LETTERS

"Frankness and caution"

A chemist suggests that certain "marigolds, after steaming, yield a stable oil" that could kill dengue fever–causing mosquitoes in Cuba. A researcher describes the collapse of an "international expedition to the Papovka River Valley" in 1996. Readers react to a news article about "delay" and "difficulties" in Russia's space program (below, cosmonaut and astronaut in happier days). And the U.S. National Research Council is said to have undergone "tremendous changes."

Fighting Dengue in Cuba

A resurgence of dengue fever in Cuba associated with the failure of a large government program to maintain an early success in control of *Aedes aegypti* is reported by Gary Taubes (News & Comment, 11 July, p. 174). Experts are reported to believe that effective and long-standing control might follow individual community efforts to control this mosquito vector for dengue fever. The article also reports that *Aedes aegypti* breeds in human-made containers. In 1991, my co-authors and I reported showing that certain commonly available marigolds, after steaming, yield a stable oil that acts as a larvicide against *Aedes aegypti* both in laboratory tests and in barrel tests (*1*). Because *Aedes aegypti* usually forms larvae in limited volumes of water, this finding might be worthy of investigation for control of dengue fever in Cuba.

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References

1. M. M. Green, J. M. Singer, D. J. Sutherland, C. R. Hibben, *J. Am. Mosq. Control Assoc.* **7**, 282 (1991).

Harassed Expedition

Jeffrey Mervis' article "Cold wind blows through Arctic climate project" (News & Comment, 27 June, p. 1965) reports an incident similar to my own experience in attempting to join an international expedition to the Papovka River Valley in August 1996. The expedition was planned in detail by Anatoly Shvidenko, a well-known forest scientist in Russia. It was stopped in Yakutsk by harassment similar to what Larry Hinzman and Vladimir Romanovsky are reported to have experienced. The harassment included delays, an exhorbitant fare for air travel beyond Yakutsk (despite an earlier assurance of the price), the nonavailability of seats and tickets, the lifting of passports of a German couple on the expedition because of a technicality involving their visas, difficulties in obtaining hotel space (although reservations had been made), the interest of the reestablished security forces in our presence, and rumors of an imminent robbery. The trip was abandoned, despite the elaborate arrangements, and participants returned to Moscow.

The reasons for the harassment were unclear. One element was the emergence of nationalism in the Saha Republic. Apart from a fascinating landscape, Yakutsk has little to recommend it. The current attitude toward science and scientists there is clearly a step backward.

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Russian Space Program

Richard Stone's article "Russia's last shot at space" (News & Comment, 20 June, p. 1780) has resulted in numerous anxious inquiries from our colleagues at many institutions and organizations all over the world who participate in the implementation of the Russian Space Science Program. In view of this, we asked Yuri Ossipov, chairman of the Space Council of the Russian Academy of Sciences, to clarify matters. The Space Council is the main body that defines fundamental research carried out by the Russian Space Program, subject to approval by the government. His statement is as follows.

The Space Science Program, which was approved by the Russian government, is at this moment considering the launch of three "Spektr" astronomical observatories as its highest priority: "Spektr RG" for research in x-ray and gamma-ray bands; "Radioastron," a space-to-ground radiointerferometer; and "Spektr UV," an optical telescope 1.7 meters in diameter for observation of ultraviolet and optical bands. All three observatories involve wide international cooperation and will be launched in the next several years. A major part of all funds available for the Space Science Program is allocated to these projects.

Some delay with these launches is, of course, possible because of funding limitations.

Apart from this, a launch of small satellites is planned for solar research and for research on solar terrestrial physics ("Koronas-F" and "Koronas-Photon"), and the launch of the "BION-12" satellite for biological research is also being planned. A study of spacecraft for planetary exploration, including Mars, is also being carried out.

Some funding is directed to the support of operations of existing satellites ("Interbol-1," "Interbol-2," "Granat," "APEX," and "KORONAS-1"). New experiments on the manned scientific complexes "Mir" and "Alfa" are also being prepared.

In spite of the known economic difficulties, we hope that fundamental space research will be successfully continued.

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Funding practices, not only in Russia but also in the United States and other Western countries, have created the paradoxical situation that the number of specialists working in the military research sector in Russia has shrunk only 20%, while in the civilian research sector the number has shrunk around 50%. Further, the focus of the programs on institutes and big science projects enables scientific administrators whose careers date to the Soviet era to control the research agenda. Many are good scientists, but they appear to have no intention of allowing the perquisites of rule, and the control of resources in particular, to leave their hands through such processes as peer review. Russian and Western funding programs thereby perpetuate the vast bureaucratic gulf that exists between the Russian Academy of Sciences and universities, that is, between research and education.

At the same time, funds from the U.S. Information Agency, the Fulbright Program, and the newly established Civilian Research Development Foundation (CRDF) sent to Russia have totaled around $35 million. These funds have the greatest potential to change the profile of scientific research in Russia and encourage the spread of democratic institutions in science. The programs are geared to individual researchers and small research teams doing cutting-edge basic research, and the funds do not flow to them through the hands of institute directors or outdated programs. If the goal of the $1.3 billion distributed in Russia through so-called Nunn-Lugar funding has been to prevent the brain drain, then it should also provide a domestic, civilian-sector alternative for the employment of weapons specialists to accelerate a conversion of Russian military and space research.

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