

Daddario has indicated that his subcommittee, in proceeding with hearings, is not setting out in a search for instances of mismanagement but, rather, is interested in finding out how well NSF has performed in meeting the large responsibilities imposed on it by Congress 15 years ago.

The subcommittee appears to have made a good start toward acquainting itself with agency programs, but it remains to be seen whether the members have the appetite and the ability to grapple seriously with the deep-seated policy problems which still afflict the Foundation.

NSF director Haworth himself cited a few of these problems in his own statement in the most recent annual report of the agency. He phrased them in the form of questions.

"Should the Foundation attempt to devise new or modified support programs rather than continuing to rely mainly on the project grant method?"

"How can one be sure that the relative amounts of support being provided by NSF to the various fields of science are approximately correct?"

"What changes, if any, should NSF make in its policies and procedures in response to the increasing concern over geographical concentration of Federal funds for research and development activities?"

These questions in one form or another were being asked when NSF was born, and, as Haworth points out, they are problems which NSF alone cannot solve. The experience of NSF in the last 15 years in fact indicates that these questions are likely to be hardy perennials.—JOHN WALSH

Environmental Sciences: Johnson Proposes New Agency Merging U.S. Research and Service Programs

A plan providing for the merger of two vintage science agencies of the Department of Commerce was submitted to Congress by President Johnson last month. The proposal calls for the consolidation of the Weather Bureau and the Coast and Geodetic Survey into a new agency to be known as the Environmental Science Services Administration. The agency would also include a subunit of the National Bureau of Standards, the Central Radio Propagation Laboratory at Boulder, Colorado. With these units, the President said in a message to Congress which accom-

panied the proposal, "the new Administration will . . . provide a single national focus for our efforts to describe, understand, and predict the state of the oceans, the state of the lower and upper atmosphere, and the size and shape of the earth."

The proposed reorganization appears to have grown chiefly out of a desire to begin rationalizing the government's sprawling environmental science research and service programs, and only secondarily to effect budgetary savings. "The organizational improvements," Johnson said, "will enhance our ability to develop an adequate warning system for the severe hazards of nature . . . [and] will permit us to provide better environmental information to vital segments of the Nation's economy . . ." Referring to the effect of the new agency on research, Johnson said that the integration of "a number of allied scientific disciplines" would have several beneficial effects. It will, he said, "better enable us to look at man's physical environment as a scientific whole . . . facilitate the development of programs dealing with the physical environment . . . and enhance our capability to identify and solve important long-range scientific and technological problems" in this area. As a consequence, Johnson said, "the new Administration . . . will promote a fresh sense of scientific dedication, discovery, and challenge, which are essential if we are to attract scientists and engineers of creativity and talent to Federal employment in this field." He also pointed out that economies were likely to result both from the sharing of costly equipment and facilities, such as satellites, ships, and computers, and from the "more efficient utilization of existing administrative staffs."

The reorganization move appears to have two main sources. First, in most general terms, it reflects a desire for unification of federal science activities that has been growing (particularly among nonscientists in government) for some time. These sentiments find expression in the calls for a single federal Department of Science that circulate periodically, so far without much success. More specifically, the proposal seems to reflect a rising concern in Washington over the enormous dispersal throughout the government of meteorological and related activities alone. These activities—research and service, military and civilian—involve an annual budget of around

\$431.5 million and are carried on by at least 17 separate agencies. While both the degree of agency involvement and the nature of the programs vary substantially, a fair amount of duplication has developed, sometimes through bureaucratic happenstance, sometimes because of the military agencies' felt need for complete control over their own specialized weather collection and information systems. One such case, recently cited by the Science Policy Research Division of the Library of Congress in a report to the House Committee on Government Operations, involved a dispute between the Air Force, the Federal Aviation Agency, and the Weather Bureau "with respect to," as the House report genteelly put it, "jurisdiction and operation of certain air weather services."

Not only the tangle of programs but their rate of growth has been attracting attention: from 1959 to 1965 federal expenditures for research and development in the atmospheric sciences increased by 440 percent. In this situation, governmental scrutiny inevitably became more intense. The concern was made apparent in several ways. In 1959, the Eisenhower administration established, under the Federal Council for Science and Technology, an Interdepartmental Committee for Atmospheric Sciences, to review and attempt to evaluate the patchwork governmental operations.

Later, in 1963, the Bureau of the Budget issued a special circular which attempted to establish guidelines for a more unified federal system and clarify the roles and responsibilities of the several agencies. The Budget Bureau specifically reaffirmed "the central role of the Department of Commerce with respect to basic meteorological services" and encouraged the department to develop a comprehensive federal plan and become responsible for its implementation. Accordingly, the Office of Federal Coordinator for Meteorology was established, and the post was given to Robert M. White, chief of the Weather Bureau. White was given a certain amount of authority over programs of other agencies. But his role is essentially limited to coordinating weather services and research that are of a general nature; the specialized systems of the Navy or the Coast Guard, for example, are still beyond his jurisdiction.

While a total reorganization of federal activities in environmental sci-

ences was clearly outside his responsibilities, the Budget Bureau's call for strengthening and revamping the weather operations of the Department of Commerce appears to have fitted in neatly with White's own views. In a speech in April 1964 to a joint meeting of the American Meteorological Society and the American Geophysical Union—more or less deliberately calculated as a trial balloon—White emphasized that, while in the universities “the scientific unity of the geophysical or environmental sciences” was increasingly recognized, within the government these pursuits remained widely scattered. Even in the Department of Commerce, he pointed out, “the Weather Bureau, the Coast and Geodetic Survey, and the Central Radio Propagation Laboratory . . . are all directly involved in the detailed description, analysis, and prediction of all aspects of the physical environment. They are all active in the fields of seismology, oceanography, meteorology, hydrology, aeronomy, geodesy, geomagnetism, and solar physics.” While White pointed out that there was a “logic in this dispersal of environmental scientific and technological activities,” he made plain his feeling that the logic was open to question. And he concluded his speech by calling for “widespread debate and open discussion” on the basic question: “How may we organize the environmental, scientific, and technological activities of the Federal Government so that we may have the benefits of integration—sound planning and management of programs, the best use of the science and technology dollar, an awareness of significant long-range problems, and an understanding of the relative value of the entire range of environmental scientific and technological activities—without hampering the ability of an agency to perform its primary missions and without sacrificing the ability to concentrate on immediate crucial problems that dispersal gives us?”

White's call for discussion fell on fertile ground. It was quickly taken up by the top science adviser in the Commerce Department, J. Herbert Hollomon, Assistant Secretary for Science and Technology. An intradepartmental committee was formed which included White, Rear Admiral H. Arnold Karo, director of the Coast and Geodetic Survey, and Allen V. Astin, director of the National Bureau of Standards. Assisted by outside consultants, among

them Lloyd Berkner, Roger Revelle, and Emanuel Piore, the group made a study of all the environmental science activities in the Department and was influential in formulating the proposal for the merger that was contained in the President's message.

Effect on Department

The Johnson proposal is modest in the sense that it does not grapple with environmental activities outside the Department of Commerce. Its effect within the Department, however, is likely to be considerable. Its purpose is not so much to reduce duplication—the activities of the three agencies involved are closely related but do not really overlap—as to make possible an approach that is more unified in terms of both scientific research and public services. The Weather Bureau, for example, does provide a number of specialized services to clients in agriculture, aviation, and shipping, but its central function is to collect and report weather data for the largest possible general audience; its budget in 1965 was close to \$93 million. The major function of the Coast and Geodetic Survey is the preparation of aeronautical and nautical charts, but it is also responsible for reporting information about earthquakes, seismic sea waves, and so forth, to the general public; in 1965 its activities were budgeted at around \$38 million. The Central Radio Propagation Laboratory, with a budget of \$13 million, is more specialized. It is the main government agency for research and services on the propagation of radio waves—or, as one official described it, “predicting radio weather”—but its predictions are available not only to other federal agencies for military and space programs but to anyone interested in long-range radio communications.

Thus, all three agencies are involved not only in basic research but in communicating with the public, and it is hoped that their fusion will both strengthen basic science and improve public services. One day, it is hoped, a single phone call to a local service station will be rewarded by receipt of all kinds of weather information that now must be collected separately. At the same time, it is hoped that the merger will promote a kind of cooperation between, for example, oceanographers and meteorologists which agency separatism has up till now made difficult.

In addition to its effect on research

and services, the Environmental Science Services Administration is likely to have a certain bureaucratic impact. When all the parts are assembled, the new agency will have approximately 10,000 employees (more than the Department of Labor) and will constitute about a third of the operations of the Commerce Department. Also, though details are vague, it appears to be the plan for the merger to result in a universal upgrading of everyone connected with the present enterprises. Certain key jobs, such as those of chief of the Weather Bureau and director of the Coast and Geodetic Survey, are to be abolished, with one administrator and one deputy administrator supervising the newly combined operation. But while there may be some jockeying for position as the functional integration progresses and the old agencies relinquish their separate identities—a process that is expected to be gradual—there seems to be room enough for everyone and little likelihood that jobs or status will be threatened.

The relative painlessness of the proposed transformation seems to account for the total absence of opposition the reorganization plan has encountered so far. Under the executive reorganization statute the Congress has 60 days to study the plan; after that, unless the House or Senate votes to disapprove it, it automatically goes into effect. Although the Government Operations committees of both House and Senate are planning to hold hearings on the plan, the motives appear to be a sense of constitutional responsibility and general interest, rather than uneasiness or disapproval. Thus, if matters work out as anticipated, the Environmental Science Services Administration should be in existence by the middle of July. And there is a feeling that while it is not the meteorological millennium, the new agency is a sound first step in making a more far-reaching unification possible.

—ELINOR LANGER

Announcements

The National Aeronautics and Space Administration invites scientists to propose research experiments and design studies for forthcoming manned and unmanned space missions, and to propose **space investigations** not now scheduled. Most of the scheduled flights will take place from 1967 to 1970. Detailed