U.K. Announces Details of National Space Agency

The British government last week announced details of a National Space Agency to coordinate the nation's $150 million a year spending on space research, currently distributed between the Department of Trade and Industry, the Science and Engineering Research Council, and the Ministry of Defense.

The new agency is intended to act as an effective base for an anticipated growth of 50 percent in Britain's space research efforts over the next few years.

In particular, it will provide a single focal point both for Britain's involvement with the European Space Agency (ESA)—through which almost 80 percent of the British space budget is currently spent—and for its participation in broader international projects. In particular these include the polar orbiter, which Britain is offering to contribute to the space platform currently under development by the U.S. National Aeronautics and Space Administration.

The first director of the agency will be Roy Gibson, who was also the first director-general of ESA from its creation in 1974 until 1980. Gibson has recently been closely involved in negotiations with NASA over the terms of European participation in the space station.

In announcing plans for the new agency, Geoffrey Pattie, the Minister for Information Technology, said that it represented "a clear recognition in government circles of space as a leading-edge technology generator," as well as a "very exciting area for Britain to be involved in."

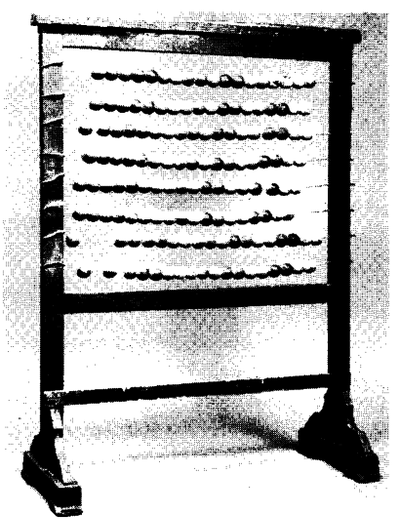
The creation of the agency was welcomed last week by William Mitchell, the new chairman of the research council which has been arguing for such a step for a long time. There has recently been mounting criticism of the impact which the council's growing commitment to the support of space research facilities has imposed on research spending in other disciplines.

Similarly John Bowman, secretary of the Natural Environment Research Council which is heavily engaged in, the interpretation of data obtained from remote sensing satellites—but has been reluctant to accept a high degree of responsibility for the satellites themselves—said he was pleased to see Pattie promise "a better balance between technology 'push' and user 'pull'."—**DAVID DICKSON**

Smithsonian to Feature Information Revolution

In his first major initiative since becoming secretary of the Smithsonian Institution, Robert McCormick Adams has announced plans for a $4.3-million exhibit on "the information revolution," which he characterized as "one of the most expensive and most thoroughly researched" that any museum has undertaken.

The Smithsonian claims the largest collection of computing and communications artifacts in the world, ranging from the first letter sent by Pony Express to an array of early computers.



Pioneer PC

Frame used to teach math to Americans in the 18th and 19th centuries.

The exhibit, to be housed in a remodeled section of the National Museum of American History, will be at the cutting edge of museum display technology, with interactive machines taking the place of labels so visitors can ask as many questions as they want. Adams also said at a press conference that the exhibit will go beyond explaining things to exploring the impact on "every aspect of our lives" of the communications revolution, which he compared in significance to the Industrial Revolution.

Adams hopes to get most of the new money for the exhibit from the computer and communications industries. Help is being supplied by Representative Norman Y. Mineta (D–Calif.), member of the institution's Board of Regents, who represents Silicon Valley.

The exhibit will open in 1989. Ultimately, the Smithsonian wants to devote a whole museum to the communications revolution.

—**CONSTANCE HOLDEN**

USDA Bows to Rifkin Call for Review of Seed Bank

In the wake of a complaint filed in the U.S. District Court for the District of Columbia, the Department of Agriculture's Agricultural Research Service is examining the way it operates and maintains its seed-bank system centered at Fort Collins, Colorado. Jeremy Rifkin of the Foundation on Economic Trends charges that the improper storage and inventorying of seeds is reducing the genetic diversity of plant species in the bank.

Orville Bentley, assistant secretary for science and education, noting that the department has been conducting its own review of the germ plasm program since last spring, on 18 November notified Rifkin that the ARS would conduct a formal environmental assessment. This is the first time the department has recognized that the seed program is subject to provisions of the National Environmental Policy Act.

Rifkin sees this action as the forerunner to a more detailed environmental impact statement aimed at assessing the possible damage to the environment stemming from the loss of rare seed varieties in the germ plasm program. Because most of the collection remains inadequately described, Rifkin asserts that the bank's resources cannot be fully exploited. He adds that the ARS's seed bank samples are incomplete, because it tends to focus on commercially valuable strains rather than on other plant varieties.

"There is no real physical loss of

seed," says Edward B. Knipling, associate deputy administrator for ARS. Some 200,000 seed varieties are stored at Fort Collins, with another 100,000 stored at other facilities around the country. Virtually all of them are identified in some manner, he notes. "The problem is that we are not taking full advantage of what we have. We are losing germ plasm that has not been captured and preserved as the environment is being destroyed," observes Knipling.

The primary cause of the seed bank's problems is a low budget, which now stands at $14.5 million annually. "We just have not had the resources, manpower, and even science tools to grow them out," says Knipling. He estimates that the department needs an annual budget of $50 million—and a one-time capital infusion of $50 million for new equipment—to put the seed bank in order. But with looming budget deficit pressures, he says, ARS is not expecting its budget to rise dramatically.

"When they say they don't have the money," notes Rifkin, "it is just a matter of priorities—and this has got to be a priority." He notes that the department has been aware of problems at the seed bank for years—at least since 1981 when the General Accounting Office conducted a review. Since then the department has conducted several other internal reviews, Rifkin adds.

While the complaint brought by the foundation and an alliance of other national and international farm interests on 4 November focuses on ARS's management failures at the seed bank, the ramifications of this legal action could be much broader. Rifkin sees the issue as a springboard for dealing with the question of who should control these genetic resources. Rifkin favors the establishment of localized seed banks in countries where various seed varieties originate.

The aim is to make it easier for Third World countries to access and maintain stocks of native and bred seed varieties. So far about 100 Third World countries have endorsed the idea, which was slated to be taken up in late November at the United Nation's Food and Agricultural Organization conference in Rome. To set up such a system an estimated $100 million is needed.—**Mark Crawford**

Education: Beginnings of Japan–U.S. Cooperation

While the United States is looking to Japan for lessons in industrial productivity, both countries are seeking new solutions when it comes to precollege science education.

So far, there has been little in the way of joint Japanese-American educational activities other than research. But in November the National Science Teachers Association convened a meeting, believed to be the first of its kind, where educators from the two nations discussed such matters as teacher training, curriculum development, and computerized instruction.

In some respects, the problems are quite different. In Japan, for example, computerized instruction is virtually nonexistent, in large part because teachers are wedded to their old ways and tend to regard computer games and simulations as "not serious lessons," according to one speaker. Also, observed meeting chairman James Gallagher of Michigan State University, "We put computers in schools and then figure out what to do with them. The Japanese want to figure it out first."

But despite their radically different cultures, the two countries have in common the need to revamp tradition-bound education systems to facilitate and sustain their evolution into the world's leading high-tech societies. "They are in a position to teach each other strategies of change," said Gallagher. Among common challenges mentioned at the meeting were the need for courses on science and society, better teacher training in the sciences, and additional attention to the gifted and to reading skills for the less able. Various measures were proposed to implement communication and information exchange, including a new center for collaborative research, if a foundation could be induced to fund it.

Another sign of increased mutual interest in education are two cooperative studies, launched a year ago, being conducted by the National Institute of Education and the Japanese Ministry of Education, Science, and Culture. Each country is conducting a detailed survey of the other's education systems, which in the American case includes a study of Japanese industrial training programs. The first reports are due the fall of 1986.

Meanwhile, the Japanese are forging additional links through the establishment of industry-funded foundations in this country. The Sony Foundation for Science Education, which is running teacher exchanges, 2 years ago set up a branch in Los Angeles. The Matsushita Electric Corp. last year provided $10 million for an educational foundation to be located in Secaucus, New Jersey; and last month saw the establishment of the Hitachi Foundation, which will put about $1 million next year into such activities as a literacy program in the Southeast and a joint study on the impact of new technology.

—**Constance Holden**

Senate Okays Nuclear Trade Pact with China

The Senate by voice vote on 22 November approved the proposed "Agreement for Nuclear Cooperation" with the Peoples Republic Of China. The trade package, which has been portrayed as vital to the interests of American nuclear technology companies, was passed as amended 2 weeks ago by Senator Alan Cranston (D–Calif.). Under the provision, China must submit further written assurances to the President that U.S. technology will not be transferred to third parties for weapons purposes.

As originally proposed, critics argued that the trade pact did not contain sufficiently strong nuclear safeguard language. Senator John Glenn (D–Ohio), says the pact sets a precedent that makes it difficult to impose tougher restrictions on nonnuclear nations in the future. Glenn declined to put forth a stronger amendment on the floor when the measure came to a vote, fearing that extended debate might delay a vote beyond 11 December and void the Cranston amendment. The agreement automatically would take effect then as originally crafted in the absence of Senate action. Glenn regards the Cranston provision as inadequate and administration officials say it is harmless. House approval of the trade agreement is expected soon.—**Mark Crawford**