

RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Canada Joins Genome Project

Canada has become the seventh country to join the international effort to sequence the human genome. The government, the Medical Research Council, and the National Cancer Institute of Canada have pledged \$22 million (about \$18.7 million U.S.) for the next 5 years.

"This is a major world program and we certainly can't afford not to be here," said science minister William Winegard in making the announcement. The other six participants are the United States, Japan, Britain, France, Germany, and Italy.

Geneticist Ronald Worton of the University of Toronto and the Toronto Hospital for Sick Children has been named head of the Canadian effort. Worton, one of 11 Canadian members of the international Human Genome Organization, headed one of the teams that in 1986 found the gene for Duchenne muscular dystrophy.

Zoologist Indicted

A federal investigation that has embarrassed the U.S. Fish and Wildlife Service (FWS) and the Smithsonian Institution for the past 4 years came to a head last week. The U.S. attorney for eastern Virginia announced the indictment of zoologist Richard Mitchell on nine counts of violating federal law—mostly tax violations in connection with his efforts to help big game hunters hunt rare animals in Asia between 1985 and 1989. Prosecutors allege that Mitchell accepted as deductible "donations" funds that were payment for his services. They also charge him with persuading hunters to file dishonest tax returns, having a financial conflict of interest, and illegally importing gazelle hides and horns.

Mitchell, currently employed at the FWS, was working at the time on international issues for the FWS scientific authority, focusing on the protection of endangered wildlife. In the late

1980s, he was briefly assigned to the science office at the Smithsonian, where—according to the institution—he was helping collect Argali sheep specimens in Tibet when he came under investigation (*Science*, 27 April 1990, p. 437).

According to the indictment, Mitchell in 1984 set up a nonprofit research outfit called the American Ecological Union through which he solicited "contributions" from hunters in return for helping them get permits to hunt exotic beasts. For example, in one of a long list of cases, the indictment says Mitchell obtained donations of \$12,500 each from two hunters, who paid "with the expectation of obtaining hunting privileges in China." Mitchell then joined them on a hunt in China, during which they killed five wild goats or antelopes—including two Tibetan antelopes, a species that is listed as endangered under international law.

Mitchell could not be reached for comment. His Washington,

D.C. attorney, Thomas Green, would say only that "the case will be defended vigorously."

Remember Tiananmen

Marking the third anniversary of the 4 June massacre in Tiananmen Square, 38 U.S. scientists, including eight Nobel laureates, have appealed to Chinese Premier Li Peng to release imprisoned prodemocracy activists. Among the imprisoned, according to human rights groups, are at least 60 scientists and science students.

The petition is a sign of the growing concern among U.S. scientists over the fate of colleagues in China, which is the "outstanding abuser of political imprisonment in the world today," says Richard Dicker, director of the Committee to End the Chinese Gulag, the group circulating the statement. That committee was formed early last year by scientists including

Chinese astrophysicist Fang Lizhi (now at the University of Arizona) and Russian physicist Yuri Orlov (now at Cornell) after several leading figures in the Tiananmen demonstration received sentences of up to 13 years.

The committee is focusing in particular on the case of Liu Gang, a 30-year-old physicist and

prominent student organizer and leader of the democratic reform movement, who is now serving a 6-year prison sentence.

Scientists are applying the lessons learned with Soviet dissidents in trying to exert pressure on the Chinese, and the

gulag committee has put out a booklet suggesting actions that can be taken at scientific conferences—ranging from dedicating a paper to an imprisoned scientist, to attempting to meet with government officials to express concerns. Two major meetings—the 19th International Congress of Entomology and the 21st Annual International Conference on the Physics of Semiconductors—are to be held in Beijing this summer. Neither physicists nor entomologists have formally adopted positions with regard to attending the meetings, but a number of scientists will be boycotting them.

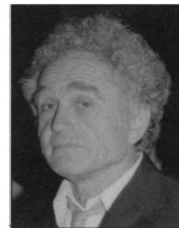
Making Converts for Condoms

Public health campaigns have barraged American teenagers with information about AIDS and how to prevent it. But studies show teens still aren't using that knowledge—there has been no increase in their use of condoms.

Social psychologist Elliot Aronson of the University of California, Santa Cruz (UCSC), thinks he's found a way to translate knowledge into action: Turn young people into advocates of safer sex,



Fang



Orlov

Zeroing in on a Black Hole

The Hubble Space Telescope has provided what may be the first direct view of the dust ring fueling a massive black hole. The dusty doughnut lies at the center of spiral galaxy M51, known as the Whirlpool Galaxy, 20 million light-years from Earth. Because the

ring is almost perpendicular to the galaxy, which is tilted nearly face-on to Earth, it appears as the wider bar in the dark "X" across the galaxy's nucleus. (The other bar could be a second dust ring seen edge-on.) The main ring, perhaps 100 light-years in diameter, is thought to be gradually shedding material into a central black hole with a mass equivalent to that of more than 1 million sun-like stars. The light-absorbing dust hides luminous material near the black hole from direct observation. But optical and radio emissions from a jet of material squirting sideways, out the doughnut holes and into the disk of the galaxy, have convinced scientists that this black hole is more energetic than the one suspected to lie in the center of our own galaxy. Holland Ford of Johns Hopkins University and the Space Telescope Science Institute and colleagues reported the observations this week at the meeting of the American Astronomical Society in Columbus, Ohio.



H. FORD/NASA

then subtly encourage them to "practice what they preach."

Aronson and four graduate students recently tested this approach on a group of 72 heterosexually active UCSC students of both sexes. The students were told they were helping with a high school education program, and were asked to write persuasive speeches about AIDS and safe sex. Half were videotaped as they presented their speeches to the experimenters.

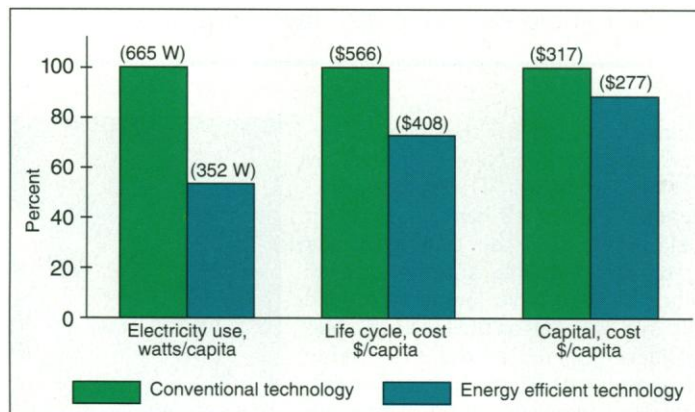
Then, half the ones who were videotaped were asked whether they had ever failed to employ condoms when they knew they should have. Aronson says this created "cognitive dissonance"—psychological discomfort caused by behavior that is inconsistent with an important belief. This group—the researchers called them the "hypocrisy" group—subsequently reported using condoms more frequently and purchasing them in greater numbers than any of the other groups in the study. Aronson thinks that schools could adopt a version of this technique by involving students in safe sex campaigns and then quizzing them to increase their cognitive dissonance.

Aronson may have some luck selling his scheme to federal health officials. "Makes a lot of sense to me," says William Darrow, chief of behavioral and prevention research for sexually transmitted diseases at the Centers for Disease Control in Atlanta. Darrow says the biggest challenge of condoms is getting people to use them the first time—and clearly Aronson's ideas would help.

Salvage Operation for Russian Biology

In the flurry of efforts to rescue Russian science, the physical sciences—computer, materials, and space science, for example—seem to have garnered most of the attention. But now it's molecular biology's turn.

Emigré researcher Alexander Goldfarb has just moved from Columbia University to the New



The frugal route. Savings from use of efficient equipment.

Energy Efficiency—the Only Way Out

The developing world's population will nearly double over the next 30 years, according to current estimates. But a drastic expansion of energy supplies—assuming that technical and bureaucratic obstacles could be overcome—would likely create serious environmental problems.

The obvious way out of this dilemma is energy efficiency, says the Office of Technology Assessment (OTA) in a new and unusually forthright report* that claims "major opportunities" exist for efficiency-related economic and environmental savings in poor countries. Even conservative estimates show that nations could cut their electricity costs in half by using more efficient manufacturing equipment, lights, and residential appliances, says OTA.

Conventional wisdom has long held that poor countries can't afford the up-front costs of energy-saving technologies—despite the fact that such investments tend to pay for themselves in the long term. But OTA undercuts this argument with the assertion that energy-efficient equipment is cheaper in the short term as well, because it reduces the demand for expensive new power plants. The only difficulty lies in passing along these overall savings to consumers.

To that end, OTA says the United States should provide technical assistance for "integrated resource planning"—a strategy whereby utilities offer incentives to both industrial and individual customers to invest in more efficient equipment. The United States could also push agencies like the World Bank to emphasize energy efficiency in their lending policies, and should itself try to "set a good example for the rest of the world," the report states.

**Fueling Development: Energy Technologies for Developing Countries*, U.S. Congress, Office of Technology Assessment, OTA-E-516, April 1992.

York-based Public Health Research Institute, where he is setting up an American-Russian Biomedical Research Foundation. Its purpose: "jump-starting" Russian biomedical research and scholarship and "countering the brain drain of Russian scientific elite."

Goldfarb says that between 10 and 30 molecular biology labs in Moscow, St. Petersburg, and Novosibirsk hold pockets of science that should be sustained.

"Fantastic groups are slowly disintegrating," he says, and midlevel personnel are deserting labs to flee to the United States, Israel, and Europe.

To help slow the exodus, the new foundation has already received \$100,000 in startup funds from the Soros Foundation, plus \$50,000 to be distributed as emergency salary supplements to Russians involved in collaborative research projects funded by the Na-

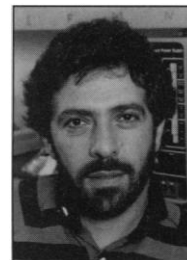
tional Science Foundation and the National Institutes of Health. The foundation, which has signed on an advisory board that includes Nobel laureates David Baltimore and Joshua Lederberg, is now approaching both public and private sources for additional money, hoping to raise \$1 million a year.

But sustaining Russian biomedical research will take more than money, Goldfarb explains. "There is no culture of grant management in Russia," he says—no bank accounts and no system for purchasing equipment, allocating resources, or monitoring grants. All that will be done by the public health institute, with the Institute of Molecular Genetics handling the Moscow end of the operation.

Adding to the challenge, says Goldfarb, is the corruption in Russia—including "widespread use of government facilities to create private enterprise." Money that goes to science administrators, for example, sometimes ends up being used to start biotech companies. Goldfarb says the foundation will minimize that risk by delivering supplies directly to researchers, bypassing science management bureaucracies.

Even peer review wouldn't work in Russia, says Goldfarb, because of competing cliques around major research institutes. "There is no concept of conflict of interest," he says. The foundation is now in the process of setting up its own peer-review network, which won't include any Russians.

Goldfarb says the foundation has received preliminary applications from two dozen Russian scientists in Moscow. And for researchers who have already fled, he plans a special incentive: Proposals will be solicited from some who say they would return home if they could get research money.



Alexander Goldfarb