China, United States Set Science Policy Dialogue

Meeting scheduled to discuss science and technology issues as Chinese seek policies to produce rapid results

Scientific cooperation between China and the United States, which has proceeded with a cautious buildup of education exchanges and joint research projects over the past decade, is being extended to include discussions of science and technology policy. Agreement that a series of bilateral conferences on the subject was desirable was reached when a group of American science policy experts* visited China last January. The first meeting is scheduled for next January in the United States.

In a report on the trip in which he drew on the observations of all members of the group, Library of Congress China specialist Leo A. Orleans cautions that "there continue to be large and important gaps in our knowledge about China's S & T [science and technology]." The most important reason for this, says Orleans, is that "because of recurring political permutations, China's goals and institutions have been in an almost perpetual state of flux. Consequently, the Chinese themselves are often unable to describe the current specific situation or exhibit caution in doing so."

Orleans observes, as have others, that the most powerful conditioning factor on science and technology remains the so-called Cultural Revolution. The decade-long upheaval, lasting roughly from 1966 to 1976, resulted in the denigration of science and education and the dispersal of scientists and engineers. The process of rebuilding the country's scientific and educational institutions remains a central preoccupation.

A professional China watcher since well before the Cultural Revolution, Orleans has had a special interest in Chinese education and manpower training; some of the most interesting observations in his paper are on those topics. He says that in the first phase of rebuilding between 1977 and 1980 the number of college graduates totaled 591,000. Some 196,000 of these were engineers, 159,000 teachers, and 93,000 were trained in medicine and pharmacy. Undergraduate enrollment for 1981–1982 is put at 1.3 million, with 400,000 in engineering. Constancy in Chinese priorities is indicated by the fact that, despite the ups and downs of policy, the proportion of engineering students has remained at about one-third of the total for the past 30 years, while science students have averaged 6 or 7 percent. The U.S. visitors were told, however, that the numbers of students being trained in law, finance, economics, and other social sciences were too low and would be increased.

Higher education in China obviously enrolls a small percentage of the eligible age group. As Orleans describes it, "Only four percent of the middle school graduates get into college, and the Chinese admit that to pass the entrance

*Study group members were Eugene B. Skolnikoff, Massachusetts Institute of Technology, chairman; Richard C. Atkinson, University of California, San Diego; Harvey Brooks, Harvard; Leo A. Orleans, Library of Congress; Richard P. Suttmeier, Hamilton College.

Southern Biotech Goes Bankrupt

After failing to persuade investors to put up any more money, Southern Biotech filed for bankruptcy on 28 May, thereby becoming the first major failure in the crowded race to commercialize biotechnology. The Tampa-based company, which went public just last August with a stock offering of $5.5 million, has been in financial and legal difficulties for some time (*Science*, 4 June, pp. 1076–1082).

Southern Biotech's bankruptcy petition, which was filed in Florida, lists 128 creditors and liabilities amounting to almost $2 million. The company claims to have assets of $3.4 million, most of which is believed to be its stockpile of leukocyte (or alpha) interferon produced from white blood cells. With the recent production by other companies of highly pure interferon from genetically modified bacteria, the market value of Southern Biotech's natural, less-refined product is open to question, however.

In spite of Southern Biotech's near terminal financial condition, the company's directors are still hoping that it will someday rise from the ashes. They have filed under chapter 11 of the bankruptcy law, which means that they are seeking approval of a plan to hold off paying creditors while the company is reorganized. Southern Biotech started life 5 years ago as a company that bought blood from prisoners and sold the plasma to a pharmaceutical company. That part of the firm's operation currently is still profitable and it would form the nucleus of any reorganization. In addition, company officials are still hoping to find a market for the stockpile of interferon. These plans require court approval.

Southern Biotech officials cited two principal reasons for the company's failure: the inability to sell interferon, and the collapse of a plan to launch a joint venture with a major chemical corporation. The latter is a reference to prolonged negotiations with Monsanto to establish a plasma separation facility. Monsanto abruptly broke off talks in mid-March.

Among those owed money by Southern Biotech are the company's scientists and other employees who were informed on 30 April that there was no cash left to pay their salaries. They were given a promissory note due on 31 May, but there was no money to pay that either. John M. Kilgore, Southern Biotech's founder and president, told the employees in a letter dated 28 May that they have two options: they can be paid in company stock if legal approval can be obtained for such a transaction, or they can join the long line of creditors. Most of them are expected to take the second option. Other creditors include the Internal Revenue Service, which is owed $150,000, and Key Energy Enterprises, which is owed almost $1 million. Key Energy, a Tampa holding company, put up about $2 million to launch a joint venture with Southern Biotech to produce interferon, but Southern Biotech bought its partner out soon after the company went public and some $890,000 is still owed from that deal.—COLIN NORMAN

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