Science and Technology at State: Recognizing the Problem

Every Secretary of State since the 1950's has espoused the proposition that science and technology are increasingly important factors in foreign relations and that U.S. diplomacy, therefore, must have a sound technical base. The State Department, however, has been notably resistant to putting into practice what its secretaries preached.

The subject of science and technology in foreign affairs currently seems to be finding a place in the spotlight, as it periodically does. Problems with a high technical content—nuclear proliferation, the energy crisis, technology transfer to less developed countries—have assumed major proportions in foreign relations. In the final year of the Ford Administration, a report by T. Keith Glennan entitled "Technology and Foreign Affairs" apparently captured the interest of officials in the upper echelons of the department. And the Carter Administration's appointments of nonscientists to the main State Department policy level posts dealing with science and technology, which were not greeted with enthusiasm in the scientific community, have attracted attention to the matter.

The appointments were those of Patsy T. Mink to be Assistant Secretary of State for Oceans and Environmental and Scientific Affairs (OES) and Lucy Wilson Benson to be Under Secretary of State for Security Assistance, Science and Technology. OES is the latest incarnation of a scientific affairs office in State; OES fits into Benson's area of responsibility on the department's organization chart.

Mink is a former Democratic congresswoman from Hawaii who lost in the Senate primary in her state last year. In Congress she was a member of the Edu-

Christopher Fordham Named Assistant Secretary for Health

After what looked at times like a futile search, Health, Education, and Welfare (HEW) Secretary Joseph A. Califano, Jr., has found someone who is willing to be the assistant secretary for health. He is Christopher C. Fordham III, dean of the University of North Carolina School of Medicine at Chapel Hill. Fordham, 50, is a graduate of the Harvard Medical School. He first joined the UNC medical school in 1954 and remained there until 1969, when he went to the Medical College of Georgia as vice president. Two years later, he returned to North Carolina as dean. Fordham has been active for years in the Association of American Medical Colleges where he is regarded as a man of "impeccable personal and professional standards." He comes to Washington with experience in medical politics and in dealing with the state legislature but the ins and outs of the HEW bureaucracy and congressional health subcommittees will be new to him.

From all apparent indications, the assistant secretaryship under Califano will be a different, and possibly lesser, position than it was during the past couple of years when the post was occupied by Theodore Cooper, who was dismissed despite his wide popularity with his constituents. Throughout the Nixon and Ford years, efforts to make the assistant secretary for health the principal authority in that area in HEW were relatively successful, so that by the time Cooper came to the job, the heads of major agencies, such as the National Institutes of Health (NIH) and the Food and Drug Administration (FDA), were responsible directly to him. Right from the start Califano has indicated that is not the way he intends to do business. Although the assistant secretary will still be in charge of HEW's health agencies, Califano has made it clear to NIH director Donald S. Fredrickson and FDA commissioner Donald Kennedy that, in theory at least, he will be personally accessible to them on a regular basis. If that is the case, the assistant secretary's power over all health programs certainly will be diluted.

Furthermore, Califano himself went ahead with decisions to keep Fredrickson and appoint Kennedy (*Science*, 18 February and 25 March). Some see this as a downgrading of the assistant secretary's job, inasmuch as it is usual to name the top man first so that he can have an influential voice in choosing people who will work under him. On the other hand, in view of the difficulty Califano had in getting anyone to be assistant secretary, there is much to be said for his getting on with those appointments he was able to make without tying up the bureaucracy in an unnecessary waiting game.

At least two persons, Charles Sanders, director of the Massachusetts General Hospital and former Kansas congressman William Roy, who practices medicine in Topeka, have rejected offers from HEW, and several others who were under serious consideration said they were not interested in being assistant secretary before things were far enough along for them to receive explicit job offers.

It is anticipated that the assistant secretary for health will assume reasonable responsibility for issues related to health care delivery and health manpower, while contributing to the development of national health insurance policy. In these areas, Fordham would seem to be well suited for the task. The University of North Carolina Medical School is said to have one of the country's leading programs for training physicians in primary care and family medicine. In addition, the school looks favorably on the training of nurse practitioners and physicians' assistants. Fordham's acquaintances say that he deserves a major share of the credit for this. There is no doubt that, in this regard, Fordham and Califano are on the same wavelength. In several of his public statements in his first weeks in office, the Secretary has made it plain that he would like to further the cause of primary care and the development of a cadre of health professionals who can deliver care of certain types in areas where there is no physician or in circumstances in which an M.D. is not necessarily needed.

There has as yet been no official announcement of his appointment and Fordham declines to comment on his views of the job or the role of the assistant secretary in setting national health policy.—B.J.C.

cation and Labor and Interior committees and chairman of Interior's subcommittee on mines and mining. She has demonstrated an interest in international science and technology issues and, for example, served on the U.S. delegation to the Law of the Sea Conference.

Benson, who is from Massachusetts, achieved public prominence through her work in the League of Women Voters at both the state and national levels. She was national president of the League from 1968 to 1974. In 1974 she served in Massachusetts Governor Michael Dukakis's cabinet as human services secretary but resigned in a budget dispute.

A harsh but rather widely held view in sectors of the scientific community interested in international issues is that these were "affirmative action" appointments made essentially to satisfy the demand for the naming of women and minorities in the State Department hierarchy. By this analysis, supporters of presidential candidate Jimmy Carter and members of his campaign staff who advised him on international affairs took what they regarded as key policy posts in State for themselves and their associates and then distributed posts of lesser importance to accommodate other constituencies. Such an action is by no means unusual when administrations change, but critics object that it perpetuates the attitude which has consigned science and technology to second-class status at State. Some of those in the woman's movement are not pleased with the Benson appointment because she is not a "professional," having served primarily in voluntary organizations and lacking formal administrative experience.

The coolness toward Benson and Mink seems not to be personal, but rather to be the product of the long-cherished hope in the scientific community for appointment to the top scientific post of an eminent scientist with experience in international scientific affairs. The assumption that a prominent scientist in the job could set things right for science and technology at State, however, looks like an increasingly dubious formulation. It is possible that this ideal might have been achieved in the days when the science office's primary responsibilities were to run the science attaché program and help negotiate and administer programs of scientific cooperation and exchange. But the office's functions have multiplied greatly and the emphasis has shifted in the last decade from science to technology.

In discussing whether it is necessary to have a prominent scientist heading OES, the Glennan report points out that

Peer Review Reviewed

Two detailed studies of the peer review process have assigned remarkably high merit scores to the systems operated by the National Institutes of Health and the National Science Foundation. The NIH study suggests nonetheless that an ombudsman and appeals board should be appointed for the benefit of those who believe their grant applications have been unfairly judged.

The NIH review* was prepared by an in-house committee chaired by Ruth Kirschstein, director of the National Institute of General Medical Sciences. Its basic finding is that the NIH peer review system is "extremely effective in identifying biomedical research activities of high quality."

A questionnaire sent out to all members of NIH study sections and advisory councils indicated that the peer review system is perceived by those who operate it as being substantially free of bias. Some 95 percent of respondents rated the system as good or excellent on the count of fairness and lack of bias. A similar preponderance said they had observed no bias, or insignificant amounts of it, on the basis of either race or sex.

But the questionnaire indicated a certain perception of cronyism in the review of applications, which 9 percent of respondents rated as significant or very significant, 19 percent as moderate, and 72 percent as none or insignificant. The perception was stronger among advisory council members than with those most directly involved in peer review, the study section members. The NIH committee is making a further analysis of the questionnaire to ascertain what particular aspects of cronyism the respondents citing it had in mind.

In addition to the questionnaire, the NIH committee in its year and a half study drew upon some 1500 letters of comment received from the scientific community and others, as well as upon three public hearings.

Besides the appeals board, the committee recommended that vacancies on study sections should be announced, so as to allow outsiders to suggest candidates, and that the summary statement reviews of applications should routinely be sent to the principal investigator.

The committee notes that the NIH peer review system cost $15,800,000 to operate in 1976, or about 1 percent of the $1.4 billion the NIH awarded.

Another study of peer review, of the system practiced in the National Science Foundation, has been conducted by Stephen and Jonathan Cole, sociologists of science at the State University of New York at Stony Brook and at Columbia University, respectively. The study will be published soon by the National Academy of Sciences, which commissioned it, but a preview of its conclusions was given to the House science subcommittee by NAS president Philip Handler. The Coles looked at 1200 peer review decisions made by NSF program managers in fiscal 1975 and, he reported, were unable to detect any evidence of systematic bias, such as for Ivy League reviewers to favor Ivy League applicants, or for eminent researchers to fare disproportionately better than their obscurer colleagues.

Under the "rich get richer" hypothesis, one might expect that the more eminent, productive, and prolific scientists would stand a significantly better chance of receiving an NSF grant than those at lower levels in the social stratification system of science. Surprisingly enough, the Coles' data suggest that this is not the case. "An investigator's current circumstances seem almost irrelevant to success in securing NSF funds," Handler reported.

To what extent are NSF program managers guided by the recommendations of their reviewers? Quite considerably, but not totally: only 92 percent of those whose applications that were rated highly by the reviewers received awards, and 10 percent of those who scored low were nevertheless funded, the Cole study finds.

Jonathan Cole, while concurring with Handler's summary of the report, says that before he would be willing to make a conclusive statement about the equitableness of the system, further questions need to be resolved, such as whether the peers are fairly selected by the program managers, and whether those who apply to the NSF are typical of the scientific community as a whole.—N.W.

*"Grants Peer Review, Phase 1." Three volumes. Available on request from NIH.

the assistant secretary is not expected to make scientific decisions but, ideally, should be able to exercise the traditional skills of the senior foreign service officer, the analytic skills of the scientist or engineer, and the managerial skills of the successful executive. In addition to gaining the cooperation of the scientific community and the confidence of the Secretary of State and his lieutenants, the OES head must "maneuver effectively within the Washington bureaucracy." It is important to note that most domestic federal departments these days have technical programs with international implications and the problem is to create viable relations between domestic and international programs. For this reason, says the Glennan report, the person in the top science post "must be able to assert effectively the role of the Department of State in shaping and guiding the international programs of various technological agencies without arousing antagonism in the process."

Glennan, the first head of the National Aeronautics and Space Administration and a former president of what is now Case Western Reserve University, served as a member of the Atomic Energy Commission and representative to the International Atomic Energy Agency, so he is familiar with scientific diplomacy, both international and interagency. In writing the report, Glennan consulted more than a hundred well-informed people and had the close cooperation of persons with direct experience of the subject, including Herman Pollack, a former head of the office that became OES. The report's recommendations, therefore, represent a kind of consensus for action within the international science policy community.

A main point in Glennan's diagnosis is that OES is overwhelmed with operational responsibilities. The office, for example, handles the details of many bilateral and multilateral science agreements which have been concluded over the years, and is burdened with routine duties which might be handled elsewhere.

OES suffers from the fact that, in career terms, the office is a sidetrack for foreign service officers. It is not simply that there are few career officers with scientific or engineering credentials, but that political and economic expertise is put at a premium in the recognition and reward structure of the career service.

The Glennan report urges a number of changes which would positively affect attitudes toward science and technology at State and make service in OES more attractive. Glennan does not think that sweeping changes can be made overnight, however. He says he hopes for well-conceived long-term efforts designed to make the foreign service officer corps more "technologically literate." This would require changes in selection criteria and alteration in the career ladder, and might take 15 years or more. Glennan thinks such measures can succeed, pointing to the fact that a generation ago economics was regarded with roughly the same hauteur as science and technology are now in the State Department, but emphasizes that what is essential is "a constituency for change" in the upper reaches of the department.

Immediately needed, according to the report, are a bigger budget for OES and an increase in the number of staff. The report also puts stress on the creation of a much improved planning capacity for OES. Glennan recommends both an internal planning group, which would be free of day-to-day operational demands, and the creation of links with outside institutions, perhaps groups in first-line universities, which would perform "think tank" functions for OES.

Some progress in centralizing authority over science and technology affairs in State has been made in the last decade. In 1974, OES was created by combining the former Office of Scientific and Technological Affairs with separate offices dealing with environmental, fisheries, wildlife, and population issues (*Science*, 13 September 1974). OES was elevated to bureau status and the head of the office to assistant secretary rank. A decision to search for a prominent scientist to fill the job caused a delay, and then the post was filled by Dixy Lee Ray, who became available when the Atomic Energy Commission, which she headed, was dissolved in an energy agency reorganization. Ray, a biologist and now governor of Washington State, stayed at OES about 6 months and then resigned with a blast at Secretary of State Henry Kissinger for not employing her or the office productively. Her replacement was Frederick Irving, a career foreign service officer with ambassadorial rank. Observers feel that the Ray episode was a setback for OES, but that one positive result was the commissioning of the Glennan study by then Under Secretary of State for Economic Affairs Charles W. Robinson, who subsequently moved up to the more influential post of Deputy Secretary of State. Some partisans of science and technology think that the Ford Administration went out of office just at the time top officials were preparing to act on the problems of science and technology.

How the Carter Administration will treat science and technology at State is by no means clear. Until the end of March, Mink and Benson were kept in departmental limbo because their appointments, which require Senate confirmation, were caught in the logjam of subcabinet jobs ascribed to the overloading of the FBI security clearance channels.

At her confirmation hearings late in March, Mink made a forthright case for strengthening OES, eliciting what seemed to be a sympathetic senatorial response. But what actually happens to proposals for more budget and staff is what counts. Perhaps even more significant will be the decisions on how OES is to be involved in main-line technical issues such as those which cluster around the problem of nuclear proliferation. But the key question remains that of the attitude of Secretary Cyrus Vance and his top lieutenants. If they take science and technology seriously, the department is conditioned to do the same.

—JOHN WALSH

RECENT DEATHS

Charles A. Ragan, Jr., 65; former chairman, medicine department, College of Physicians and Surgeons, Columbia University; 26 October.

William Nordberg, 46; director of applications, Goddard Space Flight Center, National Aeronautics and Space Administration; 3 October.

Lars Onsager, 72; former professor of chemistry, Center for Theoretical Studies, University of Miami; 4 October.

Leon H. Schneyer, 57; professor of physiology and biophysics, School of Medicine and School of Dentistry, University of Alabama; 23 October.

Albert Soglin, 58; professor of mathematics, Loop College, City Colleges of Chicago; 4 October.

F. Lynwood Wren, 82; professor emeritus of mathematics, California State University, Northridge; 20 October.

Erratum: At one point in the 1 April News and Comment story about the Ford-MITRE study, page 41, a printing error misstated that study's advice for revising the national breeder research program. The word *emphasize*, in line 17 of column 2, was the problem. The story should have read, "The breeder program should be restructured to *deemphasize* early commercialization and to stress a more flexible approach to basic technology."

Erratum: In "Control of influenza and poliomyelitis with killed virus vaccines" by J. Salk and D. Salk (4 March, page 834), the footnote to Table 2 should read "Total number of samples from *4866* different children." In Table 6, under year 3, type J, 99.4 and 96.0 should read *88.4* and *86.0*, respectively.

Erratum: Representative Ray Thornton (D–Ark.) was incorrectly identified as a Texas congressman on page 563 of *Science*, 11 February.