

cluding authors, editors, and academicians." Brodsky notes that AIP—unlike most of its competitors—is a not-for-profit, noncommercial organization.

Some of the journals' Russian staff also appear to be upset by the move to publish the English versions from Moscow. *JETP* Editor Vsevolod Gantmacher told *Science* that the journal survived Russia's current financial crisis only because of the support of AIP, and it has now become one of the most popular journals among both Western and Russian scientists—a popularity boosted by its appearance on the AIP Web site in 1997. "Scientists turn to our journal only two times less frequently than to *Physical Review Letters*," Gantmacher says. To terminate the contracts with AIP, he says, "would mean that the journal would be deprived of all the existing advantages and doomed to become a second-rate journal." Says Starobinsky: "If all the journals are given to MAIK Nauka, then it will become a total monopolist."

—ANDREY ALLAKHVERDOV

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RUSSIA

Relief From Finance Farce?

MOSCOW—Russian scientists got another painful lesson in the vagaries of the country's bureaucracy earlier this year, when the government installed a new system for distributing grants awarded by the Russian Foundation for Basic Research (RFBR) and its offspring, the Russian Humanitarian Scientific Foundation—the country's fledgling competitive grants agencies. Many scientists' grants failed to appear, others got only a fraction of their awards, and nobody at the foundations could track what had happened to the money. Now, the government is trying again. A new distribution system was installed this month, and researchers are keeping their fingers crossed.

The trouble began when the government decided to free the two foundations from the hassles of handling their own grant money. The foundations would simply choose their grantees and inform a section of the Finance Ministry called the Central Treasury. The ministry and a network of local treasuries around the country would then take care of disbursing the funds.

The system soon ran into problems, says Mikhail Alfimov, head of RFBR. Because of the weak and irregular flow of finance from the budget, he says, grantees would often receive no money or only a fraction of what they were due. The funds were also not marked as foundation money, so if it was not a sum that the institution was expecting, it

would often be used to pay electricity or heating bills and the grantee would be unaware of its fate. Similarly, the foundations received no information on what was getting through. When money did arrive, the Central Treasury put strict limits on how grantees could spend it, says Alfimov. "Suppose a grantee urgently needs to go to a conference, but he receives money for equipment. ... The finance ministry does not allow [him to swap] it."

The problems came to a head at a meeting of RFBR funding managers in June. "We agreed that if we cannot effectively distribute grants, it would probably be honest to just resign," says Alexei Reskov of the RFBR's department of biological and medical research. And at a heated meeting of the RFBR's Scientific Council early this month, earth scientist Felix Letnikov from Irkutsk strongly criticized the system, saying that "the foundation's initiative has been hijacked by bookkeepers."

Last week, Alfimov says the finance ministry bowed to pressure and established a new system of grant distribution. The Treasury will now send a lump sum to the grantee, who will liaise directly with RFBR on how it should be spent. The funding will also be marked as an RFBR grant, and no institute will be able to use it for any other purpose. Although the new system can do nothing about erratic amounts of funding arriving from the budget, at least now the RFBR and its grantees will know where their money is. "We have managed to educate the Finance Ministry," says Alfimov. "They are used to operating the big volumes. But we have explained to them the specific needs of the foundations."

—ANDREY ALLAKHVERDOV AND
VLADIMIR POKROVSKY

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PALEOBIOLOGY

A Fruitful Scoop for Ancient DNA

In the movie *Jurassic Park*, a collector snapped up hundreds of thousands of mosquitoes preserved in amber for DNA they had sucked from dinosaurs. In the real world, however, amber has been a disappointment, yielding no reproducible traces of ancient genetic material. Now researchers report that the treasure of ancient DNA can instead be gleaned from a less glamorous material: fossil feces.

On page 402, a team led by molecular biologist Hendrik Poinar and geneticist Svante Pääbo of the University of Munich demonstrates a way to unlock DNA trapped inside ancient feces. The dung they studied, a firm lump left by an extinct ground sloth about 20,000 years ago, offers clues to that species' ecology. Applied to other droppings, the method may be able to provide a wealth of

clues about the ecology and relationships of extinct animals—and perhaps even about early humans. "This adds several new dimensions to the study of ancient animals," says Bob Wayne, an evolutionary biologist at the University of California, Los Angeles.

The Pääbo lab is one of the few to have successfully extracted DNA from ancient bones (*Science*, 11 July 1997, p. 176). But



Data dump. This 10-centimeter fossil dropping preserves DNA from the sloth's diet of greens.

the team wasn't having any luck with the well-preserved samples of fossilized dung, called coprolites, collected from Gypsum Cave near Las Vegas, Nevada, a gathering place for ice age animals. Then the researchers chemically analyzed the samples and found several compounds that indicated the presence of Maillard products—sugar-rich tangles of proteins and nucleic acids that prevent DNA amplification. "Everyone looks at the Maillard product as evil," says Poinar. But he realized that the tight cross-links might protect DNA by keeping out damaging water and microbes. The question was how to crack open that coat.

In 1996, the team spotted a possible answer in a *Nature* paper on a chemical called *N*-phenacylthiazolium bromide (PTB), which when given to diabetic rats cleaves the bonds between sugars and proteins—the same kind of bonds that may entangle DNA in the Maillard products. "We thought: 'Wouldn't it be great if PTB would release DNA?'" But it was still a complete shot in the dark," recalls Poinar.

The shot hit home. Extracts from the sloth coprolite treated with PTB yielded sequences of mitochondrial DNA, presumably from intestinal cells shed into the feces. It probably came from an extinct ground sloth, *Nothrotheriops shastensis*, because the bones of that animal are scattered throughout the cave and because the DNA is a good match to that of a related extinct ground sloth, *Mylodon darwini*, whose DNA was derived from bone and soft tissue.

The team was also able to extract a wide variety of plant DNA from the coprolite—clues to the vegetarian sloth's diet. They