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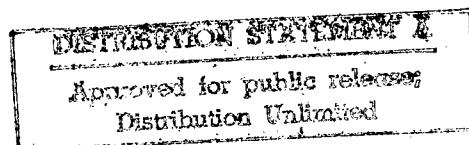


# ***JPRS Report***

# **Science & Technology**

***Central Eurasia:  
Life Sciences***

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# Science & Technology

## Central Eurasia: Life Sciences

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### **"Green" Activists Suspect Removal of BW Equipment From Vozrozhdeniye Island**

92P60213 *Moscow DELOVOY MIR in Russian No 61, 28 Mar 92 p 1*

[Article by Irina Nevinnaya: "Island of Degeneration"]

[Text] **Were biological weapons tested in the Aral Sea? The "greens" categorically assert, "Yes." A frank dialogue with the military is apparently yet to come.**

In the middle of the last century, during one of the expeditions around the Aral Sea a Russian naval officer A. Butakov discovered an unknown, uninhabited island. The discoverers named it Konstantin in honor of Prince Konstantin Romanov, president of the Russian Geographical Society. Soon the sailors saw yet another island, a scrap of dry land, and named it in honor of the Russian Emperor Nicholas. The third to be drawn on the map was Naslednik [Heir] Island.

When did Nikolay Island become Vozrozhdeniya? It is hard to say. But what is known for sure is that after the war a special, secret life began. Lost in the sea far from populated shores, scorched by the sun, devoid of fresh-water, the island was uninhabited and attracted neither fishers nor sailing enthusiasts. But on the other hand, it would be harder to find a better place for organizing a regular military proving ground. Flat terrain, remoteness from curious eyes. What the military was doing on the island remained a secret behind seven seals.

Only occasionally did the Aral region inhabitants and shepherds, and geologists, geographers, biologists working on expeditions, become witnesses of unpleasant and hard-to-explain events. At times in clear, dry weather, clouds, now yellow, now black, approached from the direction of the sea. It became hard to breathe. People took shelter in their houses and yurts. Some became ill.

The secret island was studied by the international public committee "Aral-Asia-Kazakhstan". And while previously all the fragmentary stories about the small scrap of land had sounded more like a gloomy legend, the committee members—scientists and public figures, not only collected witnesses' testimony but also tried to document it.

Thus, in 1976, a massive die-off of fish occurred in the Aral Sea. By that time the ecological conditions in the region were undergoing severe deterioration. The sea was becoming shallow, the composition of the water was changing. But the fish rotted not only at unsafe sites—where the water was polluted with the runoff from chemicalized rice fields. They also died where the sea remained essentially healthy. The true cause was not determined at that time. And perhaps it was decided not to make it public?

In June 1989, a heavy smog hung over the Aral region. The same summer outbreaks of plague were noted in the

region. A mysterious disaster also befell sheep—entire flocks lost their wool. The bald sheep died.

A year earlier, in May 1988, still another tragedy occurred. On the Turgay steppe (to the north-east of the Aral Sea) in one hour approximately one half million saiga [antelopes] dropped dead. A disease overcame the animals suddenly, when spring was in full swing, when food and water are plentiful and the undemanding steppe dwellers feel very healthy. The ground was covered with saiga carcasses. The fact of the mass death was concealed from the public. The dead saiga were buried by bulldozers and ploughed under by tractors. And it was the military who did this. A commission that arrived from the center—it also included men in shoulder boards—did an on-the-spot "investigation" and made a diagnosis—the saiga had died from an intestinal infection.

The reassuring explanation was hard to believe. For many years the military had answered all questions and inquiries regarding the proving ground on Vozrozhdeniye Island in the negative: They said that biological weapons had never been tested on the territory of the republic. And, by the way, they weren't lying. The fact of the matter is that the command of military unit 25484, based on the island, is located in Aralsk on the territory of Kazakhstan, and the proving ground itself is on the part of the island that belongs territorially to Karakalpakstan.

Finally publications appeared abroad. It became impossible to remain silent. In response to an inquiry by the president of the public committee "Aral-Asia-Kazakhstan", poet and public figure M. Shakhonov, came a letter signed by then Defense Minister D. Yazov and former Atomic Industry Minister V. Konov-alov. The letter said, "With respect to information on the tests of biological weapons allegedly conducted on Vozrozhdeniye Island in the Aral Sea, we inform you that the Soviet Union has signed and strictly observes the Convention of 1972 on the Prohibition of Biological Weapons. A field scientific research laboratory of the USSR Ministry of Defense's Scientific Research Institute of Microbiology, which engages in testing of defensive means against biological weapons, is located on Vozrozhdeniye Island".

How should this be understood? Using elementary logic, if defensive means against biological weapons had really been tested on the island, is it possible to conduct such studies without the agent itself? And if field tests of biological or chemical weapons were conducted here up to 1972, then terminated under the international agreement, why not say so honestly?

In 1990, an international commission from UNESCO visited the Aral area in order to analyze conditions in the region. The authorities prepared for the meeting in advance. Food and extremely attractive consumer goods appeared in the stores. And on the shore of the sea,

which had receded into the distance, and on its salt-saturated, dried out bottom, for a few brief days green parks appeared. Saplings were hurriedly stuck into the sick earth. Who cared that in a couple of weeks they turned into dessicated skeletons?...

People's Deputy M. Shakhonov gave a speech at a session of the Supreme Soviet of the republic of Kazakhstan and called on the government to terminate the existence of the proving ground on Vozrozhdeniye Island, calling it "Vyrozhdeniye [Dégénération] Island". The session supported him, making the appropriate appeal to the military. Three months passed, but the "masters" of the island have remained silent.

What is more, literally several days ago the international public committee received a telegram from Aral'sk sent by the head of the administration of Aral Rayon in Kzyl-Ordinsk Oblast, B. Kayupov. It said that on 7 March a "convoy" heading from military unit 25484 had been detained. An attempt had been made to "evacuate" heavy-freight trucks, tractors, tank trucks and other equipment. The "greens" fear that the specific, secret equipment may have already been dismantled and shipped out.

In my opinion, we should strive for publication of the documents showing the scientific activities of the laboratory on the island and of the parent organization—the Scientific Research Institute of Microbiology of the USSR Ministry of Defense. And not only that: the laboratory was not the only one to have engaged in development of biological weapons and, of course, the proving ground on Vozrozhdeniye Island is also far from being the only one in the former Soviet Union.

### Journalist Tours Nineteenth Military Installation in Sverdlovsk

92P60224 Moscow POISK in Russian 7-13 Mar 92, p 5

[Article by correspondent Lidiya Usacheva, Yekaterinburg: "Nine Hours Behind the Barbed Wire: Reporting From the 19th Military Installation From Which, Many Allege, Anthrax Broke Out in 1979"]

[Text] I had not intended to touch on this history, but I could not avoid it. I very much wanted to look into the eyes of those who lived and worked here in the fatal year of 1979, to hear their direct response to an equally point blank question. This is why, while greedily devouring information on the present day of the Center of Military Technical Problems of Biological Defense of the Scientific Research Institute of Microbiology of the Ministry of Defense—the present name of this facility—I unintentionally returned my interlocutors to those events of 12 years past.

In response to this, many frowned and the colonel escorting me, the deputy director of the center, Anatoliy Mikhaylovich Lobur, quickly changed the topic. On the whole, he proved to be an uncommonly severe stage director: not a step to the side, every meeting, every

word—strictly by prearranged script. True, it was proposed that I select my interlocutors myself, but that is like looking for a fellow tribesman on a little-studied planet. Any attempt at free discussion was immediately interrupted.

To sum up, from 0900 to 1800 I visited five laboratories. Before me passed—not counting the escort who also interjected his commentaries from time to time—11 interviewees, mainly military chemists, physicians, biologists and one civilian—an engineer.

At times it seemed that I was drowning in a sea of highly specialized information. The outward appearance of openness was created, although I could not believe in it because a man with a tape recorder constantly followed my main escort like a silent shadow. "Are you checking up on me?" I burst out near the end. "No, on ourselves," was the equally awkward reply.

### Thorns and Roses

The first impression when, passing by the central guard-post, you leave the bustle of the city and enter the confines of the center is that you have found yourself in a comfortable resort town, where sun sparkles on white snow, there is silence, peace... And the rare passerby moves towards you and the low stone buildings fit prettily into the green woods. And in harmony with your mood, your escort in shoulder boards and general's papakha [hat] carries on a conversation about the delightful life here: no crime, no social disturbances. The children are growing up—there is everything they need here: no problems with either schools or daycare.

But here the path ends and again a barbed wire fence comes into view—the checkpoint leading to the battalion's territory and consequently more vigilantly guarded. We take a few more steps and again push our way through a revolving gate: Ahead lie the production buildings with the same secret laboratories that still strike terror into the hearts of the townspeople. "All the same, why are you needed?" I wonder. "Isn't there a convention prohibiting biological weapons?"

"And has Hussein signed it?"

The argument, it cannot be denied, is convincing. There is a danger—antidotes are needed. We need to know without fail how man, nature and equipment will behave if, God forbid, a disaster happens. And for this reason in numerous experiments with simulants of toxic and pathogenic substances which are manufactured right here in Candidate of Medical Sciences I. Poberiye's laboratory, a search is being conducted for more effective measures of defense and disinfection.

The pride of the military scientists is the climatron being built on the territory of the installation: large chambers where the "susceptibility" of tanks, armored transporters, BMP [armored infantry vehicles] and similar military equipment to different microbes will be tested.

It turns out that the microbe is an omnivorous creature. It may "eat" even metal. And as the result failures occur in the systems of aircraft, guns and tanks. And often! The loss is up to R40 billion per year. The problem is extremely serious. During the last five years alone, more than 100 scientific books in military and academic science were devoted to it. At the installation it is being studied in the department of Candidate of Medical Science Valeriy Nepokrytiy. It is serious studied: in a comparatively small department there are eight candidates of science, the most luxurious instrument base. By the way, one can't get into the installation even as a junior research assistant without a scientific degree.

So if it happens tomorrow that the need for missiles and tanks drops off, the knowledge will be useful. Let's say that our hospitals, maternity homes and pharmacies are infected with staphylococci, our poultry farms, with salmonella. Cleansing the harmful microorganisms from their environment is a mere trifle for the scientists in shoulder boards. And lately they have been actively helping the townspeople control this misfortune.

It is noteworthy that everywhere you go there is perfect cleanliness and order. Fish frisk in aquariums, flowers twine along the walls. And the main thing—it's been a long time since I've seen the like—everything in its own place. Here work people, mainly women, in snow-white caps bristling with starch.

A letter by one worker of the Center was published once by the local "Vecherka" [newspaper]: "I am a native of the 19th Installation, I have lived here for 26 years. No, I am not an ardent patriot, there are no military among my relatives, but what other enterprise can boast of such a production area, such as exists in no sanatorium? When I arrive at my installation—only here do I breathe deeply, safe from the asphyxiating gases of my native Sverdlovsk-Yekaterinburg."

I, too, am ready to subscribe to these words.

#### Why It Is Not Liked

However the name of the 19th Installation has changed (first it was the Scientific Research Institute for Vaccine Preparations, then, after certain events, the Military Epidemiology Sector of the Scientific Research Institute of Microbiology of the USSR Ministry of Defense, and now the above named center), its main task has always been and remains biological defense of buildings, military materiel and the population in the event of a biological warfare attack. But here is the paradox—the population is not even asking but demanding: "Rid us of this 'defense'. Remove the facility from the town immediately!"

A wave of dissatisfaction with the military in white [lab coats] swept over the town in 1990-1991, when a series of publications containing accusations against the microbiologists rolled through the central newspapers like an angry breaker: Death had come to the Sverdlov residents not from infected cows but from the laboratories of the

military installation. It remained only to be demonstrated. But that was exactly the hardest thing to do—at that time the KGB tried its hardest. The deputies, however, were inclined to tell the people the truth and force the guilty institution to pay compensation to the relatives of the deceased. Inquiries were made to all the highest authorities. And responses were obtained including even one from Yazov, who is now awaiting his hour in the "Matrosskaya Tishina" jail. The head of the defense department echoed that the outbreak of the disease was caused by infected meat. Committees were created at all levels... And everything died down.

True, a commission of the Russian parliament is threatening to study the anthrax incident, but it hasn't convened yet. And around the 19th Installation new rumors are spreading, inspired by the impending construction of a plant there to manufacture promising antibiotics. And although the command swears that ecologically clean production is planned, the people don't believe it. After all, how many times have they been deceived? "Is it possible," Anatoliy Mikhaylovich tries to make his point, "that in all this time not one of the residents of the settlement over which the 'orange cloud' allegedly dispersed has been injured in his kitchen garden? After all, everything was supposed to have settled on the soil. But there aren't any complaints, are there?"

Anatoliy Mikhaylovich doesn't live in America and knows very well that our doctors write diagnoses as directed: What does it matter to them—acute respiratory disease or anthrax? Am I being insulting? Not at all—in the beginning that was the diagnosis: death from pneumonia. But when the pneumonia struck tens and hundreds of people. . .

"No, there was no discharge," asserts the author of an anthrax vaccine unique in Siberia, candidate of medical science Nikolay Vasilyevich Sadovoy, looking me straight in the eye with his honest gaze. "If there had been, the outbreak would have lasted not a month and a half, but a week at most. But I favor specialists studying the question and removing what are doubtlessly futile emotional gestures by the press against us."

Do you sense it? They started on a positive note and towards the end the righteous anger died out.

#### And All the Same There Is A Reason To Like Them

"Conversion?" Lobur thinks for a minute. "This word somehow doesn't apply very well to us. After all, we never were a VPK (military industrial complex) that worked on war. We always worked on defense."

Nonetheless the process that has seized all of "defense" is going on in the 19th Installation visibly or invisibly. The sharp drop in budgetary financing is forcing the military scientists to search for means for existence. And that means—coming out from underground, opening up to the surrounding world and working with it. Today the Center of Military Technical Problems of Biological

Defense is ready to offer—I carefully studied their catalog—more than 70 services to the civilian population starting with disinfection of hospitals, pharmacies, and food industry enterprises and ending with participation in solution of ecological problems of the town and oblast.

Much of what the specialists of the 19th Military Installation are doing strikes the imagination. For example, a method of eliminating contamination of water and soil, and spills of fuel oil and other oil products, developed jointly with scientists from the Tyumen Petroleum and Gas Institute. Microorganisms are placed in a vessel containing a fairly thick layer of fuel oil, certain conditions are created—and in three weeks (depending on the thickness of the layer) the fuel oil has disappeared. In “eating” it, the microorganisms give off proteins that fish are glad to feast on.

Or here is a big problem in the CIS—destruction of chemical weapons. Attempts to build special plants have stumbled over protests of the “Greens”. One way out is,

again, microorganisms. On the eve of my arrival in the installation a conference took place on this issue with participation by tens of military and civilian departments. It seems that a way has been found. And the same principle will be used—a microorganism placed in a medium of a chemical substance will eat it and as a result itself die. One-hundred percent purity and much lower expenses.

I admit that I left the installation with a different attitude than when I arrived. I regret one thing: The innuendos and the long concealment of the truth have resulted in mutually unacceptable relations between those who, to the contrary, should have the greatest trust in each other—the residents of the surrounding area and the workers of the military scientific center. After all, such centers exist throughout the world. And they are not hated and feared, solely because of a constant stream of reliable information on such centers. It rids people of conjectures and leaves no grounds for fear. It's time for us to live by these principles.

**Surgical Center Director on Transition to Paid Medical Service**

927C0362A Moscow POISK in Russian, No 13, Mar 92  
p 13

[Interview by Olga Kolesova and Aleksandra Mukhina; under the rubric: "Details for 'Poisk'"]

[Text] Our correspondents met with the Deputy Director of the All-Russian Scientific Surgical Research Center [VNTsKh] of the Russian Academy of Medical Sciences, head of the Department of Plastic-Reconstructive Microsurgery, Nikolay Olegovich Milanov.

[Interviewer] "Your center is one of the first to have tasted the bitterness and joy of paid health care..."

[Milanov] "Life's necessities gave us a little shove in that direction; otherwise a center like ours simply could not exist. The cost of surgical operations has gone up very steeply today. Medicine, equipment, and even bed linen have become more expensive. If, let us assume, an appendectomy (removal of the appendix) had 'cost' 1,600 to 2,800 rubles last year, today it costs us 16,000 to 28,000, and the cost of a heart operation involving artificial circulation has 'jumped' from 7,000 to a 100,000 rubles. But this is substantially cheaper than in the West. Let's say the ratio in plastic microsurgery is something like this: 60,000 to 80,000 rubles here, 120,000 to 150,000 dollars in the West."

[Interviewer] "Does it turn out that it's much more to your advantage to be paid in currency? Won't it end up that your main clients will be foreigners, guests, and fat cats?"

[Milanov] "We can do a few operations, very expensive ones. Or, on the other hand, do a few more, but cheaper. The second way, of course, is more advantageous. But the trouble is that we simply lack the possibility of maintaining the Institute. All the money earned goes into the Institute's till. Because the monthly budget which has been determined for us by the Russian Ministry of Health allows us to operate only on 80 patients. But we do 400 to 500 operations per month. In addition, you have to consider that the money earned will not only go to pay personnel, but to maintain the patients. After all, it's simpler for us now to pay a staffer to do nothing, to play a game of chess on the job, than to take a nonpaying patient. Because a bed-day, even without treatment, costs 700 rubles."

[Interviewer] "In other words, if you don't have a solid bank account, it's better not to come to your center?"

[Milanov] "But why... Patients can be divided into two categories - budget and commercial. The first are those whose treatment will be paid for by the public health organs, the Ministry of Health. Those very 80 patients a month, to whom I just referred. The commercial patients are those who will stand the cost of their treatment, or whose firm will pay. We have agreements with some production organizations within the framework of which we accept a certain number of patients for treatment.

Patients from sovereign states, including those from the countries of the Commonwealth of Independent States (CIS) [SNG] also belong to the category of commercial patients. Their treatment is done for pay, on the basis of letters of guarantee. When we deal with commerce in medicine, this does not mean that a person must always rely on his own purse. It's another matter when the operation is not vitally necessary. For example, plastic, cosmetic operations. Patients pay their own way for beauty the world over."

[Interviewer] "But will all production organizations be able to concern themselves with the health of their personnel?"

[Milanov] "We have prepared contracts and we intend to disseminate them through one of the Moscow exchanges. Any production organization with sufficient assets can acquire such a contract for its staff. A patient coming with 'a paper in his teeth' will be provided a bed immediately. The "landing" of a medical-diagnostic brigade for clinical examination and treatment will be included in contracts with firms. But so far they have been concluded not with Moscow production organizations, but with Far Eastern production organizations..."

[Interviewer] "What ratio between the budget and the commercial patients is planned?"

[Milanov] "Fifteen to 20 and 80 to 85 percent, respectively."

[Interviewer] "And what will the cost of the operations be?"

[Milanov] "We have had contractual prices for three years by now. Unfortunately, the cost of an operation is increasing every year. We have subdivided the operations, on the basis of complexity, into seven categories. The amount depends on the category and the form of payment: Either the patient lays out his own hard-earned money, or the firm transfers money for him. Naturally, an operation one pays for oneself is cheaper. 'Hotel services' are also included in the cost for the production organizations. Payment is not taken from the patient of a 'private practitioner' for 'services'. But he can choose apartments, either a general or a separate ward, for himself for the appropriate additional payment. Whether there is a television or a refrigerator in the ward varies.

"The lengths of the hospital stay are also stipulated. Let's say that a week is allocated for a treatment. If it drags on, that's paid for by the Institute. Unfortunately, I cannot give you the specific amounts right now. But I believe that the least expensive operation in our Institute costs the patient 6,000 (Nikolay Olegovich sighs deeply.) Of course, the cost of operations differ in the scientific research institute and the regional hospital. By the way, we are now paying 300,000 a month for public utilities alone. No benefits of any kind for medical institutions are provided for. Moreover, all of our 'commercial' revenues are subject to a tax up to 28 percent. We even

have to give back to the state 32 percent of the amount by which we raised staff salaries. Our beloved state rips off the health care system, though it is in fact one of the most impoverished sectors."

[Interviewer] **"Nikolay Olegovich, tell us honestly, how does 10,000 for an operation comport with humanity and fairness? Aren't the indigent, the sick old folks dying beyond the doors of the clinic?"**

[Milanov] "Oh, come on now! In general we don't take patients unless they are sent by the municipal health department. But yesterday they brought in a six-year-old girl from Karachayevo-Cherkesiya whose hand had been torn off in a sawmill. Nothing was said about money. Although now the director of the state farm where the girl came from has offered to pay for the operation. And if a patient is brought in 'from the street' with gastric hemorrhage, we also do not turn down anything [he offers]."

"That's another matter... the victims of the accident at the Chernobyl NPS... Why should we help them gratis? There are plenty of state funds with huge assets collected especially for these purposes. The same goes for the victims of disasters, since the USSR Ministry of Rail Communication [MPS], Aeroflot, Morflot are all state companies. But in this instance neither the state nor the companies show the slightest enthusiasm."

[Interviewer] **"Imagine the following: A 'rescue wagon' has brought in an unknown person, and he has turned out to be the director of a large firm. Will you demand payment from him after treatment?"**

[Milanov] "No one will make demands. Maybe he himself will want to pay. But the planned 'commercial' patients pay in advance, before the beginning of treatment. And the 'little payment' stays in the polyclinic; in the hospital none of the staffers know whether this is a 'commercial' patient or not."

"The firms settle up with us by contract every half-year."

[Interviewer] **"Nikolay Olegovich, what system of social guarantees in the public health services field seems optimal to you?"**

[Milanov] "Insurance, without a doubt. The state should officially recognize the existence of the indigent and take their protection on itself. They should not only be given the means to live, but medical services should be guaranteed. Others should be insured, either personally or with the assistance of the firms where they work. That's how it's done the world over. Insurance can be included in the terms of the contract concluded upon hiring."

[Interviewer] **"However, a de-bugged insurance system is in operation all over the world. We, however, are again putting the cart before the horse: first we introduce paid medical services and only then do we begin to think about social guarantees, about insurance"**

[Milanov] "We have always been smart after the fact. The commercialization of medicine has been an action forced on us. Everything works like at an exchange: Let's say we get 10,000 for an operation, and the neighboring hospital gets 9,000. The patient dashes over to our neighbors, it's not much, but it's cheaper! We, in our turn, will be forced to 'knock down' the price. A price war will go on... but the prices can't be reviewed every day to take the rates of inflation into consideration."

[Interviewer] **"So you have not taken up commerce for the sake of the good life?"**

[Milanov] "Where have you been? If the Russian Ministry of Health had given us the budget which was necessary for normal operation and for the maintenance of staff, no one would be raising the question of paid medicine. We have gotten involved in commerce not for the sake of profit, but in order to avoid massive dismissals. We can't even buy new equipment from the resources we have earned. Everything is spent on the patients, wages, public utilities, and taxes."

[Interviewer] **"We have heard that your institute has been trying out on itself yet another new 'antibiotic' against ruin, the paid training of medical personnel..."**

[Milanov] "That shouldn't surprise anybody: it's not cheap to train doctors. Even if you take into account the fact that nobody has been paying attention in this country to the quality of the training of surgeons. It's no secret that there are surgeons in some hospitals whom the relatives of patients are prepared to pay just to keep away from the operating table."

"From whom are we going to get money for training? First and foremost, we will get it from the citizens of the sovereign states and other foreigners. Incidentally, the former republics have agreed to this, since they are very interested in the training of national medical cadres. And the amounts of money have been stipulated. Internship and postgraduate fellowship will go from 80 to 200 thousand rubles (not including payment for living expenses and stipends). In the past all monies for the training of foreigners were received by the Ministry of Health or the Academy of Medical Sciences. Now they will go to those who are going to teach and to their clinics."

"With regard to Russian citizens, I found out today, for example, that the Ministry of Finance has decided in principle to cancel free training. Even those who are already taking their internship and postgraduate fellowships will have to look for sponsors. The argument is being made to us that resources 'for cadres' have been deposited in the budgets of the local public health organizations. This is not to be believed. If they have been put in those budgets they are meager. Moreover, all of these dispositions have not been recorded on paper."

[Interviewer] **"Let's refer back again to the Western model: state loans for training. We have not seen a trace of**



such a model. So there are not a few talented people without a penny in their pockets. What's going to happen with those fellows?"

[Milanov] "Our Center has decided to establish several stipends for the most gifted."

[Interviewer] "So how much will it cost now to defend a dissertation?"

[Milanov] "It will not cost our, that is the Institute's, fellows and candidates a penny. People will have to shell out 'on the side'. It's true that in some cases draconian measures are being applied to staffers as well: If they have not gotten their dissertation prepared in time, they will have to come up with 30 percent of the cost of the defense."

[Interviewer] "Will there be any criteria for acceptance for a fellowship other than the thickness of ones wallet?"

[Milanov] "All of the usual exams will be kept up. In addition there will be a three-month trial period. If we are convinced that an individual is not suitable for us, we will make a deduction and return their money. Incidentally, the fact that the fellowship is subject to a fee also has an effect on the quality of the teaching. Previously a research supervisor could take on five clinical interns and not seriously involve himself with any of them. Now this is not going to go on."

"And in general our Institute now reminds me of an individual who has fallen overboard in a storm. He flounders about with all his might just to stay afloat. Our entire 'commerce' has amounted to 40 percent of the budget this year. Just enough to stay afloat..."

### Market Transition Affects Oncology Center

927C0385A Moscow TRUD in Russian 22 Jan 92 p 4

Interview by S. Sukhaya, conducted as a conversation with Academician N. N. Trapeznik of the Academy of Medical Sciences, under the title: "Oncology: The Diagnosis Is Not Fatal"; under the rubric: "Medicine and Life"]

[Text] **The inevitable has come to pass; limping and stumbling, we have nevertheless started to take steps toward the market. What does this signify for the largest scientific and medical institutions, such as, for example, the universally known Oncological Center on Karshinskiy Shosse? That was my first question to its Director, Academician N. N. Trapeznik of the Academy of Medical Sciences:**

[Sukhaya] "What is happening these days with your center? Are oncology and commerce compatible?"

[Trapeznik] "At this point we are in a state of suspense. Thus far we have been on the union budget; we have not taken money from a single patient, but we have already been actively engaged in cost accounting for a long time. Approximately 20 percent of our beds have been set

aside to serve patients on the basis of contracts; their production organizations are paying for their treatment. A private insurance company has been formed with the center as its basis; it, too, is concluding contracts with large production organizations to insure their personnel.

"We have lived for a whole year without the budget, but a good international reputation is saving us. We have concluded commercial contracts with fifteen foreign companies to study antitumor preparations and to develop new treatment protocols. So we have the possibility of making money. After all, the companies pay for each patient included in the protocol."

[Sukhaya] "So, in essence you are earning currency by testing medications on patients. Do doubts not arise as to the ethical character of this type of activity?"

[Trapeznik] "The observance of medical ethics is an absolute requirement of our work. I will explain in greater detail. Today all scientific research institutions throughout the world work in accordance with so-called clinical protocols. Let us assume that a new preparation has appeared. We develop documentation relating to its study. Before anything else, it is reviewed by a special ethics committee. It decides whether or not the ethical standards of the doctor-patient relationship are being violated. Then a discussion is held by the academic council, and only after that do we begin to study the medication."

"As a rule, new preparations are studied in patients whom it has not been possible to help. Previously all this was done sub rosa, without the patients' knowledge. Now, on the other hand—incidentally, this a requirement of the companies we are working with—we completely inform the patient regarding everything. He makes the choice himself, to be treated with the new medication, or to decline to do so; moreover, he gives written consent to such treatment. In this precisely, in my opinion, lies the guarantee of the observance of all moral and ethical standards."

"Mathematicians always take part in the preparation of the clinical protocol. They calculate how many patients are necessary to include in it in order to obtain statistically significant data. Let us say, we have to treat 50 patients—the company will pay us from 800 to 1,000 dollars for each of them. That is how it is done in other countries."

[Sukhaya] "You have only been talking about some patients. It has become a commonplace to complain about the shortage of medications. What are you using to treat your patients?"

[Trapeznik] "There is a bank of antitumor preparations on the international market. There are more than 30 medications: ours, American, Japanese, and Italian. We had them until recently, but now the situation is

becoming worse and worse. The purchase of these preparations has been carried out through the 'Soyuzfarmatsiya' firm, the former Main Pharmaceutical Directorate under the USSR Ministry of Health. This firm has now been eliminated; what will happen from here on is unknown. Company representatives who have been dealing with us—I have been talking with many—are completely distraught. How are medications going to be delivered to our market? They do not know with whom they will be dealing.

[Sukhaya] **"The country has fallen apart. Is the system of oncological services also being scattered?"**

[Trapeznik] "I do not think so. For instance, our Center has been analyzing all of the statistics on morbidity and mortality from cancer on the territory of the former USSR. When the process of disintegration began here, I wrote a letter all of the republics, ministers, and institute directors, and they answered that they will be sending the necessary statistical data as before. All of them were in favor of our continuing to collaborate. Politics has not been impeding us.

"The trouble lies elsewhere. We do not even have the most elementary things, sodium bicarbonate, solutions for intravenous infusions... We are occupied with supplying ourselves, we are scrounging everywhere. This summer we sent two trucks to the Ukraine to get glucose in ampoules.

"There are huge problems involved in supporting the work of the operating rooms. The laundry room is out of order. How do we explain this? During the time when it was mainly the military-industrial complex which was developing in this country, such 'trifles' as laundry equipment were completely 'farmed out' to the 'fraternal socialist countries'. Everything we have comes from Czechoslovakia, and all of the machines are out of order. So far we have been buying disposable linen, paper linen, but I hope that the laundry room will be repaired in half a year from now. The same goes for the autoclaves. Those are all imported, and they have also broken down. Economic affairs are simply wearing us out."

[Sukhaya] **"Let us talk a little bit about something that is troubling a lot of people: sensations, inventions, healers involved in the treatment of cancer. The newspapers, ours included, have been writing a lot about this. 'Praise' and 'detraction' often collide. So where is the truth? Is it somewhere in the middle?"**

[Trapeznik] "We have formed a group of 20 to 25 of our leading specialists. They are reviewing all of the proposals that are coming to us (and there is a large number of them!) that have to do with new methods of diagnosis and treatment and with the causes of cancer. If we find a 'grain' [of truth], we submit this for discussion to the academic council and begin testing. Previously the Ministry of Health or the Central Committee (CC) [TsK] of the party simply gave the instruction: 'Check this method!' We wasted a huge amount of energy and resources. Three or four years ago I remember the whole

saga about katreks—that was a preparation from shark liver. What a stink was raised all over the country! It ended up that thousands of people died who were treated with it in vain.

"Everybody kept quiet. The inventor was not heard from nor seen, and katreks was declared to be a panacea! How much money was frittered away! Ten institutes studied this preparation under orders, and now at least one of them which had announced the sensation has written about what resulted!

"We have antitumor preparations which we have obtained from plants, but they have been selected and studied as a result of long-term experiments. There is, for example, the medication vincristine, which comes from a plant. The Americans, it seems, have found a very good preparation, taxol, which is isolated from the bark of a tree growing along the coast of the Pacific Ocean. We cannot rule out everything. Somebody may find something valuable. But of those methods which we have studied, not one is being used in treatment."

[Sukhaya] **"The tenacity of such sensations is easily explained—people want to 'grasp at straws'."**

[Trapeznik] "Of course, but these 'proven' sensations cause a great deal of harm. I myself have seen patients treated at the hands of Chumak. They came to us when we were no longer in any position to help them.

"The Americans have a concept: 'unproven cancer treatment methods'; a special booklet is periodically published in which each such method is described and a photograph of its 'author' is printed so that people know that this method should not be used. Incidentally, one of the tasks of the recently formed anticancer society will be the dissemination of information regarding such methods."

[Sukhaya] **"Do only oncologists belong to this society?"**

[Trapeznik] "No, this is not a professional organization. We formed it along the lines of the analogous American society. Any person and any organization can participate, although the society will in fact be headed by professionals. Its purposes are propaganda, prevention, and help for patients at home. We are opening offices for antipain therapy in our district, to relieve those dying of oncological diseases of pain. Many, many volunteers work in the American anticancer society. We hope that in time they will also come to us."

[Sukhaya] **"Many perceive the diagnosis of 'cancer' as a death sentence which cannot be appealed. Can the statistics take issue with this?"**

[Trapeznik] "In America today approximately 50 percent of cancer patients are cured. Here, 42 to 43 percent are cured. How do we explain these figures? The rate of cure here corresponds approximately to the rate of cure of the colored population of the U.S. We cannot get away from the fact that medicine and public health are social questions. The white population has greater possibilities

of undergoing prophylactic examinations. They are better educated. The lifestyle is different. They follow a diet more often and more often do not smoke, and so their morbidity is lower. If we are talking about cure, they simply go for treatment earlier and are treated under better conditions than the colored population. So here we find that our conditions correspond exactly to that 'colored'..."

[Sukhaya] "Does that mean that we have not yet caught up to the whites?"

[Trapeznik] "Unfortunately. Now can you understand exactly why Western companies are coming to us, for example, to develop methods for the treatment of neglected forms of breast cancer? It is precisely because there it is an extremely rare situation for a woman to come to a doctor with a neglected form of that cancer! Here there are plenty of such cases!"

[Sukhaya] "You mentioned Chumak, but, after all, he is involved, in essence, with a kind of psychotherapy. Does psychotherapy not have an influence on the treatment of oncological diseases?"

[Trapeznik] "Those are entirely different things! Of course, the work that psychologists are doing with our patients is very important. Especially in the rehabilitation period. It is not for nothing that the Americans have distinctive clubs and groups of oncological patients who have undergone operations. Clergymen are brought in to work at hospitals. This undoubtedly has a definite psychological influence. As part of our center we have an Institute of Pediatric Oncology. Priests have already come to us two or three times—after all Kolomenskoye is right near by—and have baptized children. They often come to our Pediatric Institute. That makes sense!"

"With regard to patients' clubs, I am sure that we will come to that in time, but, after all, until now we have been keeping the diagnosis secret from our oncological patients! If we do not communicate the diagnosis, what kinds of patients' clubs can we be talking about?"

"We have to change our relationships with patients. There exists the doctrine of patient-doctor relationships—deontology, the doctrine of the morally obligatory. Based on it we previously had a conviction that we were obliged to conceal the diagnosis, in essence, to deceive the patient. I hope that sooner or later we get rid of such a 'saving lie'. The sooner this happens the better."

### Turkmenistan Studies Water Problems

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in Russian 6 Jan 92 p 3

[Article by Kh. Evzhanov, Doctor of Technical Sciences, Deputy Director for Research of the Institute of Chemistry of the Academy of Sciences of Turkmenistan, under

the title: "Supply Problems of Pure Water for the Population Are Being Solved Slowly"; under the rubric: "Science"]

[Text] The problem of supplying the population with clean water is one of the most acute in the region of Central Asia, and especially in our republic. An intolerable ecological situation has developed as the result of an increase in its consumption and of the salinization and pollution of fresh water sources. The salinity of the Amu Darya in the lower reaches of the river sometimes reaches the level of 2-2.5 grams per liter, although the sanitary standard is not more than one gram. Moreover, various toxic substances are present in it: pesticides, defoliants, phenols, heavy metals...

Also, the high morbidity of the population, first and foremost of children and women, especially in the Aral Sea Region [Priaralye], can be explained if one takes into account the fact that water is consumed from open reservoirs and from irrigation ditches in the majority of population centers.

How can people be supplied high-quality water? Some steps are being taken in this regard, but there is much lacking for this work to be expanded. Above all, until now there has been very little information regarding the organomineral components and the various toxic chemicals of all the republic's waters. They have not been classified, they have not been characterized relative to the region of their specific utilization, and an analytical chemistry service network has not been set up.

It is known that collector-drainage water (CDW) [KDV] is the principal source of pollution and salinization of fresh water. Since they cannot be used due to the high content of toxic chemical substances, they are discarded. They are discarded without any purification into the Amu Darya, into the Sarykamys, and into the desert. If nothing else, this fact indicates the kind of damage they do to the environment: Not less than 10 cubic kilometers of these waters are accumulating annually on the territory of Turkmenistan, if one takes into account the drainage runoffs from neighboring Uzbekistan. Their average mineral content is five to seven grams per liter.

There are many purification methods, but under our conditions, to demineralize water with a salt content of up to 10 grams per liter, which includes most of the CDW according to all technical and economic indices, preference goes to the membrane methods of desalinization, reverse osmosis, and electro dialysis. However, they must be preceded by pre-purification of the water, which, in its turn, requires knowledge of the complete and detailed chemical composition with regard to the content of macrocomponents, elements of hardness, heavy metals, organic contaminants. Moreover, when CDW are demineralized, it is impossible to avoid being left with enormous quantities of residual brine, the chemical processing and further concentration of which remain practically unstudied at the present time.

Nevertheless, the process of accumulating the necessary data is going forward. Work along these lines is being conducted in many scientific institutions, including the Institute of Chemistry of the Academy of Sciences of Turkmenistan, which heads the organization dealing with these problems. What has been done already?

The salt composition of drainage waters formed throughout the entire territory of the republic has been established and classified. The main principles determining the degree of mineralization and the content of contaminants have been identified. The order of crystallization of the salts and the behavior of microcomponents during the concentration of drainage waters through evaporation have been established. The reagents and sorption methods for the purification and preparation of the water for desalinization by membrane methods have been worked out. The processes of desalinization have been investigated in laboratories and industrial installations. The possibility of reworking the residual brine by solar evaporation to obtain sodium sulfate and chloride has been studied.

Desalinization installations have already been operating for several years near Ashkhabad in the "Turkmengazprom" Production Association [PO] system and in Telmanskiy Rayon; these installations have a capacity of 10 to 12 cubic meters per day. They supply the local population, children's institutions, hospitals, and a worker's canteen with conditioned drinking water. There are contracts to put 15 more such installations into operation. The cost of obtaining such water is hundreds of times lower than that which is now realized by the Ashkhabad plant.

Quite a bit has been done at the Institute of Chemistry for the contemporary equipping of physicochemical methods of analysis. The most up-to-date apparatus makes it possible to conduct the most complete mass analytic monitoring of more than 50 principal ingredients of mineralized waters. The complete chemical composition of the drinking waters of Tashauz Oblast has also been studied using such apparatus. However, the Institute's scientists have become concerned by the fact that their research efforts are not finding wide application.

The construction of an all-union experimental and testing complex for the demineralization of collector-drainage and underground mineralized waters should have been completed already in Turkmenistan. The initial data for its planning have already been distributed

by our Institute. The complex should become an all-union testing ground for the carrying out of experimental operations and the working out of technological processes and equipment. It has been possible on the basis of the results obtained to distribute technical data and practical recommendations for the planning and construction in the future of large-capacity desalinization stations and water chemistry combines on main-line interceptors. However, at the present time only the planning of the center of the desalinization complex with an output of 1200 cubic meters has been accomplished. There are such stations in many countries of the Near East and North Africa. We have carried out negotiations with foreign companies with the aim of soliciting their participation in these efforts, but due to the lack of foreign currency, they have ended without result.

It is necessary to create a unified specialized center in the republic; the formation of a state scientific-technical "water" ["voda"] program is required for its scientific provisioning. The problem is so urgent that a special resolution on the subject was passed at the recent meeting held at the Institute of Chemistry of the Academy of Sciences of Turkmenistan. Prominent scientists of the country, A. I. Rusanov, Corresponding Member of the USSR Academy of Sciences and Peoples' Deputy of the USSR, I. I. Lishtvan, Vice-President of the Academy of Sciences of Belarus, and others supported just such an approach to the solution of this problem.

Many scientific institutions are presently involved in our Republic with water-related problems. Such a scattering of scientific forces throughout different organizations produces few results. Many millions in assets allocated from the state budget for the improvement of the ecological situation and the water supply of Tashauz Oblast are being expended without the necessary yield. The trouble is that every sort of organization and institution, including dubious ones, are being attracted from the whole country; their activity is practically unmonitored. A specialized center could concentrate all the scientific forces in order to solve the problem in all its aspects.

It is necessary to begin the training of specialists of the appropriate specialization in the teaching institutes. It is advisable to organize industrial production in the republic to produce water-purification and desalinization apparatuses and other equipment.

Supplying the population with water meeting the State Standard [GOST] is a vitally important task. It is a question of the peoples' health. Can there be a more pressing problem than that?

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