskiy Prospekt, 32A) is worth.

Quotation

"The people need science. The country, which does not develop it, inevitably turned into a colony."

F. Joliot-Curie, French physicist and public figure

Fact

The Ministry of Science, the Higher School, and Technical Policy intends to ask the government for permission to establish under the ministry a fund to insure higher educational institutions against bankruptcy.

- **The presidium of the Academy of Sciences approved the Model Statute on the Organization and Remuneration of the Labor of Personnel of Scientific Institutes of the Russian Academy of Sciences on the Basis of Individual Contracts.** The statute was prepared "for the purpose of strengthening the connection of the remuneration of the labor of personnel of the Russian Academy of Sciences with the quality and effectiveness of the work being performed by them without the limitation of the wage."

It is recommended to executives of scientific institutions on the basis of this document to draft and in consultation with the trade union organizations of the institutions to approve their own corresponding statutes. Moreover, it will be possible to do this "with allowance made for the scientific specialization, the working conditions, and the organization of work" of the institution.

In conformity with the above-indicated model statute the development of a specific scientific and technical

product or the performance during the term of effect of the contract of specific functions can be "the subject of the contract."

The contract can be concluded for a term of up to three years (for people of retirement age, for a term of not more than two years). The positions, the filling of which is carried out on a contractual basis, are included in the manning table of the institution.

- **Minister of Science, the Higher School, and Technical Policy B. Saltykov reported at a meeting with journalists that in the future the breakup of the ministry is possible.** Among those, who could come out from under its tutelage, is the Higher Certification Commission. "This is an entirely independent institution with a limited range of functions, and it can be an independent department," the minister said.
- **In the Ministry of Science, the Higher School, and Technical Policy the draft of a decision on the establishment of the Russian Basic Research Fund has been prepared.** It is being established in accordance with the Ukase of the President of the Russian Federation "for the purpose of the development of the most important directions of basic research and the consolidation of the scientific and technical potential of the country."

The fund will have the status of a state self-administered organization and will be able to manage independently its property and assets. Its basic tasks are: the financing of programs, which have undergone competitive selection, and enterprising basic research, which is being conducted at scientific research organizations, at higher educational institutions, as well as by individual scientists under contracts and other agreements; the giving of additional assistance on the basis of competitive selection to scientific institutions and higher educational institutions, which are conducting basic research, in the development of their material and technical base; the financial support of the most talented young scientists.

- **CIS Navy Commander in Chief V. Chernavin sent to instructors and students of the journalism faculty of**

Moscow State University a letter of response, in which he thanks them for the support of the commanding officer and personnel of the Navy.

In their message the students and instructors voiced a protest against the attempts at the annexation or arbitrary division of the fleet. In their opinion, the question of its fate should be decided in a civilized manner, with allowance made for the interests of the entire CIS.

"...You displayed a proper understanding of the essence of the conflict," the admiral writes, "and, in contrast to the representatives of some mass media, appreciate absolutely correctly the irreplaceable role of this fleet in the system of strategic forces of the CIS..."

V. Chernavin promised to familiarize all the personnel of the Red Banner Black Sea Fleet with the letter from Moscow.

- **At the All-Russian Exhibition Center (the former Exhibition of National Economic Achievements) the Ekspokom-92 International Specialized Exhibition of Data Processing and Telecommunications Equipment will be held from 25 to 30 May 1992.**

Firms which specialize in the area of the export marketing of means of production—Hannover Messe International, the subsidiary Deutsche Messe AG, and E.D. Krause and Associates—are organizing it.

The exhibition program will encompass the following themes: telecommunications, information systems and office equipment, the automation of office work, microcomputers, and so on. The participation of about 150 firms from 15 countries is planned. Siemens, IBM, Motorola, Telecom, and Samsung are among those who will display their exhibits.

- **The "regiment" of Russian academies has increased. In accordance with the ukase of President Yeltsin the Russian Academy of Architecture and Construction Sciences is being organized.** This self-administered, creative scientific organization will unite leading master craftsmen, scientists, creative associations, and scientific research organizations in the area of architecture and construction sciences.

Uzbek State Prizes in S&T Announced

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[Article by M. Salakhitdinov, president, Academy of Sciences of the Republic of Uzbekistan, chairman, Committee on State Prizes of the Republic of Uzbekistan imeni Beruni: "Well-Deserved Appreciation"]

[Text] For the first time in the history of Uzbekistan, a number of scientists of the now sovereign state have been awarded the State Prize of the Republic of Uzbekistan imeni Abu Raykhon Beruni in the field of science and technology. The authors of works which make a substantial contribution to the development of basic science received prizes.

The famous physicists M.K. Bakhadyrkhanov, S.Z. Zaynabidinov, A.T. Mamadalimov, R.A. Muminov, M.S. Saidov, and M.S. Yunusov conducted comprehensive research on the behavior of admixtures in silicon and developed technologies and instruments that have been widely applied in the national economy. Their work has received international recognition. Completely new kinds of semiconducting instruments and devices, particularly solar elements, nuclear radiation detectors, and highly sensitive photoreceptors have been created and implemented. The authors have made a great contribution to developing the physics of crystals, solid state radiation physics, and the physics and technology of alloy semiconductors.

The prize imeni Beruni was awarded to D.Kh. Khamidov, I.K. Musavayev, A.T. Akilov, M.T. Islamov, K.N. Nishanbayev, A.A. Turdyev, and Yu.V. Shpolyanskiy for the cycle of work "Kletochnyye i tkanevyye sistemy: evolyutsiya, radiochuvstvitelnost, infektsionnaya patologiya" [Cellular and Tissue Systems: Evolution, Radiation Sensitivity, Infectious Pathology].

The cycle of work represents fundamental research on the evolution of the hematogenic system of vertebrates, of mechanisms for forming their natural resistance to radiation, and of pathological and biochemical changes in the infectious pathologies of man. To this day, the world has nothing similar to the "Elektronno-mikroskopicheskiy Atlas elementov krovetvoreniya pozvonochnykh zhivotnykh" [Electron-Microscopic Atlas of the Elements of Vertebrate Hematogenesis], published in 1979. The authors were the first to propose a unifying scheme of vertebrate hematogenesis, which is accepted throughout the world.

The cycle of work, done under the leadership of I.K. Musabayev, made it possible to give a new clinical classification of various infectious diseases, based on biochemical and immunological indicators, and to introduce different biological elements as biostimulants in various infectious pathologies. An epidemic of a new type of cholera was studied, and a previously undescribed gastric form of the disease was discovered. The extreme symptoms of typhoid-paratyphoid diseases and

dysentery were described. A new clinical classification was proposed and, based on a study of the exchange of trace elements and vitamins, their use in clinical practice was recommended. The results are being used in many scientific centers of the country and abroad, in biological and medical higher educational institutions.

The cycle of research by Uzbek AN academicians M.M. Khayrullayev, G.A. Pugachenkova, E.Yu. Yusopov, and corresponding members A.K. Valiyev, Kh.P. Pulatov, and doctor of philosophical sciences S.Sh. Shermukhamedov is devoted to restoring the lost connection of time, the evolutionary line of development of the culture of Uzbekistan, and returning the humanistic essence to it. Their research reveals the mechanism and specific features of the establishment and development of a national culture, the role of succession in the assimilation of cultural heritage, and the spiritual and moral progress of society. The role and place of outstanding scientists and thinkers, such as Farabi, Khorezmi, Ibn Sina, Beruni, Ulugbek, and others, in world culture and science is especially revealed. The status and prospects of the national culture and the role and place of the national intelligentsia in this process were thoroughly analyzed.

One of the works awarded the State Prize imeni Beruni is the "Istoriya uzbekskoy literatury" [History of Uzbek Literature] (two volumes in Russian), created by scientists from the Institute of Literature imeni Alisher Navoi of the Uzbek AN, A.A. Kahyitmetov, A.Kh. Abdugafurov, S.G. Ganiyeva, Ya. Iskhakov, E.A. Karimov, A. Kayumov, M.R. Mirza-Akhmedov, and S. Erkinov.

The appearance of this work, including the interpretation of the mechanisms of the literary process of peoples of Central Asia since ancient times up to the start of the 20th century, is an important event not only in the scientific, but also in the cultural life of Uzbekistan. The study was devoted to questions of the establishment and development of Uzbek literature. Significant attention was also given to the common Turkish literary heritage and to literature in the Arabic and Persian languages, written in the territory of Central Asia. The "History" interpreted Eastern works anew, such as Beruni's "Avesta," "Istoriya Tabari" [History of Tabara], and "Pamyatniki minuvshikh pokoleniy" [Monuments of Past Generations], Navoi's "Istoriya persidskikh tsarey" [History of the Persian Kings], "Vakfiya," and many others.

A great deal of space is devoted to the life and works of Alisher Navoi. The creativity of Babur and Mashrab, Mukimi and Furkat is examined comprehensively. The work is a fundamentally new stage in the study of the richest treasure-houses of Uzbek literature, and is an important source for orientalists and Turkologists.

For the creation of original textbooks, the State Prize imeni Beruni was awarded to Uzbek Academy of Sciences academicians T.A. Sarymsakov and doctor of medical sciences, Professor N.K. Akhmedov.

T.A. Sarymsakov's textbooks "Teoriya veshchestvennogo peremennogo" [Substantial Variable Theory] and "Kurs funktsionalnogo analiza" [Course in Functional Analysis] were written in the Uzbek language on the basis of the author's lectures to students in the mathematics department of Tashkent State University. To this day, these textbooks are the only ones on this area of mathematics in the Uzbek language.

Doctor of medical sciences N.K. Akhmedov, who has 44 years of teaching experience in the department of human anatomy at Tashkent State Medical Institute, is author of the textbook "Normalnaya i patologicheskaya

anatomy i fiziologiya" [Normal and Pathological Anatomy and Physiology] in the Uzbek language for medical students. The textbook covers all areas of human anatomy, physiology, and pathology, and the material is written, taking modern achievements in morphology and physiology into account. Much work was done on the Latin-Uzbek terminology, taking the development of the modern Uzbek language into account.

The research and textbooks, awarded the State Prize imeni Beruni, will fruitfully serve our independent republic and the development of its science and culture.

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