

Additional pressure for bilateral U.S.-Soviet talks has come from conference members such as Ethiopia and Bulgaria. Charles Floweree, the former chief U.S. negotiator in the bilateral talks, also recommends their immediate resumption, noting that "the sine qua non for progress on multilateral treaties in the field . . . is prior agreement by the United States and the Soviet Union on its major provisions." Similarly, retired Rear Admiral Tom Davies, a former assistant director of the Arms Control and Disarmament Agency (ACDA) responsible for chemical weapons, says that "for any important treaty, there has to be a bilateral agreement" first.

But a senior Reagan Administration arms control official says that none of his colleagues favor the resumption of such talks at present. "As the Iraqis have proved, a lot of folks have the ability to produce chemical weapons," the official says. "These talks are best conducted in a multilateral context." Insiders say that the Administration's willingness to prepare a draft treaty is itself a significant step forward. Pentagon officials such as Richard Perle, the assistant secretary of defense for international security, had flatly opposed it. But Perle lost out in a fight with Ted Gold, who runs the Pentagon chemical weapons program, as well as Secretary of State George Shultz and ACDA director Kenneth Adelman, all of whom favored the idea.

Experts who follow the negotiations closely make varying predictions about the prospects for success. Meselson is encouraged by a series of recent Soviet concessions in the multilateral talks, including an agreement to provide detailed information about current stockpiles and an agreement to allow continuous on-site inspection of stockpile destruction. "This is the only area of arms control in which there has been real progress under the Reagan Administration," he says.

Julian Perry Robinson, an authority on chemical weapons who teaches at Sussex University in England, is more cautious. "There is no way the details of verification will be agreed upon this year," he says. "There could only be an agreement to defer agreement on the sticking points. And then at the very least it will be 4 to 5 years before a treaty could be ratified." A House Foreign Affairs committee aide predicts that "the dispute will not be resolved by technical features, but by a willingness to accept a certain amount of risk. There will always be a latent chemical weapons production capability, and until both sides exhibit a bit more flexibility, any agreement is unlikely."—**R. JEFFREY SMITH**

Cohen-Boyer Patent to Be Issued Soon

An important genetic engineering patent application, which has been under dispute for 4 years, is expected to be issued by the U.S. Patent and Trademark Office in a month or so.

The patent claim covers a particular hybrid plasmid, a basic gene-splicing product used to transfer genes from one cell to another, and was filed in 1978 by Stanley Cohen of Stanford and Herbert Boyer of the University of California.

Its approval is crucial to the strength of another patent issued to the two researchers in 1980. That patent, which covers the process of making proteins with the hybrid plasmid, has already generated about \$2.7 million in licensing fees for the universities.

The application, according to informed sources, has been approved by patent examiner Alvin Tanenholtz and only needs the official stamp of approval by another part of the patent office. A patent, however, is not formally issued until it is printed, which, in this case, may not take place until May or June.

The new patent has had a long and controversial history. It was one of the first patent applications related to gene splicing to be filed and has been regarded as a test case by many in the biotechnology community.

In August 1982, the patent claim hit several snags. The patent office issued a preliminary rejection of the application, raising mainly two issues: whether the information in the claim allowed others to duplicate the same product, and whether a former collaborator, now a professor at the University of Michigan, should have been included as a coinventor.

The question of inventorship has apparently been resolved. The professor, Robert Helling, indicated in a recent interview that he now believes his work "was not germane" to the new patent. But it is not yet clear what specific claims the patent office has allowed. For the past 3 months, officials from both universities have said that in general they were satisfied with the progress of the patent application.

The Cohen-Boyer patent is also un-

usual because Stanford and the University of California initially allowed public disclosure of the documents concerning the deliberations between its attorneys and the patent office. Such deliberations are usually not divulged until after a patent has actually been issued. In 1982, however, after the patent office disputed some of the claims, the universities reversed their position and closed the file from public view. It will be automatically reopened when the patent is issued and should provide some interesting reading about how the issues formerly under dispute were resolved.

—**MARJORIE SUN**

First Commercial Product from Space

The first commercial product manufactured in space will soon be formally transferred from the National Aeronautics and Space Administration to the National Bureau of Standards (NBS), which will sell it to the public. The product is about 15 grams of 10-micrometer polystyrene spheres that were produced on the STS-6 mission. The spheres will be used for calibration of microscopes, laser light scattering equipment, and particle sizing equipment. The spheres also have many potential uses in biomedical sciences, particularly for sizing of pores and membranes.

The polystyrene spheres fit the two key criteria for space manufacturing—they cannot be made on the earth and they are very expensive. Uniform spheres about 3 micrometers in diameter can be readily made on earth, but larger ones tend to settle to the bottom of the reaction vessel where they stick together and become distorted in shape. In the microgravity of space, the spheres are kept separated by a gentle motion of the solvent and the standard deviation in size is less than 1.5 percent. NBS will divide the 15 grams of spheres into 1000 samples, each of which will sell for about \$350; the value of the spheres is thus about \$23,000 per gram.

The Marshall Space Flight Center, which perfected the process for manufacturing the spheres, also has about 35 grams of 30-micrometer spheres,

worth about \$500,000, that are expected to be handed over to NBS in a separate transaction. NBS has also ordered some 100-micrometer spheres that will be produced on future flights.

—**THOMAS H. MAUGH II**

Translating Japanese Technology into U.S. Terms

The transfer of technology and scientific information between Japan and the United States has been a lopsided transaction. Japan is famous for adopting American technology and selling it back in the form of products that have often swept U.S. markets. The failure of American industry to reciprocate by tapping the increasing store of Japanese technology and research results recently prompted the House Science and Technology Committee to insert a \$750,000 item in the National Bureau of Standards authorization bill to fund activities to increase the availability of Japanese science and engineering literature to U.S. scientists and engineers.

The amendment resulted from recent hearings, organized by Science subcommittee chairman Representative Doug Walgren (D-Pa.). Several of those giving testimony ascribed U.S. lack of initiative in garnering Japanese ideas and inventions from the technical literature to the ingrained American habit of being No. 1 as a source of science and technology. The special problems of monitoring Japanese science and technology, however, were summarized succinctly by D. Eleanor Westney, acting director of the MIT-Japan Science and Technology Program. A critical issue is language. Few Americans are proficient in Japanese and fewer still "are also experts in a scientific or technical field, able to assess the significance of what they read."

A second major issue is "the imbalance between Japan and the United States for technical scanning." Practically since Commodore Perry landed, the Japanese have cultivated the skills of learning about Western science and technology. As several of the witnesses noted, representatives of U.S. companies in Japan are much less adept at technical scanning than

their Japanese counterparts in the United States.

Another difficulty for Americans, said Westney, is that "Japanese scientific and technical information is less systematized and readily accessible than is the case in the United States." There are fewer refereed journals with national drawing power and Japanese scientists and engineers depend heavily on informal contacts to learn of new developments. Americans have difficulty in gaining access to these networks.

The amendment would revive a modest initiative for the scanning and translation of foreign technical literature launched when there was serious concern about the unavailability of Russian technical literature in the United States. Both the concern and funding dwindled over the years.

The new program is aimed at increasing the accessibility of the Japanese literature through "monitoring, screening, translation, abstracting, indexing, dissemination, awareness and marketing" and is to be administered by the Commerce Department's National Technical Information Service. Otherwise untouched are the linguistic shortfall and the other deficiencies that contribute to U.S. technological myopia.—**JOHN WALSH**

New Director Named for Kitt Peak

Sidney C. Wolff, acting director of the University of Hawaii's Institute for Astronomy, president-elect of the Astronomical Society of the Pacific, and a councilor of the American Astronomical Society, has been named as the new director of Kitt Peak National Observatory; she thus becomes the first woman to head a major astronomical observatory in the United States.

By coincidence—she was picked by an independent search committee—Wolff will once again be working for her previous boss, John T. Jefferies. Jefferies was the founding director of Hawaii's Institute for Astronomy (*Science*, 27 November 1981, p. 1010) and served in that position until he left last year to head the National Optical Astronomy Observatories, a new or-

ganization of which Kitt Peak is a part.

Wolff plans to arrive at Kitt Peak's Tucson, Arizona, headquarters in early September. The current director, Geoffrey Burbidge, will remain at Kitt Peak as a member of the staff.

—**M. MITCHELL WALDROP**

Illmensee Faces Funding Cutoff

The Swiss national science foundation has withdrawn its financial support for Karl Illmensee, the University of Geneva embryologist who was accused last year of manipulating his experimental protocols. The foundation's action was taken largely on the basis of a report by an international commission of inquiry that found no compelling evidence that Illmensee committed fraud, but discovered so many "corrections, errors and discrepancies" in his records that it deemed the series of experiments in question "scientifically worthless" (*Science*, 2 March, p. 913).

The U.S. National Institutes of Health (NIH) is also considering whether or not to resume funding Illmensee's work. Illmensee's NIH grant was up for renewal last year, but the allegations arose before a decision was made and the application was put on hold. The commission of inquiry looked into Illmensee's application for renewal of his grant and found inconsistencies in the reporting of his data that "raised the possibility that the original NIH application contains an element of invention." NIH officials are studying the commission's report and are expected to come to a decision on Illmensee's grant in the next few weeks.

Loss of financial support could make it difficult for Illmensee to carry out the commission's recommendation that he repeat the challenged experiments. It urged that they be repeated "as soon as possible as a collaborative project with full scientific rigor." The commission also noted that an earlier set of experiments, conducted by Illmensee in collaboration with Peter Hoppe of the Jackson Laboratory, has not yet been verified and urged that they be repeated as well.—**COLIN NORMAN**