

tal shelf, especially those in the oil industry, often urge a more ample definition of the Continental Shelf.

The commission urged a "strong commitment to a well balanced program of deep ocean exploration during the 1970's." The United States should learn to conduct surface and undersea operations to utilize fully the continental shelf and slope to a depth of 2000 feet, the commission recommended, and should establish a goal of achieving the capability of exploring the ocean depths to 20,000 feet within a decade, and of utilizing these depths to 20,000 feet within the next three decades.

Although the commission report is a long and interesting effort, its omissions will bother some. Due to a lack of time and resources, the commission noted, it was unable to examine the capabilities of the U.S. Navy and Merchant Marine. Also, the Great Lakes receive relatively little attention although they were specifically

mentioned in the Congressional act establishing the commission. A more serious omission, perhaps, is that the commission did not concern itself with the question of priorities, either as to marine exploration in relation to other federal endeavors, or as to priorities among its various marine proposals.

Nonetheless, the report is bound to set the stage for a more spirited discussion of national policy in the marine sciences during the coming year. Chairman Stratton, formerly president of M.I.T., has been successful in pulling together an often hard-hitting report from a diverse commission without engendering any formal expression of minority views.

Representative Charles A. Mosher (R-Ohio), one of the congressional advisers for the commission, delivered the commission report to the Nixon forces last week and said, in an interview, that he believes that Nixon puts a "very high priority on the need for a vigorous program" in the oceans. Mosher also

said that Nixon planned to reappoint Edward Wenk, Jr., to continue as executive secretary of the Marine Sciences Council. The council was established by Congress at the same time as the commission; the council is an interagency body designed to coordinate and facilitate federal marine activity. The Vice President serves as chairman of this council, and Wenk has assisted Humphrey in this role for the past 2½ years. The council and the commission have maintained separate identities and separate staffs.

Although the commission has attempted to launch its report with something of a splash, many of its major recommendations may sink without even a ripple unless the new President gives them his backing. In exploration of the oceans as well as in other areas of scientific and technical endeavor, Washington waits for the new President to make up his mind, to speak, and to act.

—BRYCE NELSON

## Institutional Grants: "Miller Bill" Opens the Debate

The "Miller bill" has become a Washington code phrase for a proposal to supplement federal research grants for academic science with a program of institutional support. Recently reintroduced by Representative George P. Miller (D-Calif.), chairman of the House Committee on Science and Astronautics, this measure has become a principal vehicle for congressional consideration of the needs of academic science and higher education.

The bill was first introduced in 1966 as a courtesy to the National Association of State Universities and Land-Grant Colleges which drafted it. But it languished in the committee files until last year, when Miller and Representative Emilio Q. Daddario (D-Conn.), chairman of the subcommittee on science, research, and development, decided—at the urging of a number of university presidents and others—to hold hearings on it. Now Miller and Daddario appear to be strongly behind the bill. Daddario plans to conduct a second round of hearings soon in order

to improve the formula for distributing grants under the measure. The bill's chances of passage at this session seem remote, but Daddario says he will try to bring it to the House floor as quickly as possible.

As now revised, the bill would authorize for fiscal 1970 an appropriation of \$400 million in grant-in-aid funds, an amount equivalent (by Daddario's calculations) to 20 percent of the federal funds allocated for support of academic science in fiscal 1969. For the years thereafter, the appropriation authorized would equal 20 percent of the preceding year's federal outlay for support of academic science.

It was clear from last year's hearings that the task of devising an institutional grant formula pleasing to all sectors of the higher-education community is not an easy one. The original formula was denounced as flagrantly discriminatory by a spokesman for the junior colleges (many a congressman now has one or more of these in his district), and was even criticized by people from research-oriented universi-

ties, which the formula clearly favored.

But the testimony indicated that, by and large, the higher-education community does want some kind of institutional grant program. Such a program was endorsed in principle by all the spokesmen for higher-education associations who testified and by such figures as Leland J. Haworth, director of NSF; Philip Handler, chairman of the National Science Board and heir apparent to the presidency of the National Academy of Sciences; Eric Walker, president of Penn State and president of the National Academy of Engineering; and Donald F. Hornig, President Johnson's Science Adviser.

As the witnesses noted, the blessings bestowed on academic science by federal support of research projects have, of necessity, been unevenly distributed, and even the more favored institutions are now feeling financial stress. A fundamental problem has been that the federal support has not fully covered research costs. An institutional grant program would be expected to provide a new and dependable source of funds for all institutions and allow them greater independence and flexibility in setting their goals. And, as university officials are clearly aware, it might give them better means of commanding the institutional loyalty of professors who now are accustomed to looking solely

to Washington for support of their research.

However, given the continuing federal budgetary squeeze and the promise of another lean year for academic research, some well-placed observers believe that the current session of Congress is not a propitious time to seek enactment of a costly new aid-to-education bill. Just the fact that the Miller bill singles out academic science for support may strike many members of Congress the wrong way. "It sounds like an extraordinary plea for special benefits for a field already favored by legislation enacted in the past," comments Representative John Brademas (D-Ind.), a member of the House subcommittee on higher education.

Of course, the program proposed in the Miller bill can be viewed as a foot in the door—as the precursor of general institutional support benefiting all fields. There is, in fact, reason to think that the bill is so regarded by the association leaders who drafted it. But the strategy of invoking the name of science to establish precedent-setting programs of federal support for higher education may have lost much of its efficacy.

While congressmen may once have felt that to vote benefits for academic science was the moral equivalent of saluting the flag, there is now evidence, as in the massive cuts in the NSF budget last year, of a change of attitude. In this connection one must note that, although the American Council of Education's Commission on Federal Relations supports the Miller bill, it is now developing a proposal for a program of general institutional grants. The commission is doing so apparently in the belief that the chances of such a program's receiving

congressional approval are as good as, or better than, those of a program benefiting academic science alone.

According to John F. Morse, director of the commission, the program his group is considering would be administered by the U.S. Office of Education (USOE) rather than by NSF and the legislation creating it would be handled by the House Education and Labor Committee. Thus, even now one can foresee the possibility of a major jurisdictional rivalry developing between the Education and Labor Committee and Miller's Science and Astronautics Committee. Although Edith Green (D-Ore.), chairman of the House subcommittee on education, is now withholding comment on the Miller bill, she has spoken favorably of the concept of general federal aid to higher education and she presumably would like to take up such measures in her subcommittee.

The Department of Health, Education, and Welfare, of which USOE is a part, has reported unfavorably on the Miller bill, partly on the grounds that it slights the smaller, weaker institutions and, though it provides additional support for the sciences, it does not support the humanities. Yet, even if its formula and coverage were made more equitable in HEW's eyes, the bill would receive a low priority from the department's present program planning staff.

Alice M. Rivlin, assistant secretary of HEW for planning and evaluation, has been chairman of an interagency policy committee assigned to make a "strategy study" of federal support for higher education. As this is written, the committee's report still had not been made public, but there is reason to believe that, in general, it will be

similar in viewpoint to the report of the Carnegie Commission on Higher Education (chaired by Clark Kerr, former president of the University of California).

In its recommendations (*Science*, 20 Dec. 1968), the Carnegie Commission stressed equality of educational opportunity and direct aid to students. It proposed a program of cost-of-education supplements to institutions, but these would be based on the number of students who had received federal grants. Under the Miller bill, on the other hand, two-thirds of the money would be distributed according to formulas based on the volume of research grants received and the number of advanced degrees awarded; the remaining third would be allocated to the various states on the basis of the number of undergraduates enrolled in their institutions and divided up among institutions within each state on the basis of such factors as the number of baccalaureate degrees awarded in science and the number of student semester hours in science taught. Some educators, such as Charles J. Hitch, president of the University of California, who feel that the program set out in the Miller bill would be useful, nevertheless give the Carnegie proposals a higher priority.

Also, the Nixon administration, now on the point of taking office, may not want Congress to push ahead with the Miller bill or any other proposal until it has had time to generate some ideas of its own. In sum, rather than as a proposal to be viewed as ready for enactment, the Miller bill probably can best be regarded as the opening bid in the discussion of the need of higher education for further federal support.—LUTHER J. CARTER

## French Science: Austerity Drive Ends Rapid Budget Growth

*Paris.* The franc crisis has taken the acceleration out of French support for science and technology, but outside of canceling or postponing a few big projects, the government, despite a broad austerity program, does not seem to be squeezing these fields too hard.

As was the case with their American counterparts, French scientists and technologists are finding it painful to live with the prospect of little or no financial growth after several years of sensational increases. But since the days of true penury were not so long

ago, the current situation, difficult as it may be, is not regarded as calamitous. The French Government is now providing about \$1.7 billion a year for research and development; this amount, plus another \$800 million spent by industry, brings French R & D expenditures to approximately 2.4 percent of the gross national product, compared with 1.5 percent as recently as 1962. Science and technology have long stood in the center of De Gaulle's plans for national greatness, and there they remain, however much the government must revise its plans because of the wobbliness of the franc.