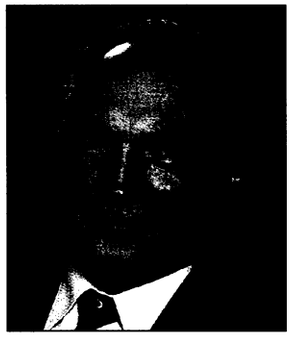
RUSSIA

Bulgak Fails to Deliver on Reform Plans

MOSCOW—Since he was appointed in February, Vladimir Bulgak, the deputy prime minister in charge of science, has been offering views on Russia's scientific enterprise that the press has described as daring and even reckless. He has suggested that the number of state-funded institutions be substantially reduced, that research efforts be concentrated on a limited number of important areas, and that the Russian Academy of Sciences (RAS) be radically restructured and close one-third of its institutes. "If RAS doesn't start to reform itself, it will be reformed from above," Bulgak said in late July. And he has backed up those statements by launching a process of evaluation and accreditation of all government-funded institutes, with a view to closing the least effective ones (*Science*, 13 June, p. 1639).



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Words, not deeds. Deputy premier Vladimir Bulgak.

Bulgak's public rhetoric raised expectations that the Russian government would commit to some far-reaching reforms when it published its long-awaited plans for the country's research system last month. But the document, drafted by the science ministry under Bulgak's guidance, disappointed reform-minded researchers, who have criticized its scant detail and lack of any timetable or deadlines. "It doesn't set up any concrete aims for the government," says Eduard Mirsky, head of a lab at the RAS Institute of Systems Analysis in Moscow.

The reform plan, published a month late, does include as goals reform of the RAS structure, encouraging technology transfer to industry within the research system, and creating regional research information centers. The document does not, however, specify how or when the government plans to achieve these goals. Mirsky also complains that it does not propose any specific changes to the scientific bureaucracy in government or in bodies such as the RAS. With so little detail in the document, "everything depends now on who will control the reform process," says Evgeni Velikhov, head of Moscow's Kurchatov Institute.

Reformers were also disappointed that the plan does not propose any increase in the share of the science budget for peer-reviewed competitive funding, coordinated since 1992 by the Russian Foundation for Basic Research. This omission is being viewed as a victory for the RAS. "During the last few years, this share was constantly growing, and it is time for us now to take a break and to sum up our experience in this respect," said RAS President Yuri Osipov at a press conference on the reform plans last month. Vladimir Fortov, Russia's science minister, supports Osipov's line, saying that competitive funding "has many drawbacks" and that it is not a universal panacea.

The overall science budget is also unlikely to grow. The planned budget for next year is about $2.2 billion, equal to this year's after more than half the total research funding was sequestered in late spring. Bulgak believes this figure is "the optimum." Apart from the Trade Union of RAS Employees, which organized demonstrations in the autumn, the research community has accepted this reduced budget with resignation. "Certainly we have to struggle for an increase of budget funding. But Bulgak's approach is realistic. Dependence on state funding is dangerous, like drug addiction. We have to be more enterprising and look for alternative sources of finance," says Velikhov.

Bulgak's evaluation and accreditation of institutions could provide some relief for highly rated institutions—if the government indeed closes those that do not score well. But researchers have been critical of uncertainty surrounding the criteria to be used. "I've been trying with difficulty to persuade the RAS authorities to use standard criteria, used all over the world, such as impact factor, citation index, and the number of papers published in science periodicals," says Alexandr Spirin, head of the Pushchino Center for Biological Research. "If I fail to convince the RAS Presidium, I will complete the reform at least in my own center on this basis."

Although he is disappointed by the vagueness of the reform plan, Mirsky says he finds it quite understandable in view of the forces ranged against reform, principally within the RAS Presidium. "The counter-reformist lobby is constantly struggling for the preservation of the status quo in Russia's research system. The former science minister, Boris Saltykov, attempted to very gradually, though effectively, introduce his reforms and was finally dismissed for this. No one wants to end one's career the same way by proposing something concrete."

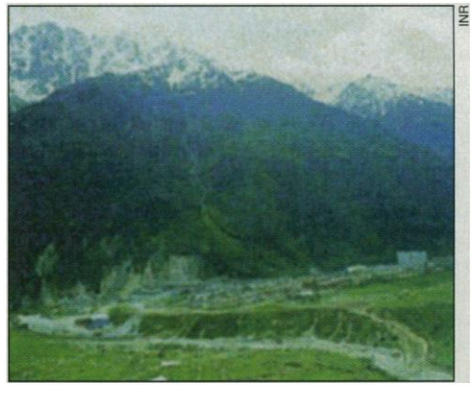
–Andrey Allakhverdov and Vladimir Pokrovsky

Allakhverdov and Pokrovsky are writers in Moscow.

RUSSIA

Thieves Target 60-Ton Neutrino Detector

MOSCOW—For much of the past year, government officials have been trying to confiscate 60 tons of ultrapure gallium that forms the heart of a neutrino detector beneath the mountains of the northern Caucasus. Late last month, armed thieves almost beat them to it. They managed to get past an elaborate security system and nearly succeeded in stealing the detector's valuable metal core. Russia's Ministry of the Interior is now conducting an investigation of the break-in under the personal control of Minister Anatoli Kulikov.



INR

Target. The remote Baksan neutrino observatory's gallium is attracting unwanted attention.

The $60 million Soviet-American Gallium Experiment (SAGE) is one of the largest research collaborations between Russia and the United States. Operated by the Russian Academy of Sciences' Institute of Nuclear Research (INR), the neutrino detector has, since the mid-1980s, been studying the flow of neutrinos streaming from the sun. Low-energy neutrinos can transform a gallium nucleus into radioactive germanium-71, which can later be extracted and counted. SAGE's 60-ton gallium detector sits in a 3.5-kilometer tunnel deep below Andyrchi mountain near the town of Baksan.

Leonid Bezrukov, deputy head of the INR, told *Science* that the break-in was carried out by six masked men armed with two machine guns, according to the account of a forklift truck driver who was taken hostage. Before breaking in,

the burglars managed to cut the communication cables linking the remote laboratory to the rest of the world. They seemed to know what they were looking for because they ignored several laboratory buildings and headed straight for the tunnel and the vast, underground experiment hall. The entrance to the hall is protected with two metal doors and iron bars.

The high security was installed because the gallium has been under threat of confiscation by the government, apparently to provide some quick cash. Last year, the Ministry of Fuels and Power-Production Industries sold the gallium to the Institute of Rare Metals. Although removal of the metal was halted following protests by INR staff and SAGE's international collaborators (*Science*, 11 April, p. 193), the threat of confiscation still hangs over the lab. There have also been three earlier attempts to steal some of the gallium, as a result of which four people are now in prison.

To secure the gallium, its location in the experimental hall was disguised. The precautions also included a special system of passes: Entry into the hall is restricted to those on a special access list approved by the administration. The thieves did not know this and sent their driver hostage ahead to open the doors, but access was denied. Because the break-in took place on a weekend night, only two people were on duty in the hall—an engineer and a technician. They instantly realized what was happening and locked all the doors and turned off all the lights.

The thieves had come well prepared, however. "These guys turned out to be pretty smart," Bezrukov says. They managed to break open the iron bar and the first door, and then used a forklift truck to break down the second door. By this time, the engineer and the technician had escaped through a ventilation tunnel running parallel to the main tunnel and alerted the lab personnel. By the time staff members reached the hall, the thieves had forced open many of the doors in the hall, but had fled before reaching the one containing the gallium.

Criminal investigators working on the case are forbidden by law to discuss it, but Bezrukov believes the thieves may have had help from a lab employee because of their knowledge of the layout of the observatory, and he even speculates that the Ministry of Fuel may have been involved. "The battle for the gallium has never stopped. It was continuing all this year, and we are gradually losing it."

Bezrukov says that INR has now stepped up security even further. Staff members now have two-way radios, and other equipment has been installed which Bezrukov declines to describe for security reasons. Alongside this, he says, "we have another militiaman at the entrance ... the post costs us 10 million rubles a month [about $1700], and having funding shortages we cannot afford anything else."

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SCIENTIFIC MISCONDUCT

Editors Seek Ways to Cope With Fraud

LONDON—A new committee, set up by the editors of nine prominent medical journals, called last week for governments to tackle scientific misconduct and fraudulent publication in a more systematic way. "Cases are still exposed mostly by chance, and we worry about the scale of the problem," says Richard Smith, editor of the *British Medical Journal* and a member of the Committee on Publication Ethics (COPE), which is one of several organizations in Europe currently looking into ways to beef up mechanisms to deal with publication misconduct.

COPE, whose members include the editors of *The Lancet*, *Gut*, and *The Journal of the American Medical Association*, invited more than 100 other editors here to discuss the scope of the problem and how to deal with evidence of misconduct in publications submitted to them for review. Editors related their experiences with incidents including the forging of signatures of patients and members of ethics committees that monitor research programs, plagiarism of research published in major Western journals for republication in Eastern European journals, publishing reports of patients who could be identified without their consent, and ignoring agreed inclusion and exclusion criteria for enrolling patients into a trial to bolster numbers. "Normal peer review can sometimes identify problems, but sorting through raw data to investigate them can be a miserable business," says Smith.

These incidents were described without revealing names because of worries about libel laws and so that the careers of whistle blowers who brought cases to light would not be jeopardized. The meeting backed calls by one of the legal experts on the committee, Ian Kennedy of University College London, for the development of a protocol for editors to help protect genuine whistle blowers. But a key initial goal is just to advertise the scope of the problem. COPE, says Smith, will publish a list of reported cases of misconduct each year to sensitize editors to the problems.

Shared concern. Guarding against fraud.

COPE's efforts are being matched by other initiatives in Europe. In Germany, the main granting agency, the DFG, has appointed a commission in the wake of allegations that a pair of researchers manipulated data while working at Berlin's Max Delbrück Center for Molecular Medicine in the mid-1990s, and possibly at other laboratories before and afterward (*Science*, 15 August, p. 894). "It's an issue that has been dormant in some countries for too long," says DFG President Wolfgang Frühwald. The commission is expected to report its recommendations before the end of the year.

The Max Planck Society, Germany's premier research organization, is also carrying out a review of procedures it may adopt to help counter misconduct, and the results are also expected shortly. And at the most recent meeting of the European heads of research councils in Dublin last month, the problem of scientific misconduct was at the top of the agenda. The council heads are looking in particular at Danish efforts that have culminated in a new national committee on scientific dishonesty. Unlike the U.S. Office of Research Integrity, which can investigate misconduct claims only when they involve government funds, the Danish committee can work across the scientific spectrum. COPE is also interested in the U.S. and Danish efforts. "Editors can only go so far," says Kennedy. "Eventually you need an independent body to investigate claims fairly."

–Nigel Williams