U.S.–India Science Accords Renewed

Scientific exchange agreements have become common currency in international diplomacy—something tangible to be signed whenever heads of state get together. Thus, little attention was paid when the U.S.–India Science and Technology Initiative was launched 3 years ago during Prime Minister Indira Gandhi's visit to Washington. But the initiative, which was renewed on 12 June during the visit of her son and successor, Rajiv Gandhi, has proved to be different from the usual run-of-the-mill agreement.

For one thing, it is now receiving substantial sums of money—$6.2 million from the U.S. side in the current fiscal year alone, and a further $1 million from foreign currencies held by the Indian government. For another, it has been getting high-level attention from the White House Office of Science and Technology Policy.

According to a breakdown supplied by the White House, a total of $2.75 million is being spent this year on three health programs—research on reproductive biology, infectious diseases, and links between nutrition and blindness.

Some $2.25 million is being spent on research into monsoons, with emphasis on understanding their causes and improving short-term predictions.

And another $2 million is being devoted to agricultural research, focusing on nitrogen fixation, biomass fuels, and more efficient use of fertilizers.

About to get under way is a fourth area of activity concerned with solid-state physics, particularly photovoltaic energy.

All four areas of cooperation were selected on the basis of a study by a joint committee consisting of scientists from both countries, and one reason why the initiative is moving along at a fast clip is that the projects tend to be both scientifically interesting and of benefit to both countries.

Renewal of the science and technology initiative was not the only science-related happening during Rajiv Gandhi's visit to the United States. Two additional joint projects were launched, one on vaccine production, and the second a U.S. Agency for International Development–sponsored project on research and technology policy.

Gandhi was also given a briefing at the National Academy of Sciences by four scientists from U.S. industry. Howard Schneiderman, of Monsanto Corporation, described in glowing terms the potential benefits from biotechnology. Next came Ian Ross, president of AT&T Bell Labs, who described advances in microelectronics and computer science, noting that it would cost $100 million to set up a state of the art microelectronics facility. Donald Klass of the Institute of Gas Technology then described research on biomass fuels.

Finally, Joseph Engelberger of Westinghouse Corporation demonstrated a robot that performs brain surgery. The instrument, which uses data from a CAT scan to locate a brain tumor and select the best route to drill into it, performed an operation on a dummy skull while Gandhi watched with some bemusement. In later remarks, Gandhi noted that not all Western technologies can "find a slot in our country."—**COLIN NORMAN**

Plans for Big Science Facilities Scrutinized

The National Academy of Sciences is scheduled to meet in September to consider conducting a study on the international sponsorship of future big science facilities. Heading the effort is Frederick Seitz, past president of the Academy and president emeritus of Rockefeller University, and Ralph E. Gomory, senior vice president for research at IBM.

The scope of the review would include not only high energy physics and astronomy, but also specialized engineering facilities such as very large wind tunnels and neutron-scattering synchrotrons. The 12-member panel will examine the advantages and disadvantages of international collaboration, says William Spindel, staff director for the Academy's Board on Chemical Sciences and Technology.

Meanwhile, Representative Don Fuqua (D–Fla.), chairman of the House Committee on Science and Technology, has asked the Library of Congress to inventory all major science research facilities constructed since 1920. For purposes of comparison, the costs of all these projects will be shown in 1984 dollars.

And on yet another front, the Office of Science and Technology Policy, the National Academy of Engineering, the National Academy of Sciences, and the National Science Board are sponsoring a conference on 22–23 July to look at funding new research facilities at the university level. The purpose is to try to outline strategies for financing new laboratories and equipment with state, federal, and private financing. The event is being coordinated by the academies' Government-University-Industry–Research Roundtable.

—**MARK CRAWFORD**

Cyclamate's Safety Still Unresolved

A National Academy of Sciences committee has concluded that cyclamate by itself does not cause cancer, but raised two other concerns that leave the issue of its safety as unresolved as ever.

In a report released last week,* the committee introduced a new concern, stating there is "suggestive evidence" from laboratory studies that the artificial sweetener could be a tumor promoter or a co-carcinogen. It also said that, based on human data, a mixture of cyclamate and saccharin "may be associated with a small increase in risk of bladder cancer." This mixture is the way cyclamate would be marketed if approved.

In addition, the committee noted a long-standing concern that animal studies have linked cyclamate's major metabolite cyclohexylamine with testicular atrophy. The committee recommended that these data "would need to be considered in detail" before cyclamate were approved for broad use, but the study did not address this issue any further because it was beyond its charge.

The Food and Drug Administration (FDA), which commissioned the study, has been struggling over the approval of cyclamate for more than a

*"Evaluation of Cyclamate for Carcinogenicity," National Academy Press, 1985.

decade. The sweetener was first marketed in 1949, but eventually was banned in 1970 after animal studies suggested it caused cancer. Many countries followed suit. Since then, cyclamate manufacturer Abbott Laboratories has sought to overturn the FDA decision. Cyclamate has a potentially vast market because it is 30 times sweeter than sugar and is cheaper than aspartame, which is making fast inroads in the artificial sweetener market.

The Academy's finding that cyclamate alone does not cause cancer conforms with the conclusions previously drawn by the National Cancer Institute and a committee of FDA scientists. But the study says that the potential cancer-causing effect of cyclamate in combination with other substances "has received relatively little study," and should be evaluated more fully. Two rodent studies showed a higher rate of bladder cancer when cyclamate was tested in conjunction with cholesterol and also methyl nitrosourea, which itself causes bladder cancer.

The study also says that cyclamate has not been tested sufficiently to determine whether it causes gene mutations. There have been "no assays" to test cyclamate or cyclohexylamine and its effects on mammalian DNA, and these "should be done," the study says.

The FDA to date has concentrated most of its attention on the cancer question and has yet to conduct an in-depth review of potential reproductive problems that may be linked to the sweetener. However, several years ago the Canadian government restricted cyclamate's use mainly because of the animal data suggesting that cyclohexylamine caused testicular atrophy. (The Canadians concluded that cyclamate was not a carcinogen.) The Canadian counterpart to FDA is currently evaluating whether the cyclohexylamine studies in animals are relevant to humans because some data suggest that compound is metabolized differently in humans. The Canadian report may be finished this winter, according to Diane Kirpatrick, acting director of the Canadian bureau of chemical safety in Ottawa.

According to FDA spokesman Jim Greene, the agency will consider the additional points raised by the Academy even though the agency's concern about cancer has been addressed. "An FDA decision ultimately will not rest on whether cyclamate causes cancer," the spokesman said. Greene said that no more studies are needed to determine reproductive toxicity, and that the available data just need to be reviewed. Abbott Laboratories is sponsoring mutagenicity studies at Oak Ridge National Laboratories and the findings are expected to be submitted to FDA in November.

Abbott is encouraged by the Academy study, spokesman Charles Weber said, and believes that headway has been made. He says the company is optimistic that cyclamates will eventually be approved again. But federal law puts the burden on the manufacturer to prove its product is safe. Given the Academy review and recommendations, the evaluation of cyclamate's safety will go on a good deal longer.—**MARJORIE SUN**

Comings and Goings

The National Science Board will take on three new members. The White House announced that it will nominate **Perry Adkisson**, deputy chancellor of Texas A&M University and an entomologist; **Thomas Day**, president of San Diego State University and a physicist; and **James Duderstadt**, dean of the University of Michigan's School of Engineering. The nominations are subject to Senate confirmation, which is expected. The 24-member board still has three vacancies.

The Food and Drug Administration (FDA) has a new deputy commissioner, **John Norris**. Norris has worked closely with FDA chief Frank Young and is a Boston attorney specializing in health policy. He was a consultant to Young for several years when Young was dean of the University of Rochester medical school and has been an adviser to Young since he became commissioner last year. He succeeds Mark Novitch, a longtime veteran of the agency, who joined the Upjohn Company this spring.

John Gibbons has been reappointed for another 6-year term as director of the Office of Technology Assessment. Gibbons is a physicist and a specialist in energy and environmental issues.—**MARJORIE SUN**

Gore Seeks to Resurrect Bioethics Commission

After being thwarted by a presidential veto of the National Institutes of Health authorization bill last year, Senator Albert Gore, Jr. (D–Tenn.), is reintroducing legislation to establish a national commission on biological research practices and ethics.

The proposed commission replaces the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, which was created in the 95th Congress by President Carter. The Reagan Administration chose to let the body expire in 1982.

The National Commission on Bioethics' first task would be to report to Congress on the implications of human applications of genetic engineering. "Unless we begin now to search for solutions to the serious ethical dilemmas that modern science is creating, events will simply overtake us," says Gore, noting that the first authorized human gene experiments may be conducted within a year.

A "Congressional Board on Bioethics" would appoint a total of 15 members to the commission—four with biomedical or behavorial research backgrounds; three involved in health care and/or medicine; six from disciplines such as ethics, law, and theology; and two representatives drawn from the general public.

The bioethics commission would be independent of all federal agencies, although it would report to Congress periodically. Studies would be initiated on the basis of commission orders, or requests by the President or Congress. Federal agencies, however, would not be compelled to implement the commission's recommendations.

Gore, the former chairman of the House Science and Technology Committee's subcommittee on oversight and investigations, in 1984 came close to getting such a commission established. Gore's House bill (H.R. 2788), which was attached to the NIH authorization bill, received strong bipartisan support in both houses of Congress. And, although the freshman senator has no cosponsors as yet, he is confident the legislation will again receive broad bipartisan support.—**MARK CRAWFORD**