News and Comment

NSF Hearings: Last Year's Chill Has Been Replaced by Affection and a Sizeable Budget Increase

When officials of the National Science Foundation went to the House last year to defend their budget request, they couldn't have got a cooler reception if they had come to advocate repeal of the kidnap law.

They were badgered and interrupted with irrelevancies; they were told that "the scientist does not know the value of a dollar," and, in general, the group before which they were appearing, the House Independent Offices Appropriations Subcommittee, created the impression that its long honeymoon with NSF was at an end. The committee later issued a report that held the NSF appropriation to the previous year's level of $322 million—though an increase to $353 million was later obtained in a House-Senate conference—and proposals for a number of new NSF programs were killed off.

The treatment of the foundation led many members of the scientific community to conclude that grim days lay ahead for NSF and possibly for other agencies involved in support of basic research and related educational activities. The conclusion was a reasonable one. The subcommittee members and their chairman, Representative Albert Thomas (D–Tex.), had long shown a tough-minded but highly benevolent attitude toward the foundation, rigidly insisting upon clear justifications for expanding NSF activities, but usually appropriating funds when such justifications were made. If these legislators were reversing their sentiments, it was fair to conclude that some basic elements of trust and cooperation had fallen out of the relationship.

If such elements had fallen out, it appears that they have now been restored, for NSF's latest appropriations hearings* add up to a scientific-legislative love fest which suggests that whatever may have gone wrong in the past, most, if not all, is now forgiven. In the course of 230 pages of printed testimony, not only is there not an unkind word to be found, but the allegations of affection between the legislators and the scientist-witnesses frequently exceed even Capitol Hill's supremely high standards of hyperbole.

And the affection was not limited to verbal display, for when it came time to render a verdict in money for the foundation's programs, the committee voted to increase the current budget by $67 million. This amount, it is true, turns out to be just $67 million short of the $487 million sought by the foundation, but if past practice is repeated, the Senate will appropriate a sum close to the foundation's request, and the two houses will then split the difference.

At last year's hearings, foundation officials found the committee bursting with hostile questions and tart observations. Alan T. Waterman, who has since retired as NSF director, managed to get through only a few sentences of his prepared statement when chairman Thomas cut in with a pointed remark about the affluence that has come to California through federal research programs. Other members wanted to know when the foundation's budget would level off, and Thomas repeatedly requested that a dollars-and-cents value be assigned for the Ph.D.'s whose training the foundation argued was essential to the nation's welfare. But this year, affability prevailed.

Thomas expressed warm regrets over the impending departure of Detlev Bronk as chairman of the National Science Board. Bronk, who is also president of the Rockefeller Institute, affectionately referred to the committee chairman as "Albert," and explained that he was actually serving on the board beyond his term. Thomas replied that he would like to see Bronk continue to serve on the board, and later went on to assert that Bronk is "most learned, inspiring, and convincing." Another committee member, Representative Joe L. Evins (D–Tenn.) added that Bronk is "one of the really great Americans." Philip Handler, a Science Board member who is chairman of the biochemistry department at Duke University, was simply described by Thomas as a "great man." Roger Revelle, of the Scripps Oceanographic Institute, was not present, but when his name came up, Thomas declared that he is a "remarkable man." (The affection for scientists was still intact a few days later when the Office of Science and Technology came before Thomas's group. Thomas took that occasion to observe that OST director Donald F. Hornig is a "national asset." At OST's 1963 hearing, Thomas devoted most of the session to sticking pins into Hornig's predecessor, Jerome B. Wiesner.)

The change of mood inevitably inspires the question, What happened in the course of one year to put the relationship back on the track? The answer necessarily involves a good deal of speculation, since appropriations subcommittees tend generally to maintain an imperious silence about their motives. In addition, Thomas, who, like all appropriations subcommittee chairmen, dominates his committee, is one of the most reticent members of Congress. Nevertheless, it appears that a number of factors came together last year to account for the harsh treatment accorded NSF. And a number of others now seem to have come together to account for the change.

Perhaps the most significant factor in last year's situation was that NSF was seeking an unprecedented budgetary increase—83 percent—at a time when director Waterman was slated for retirement and his eventual successor, Leland J. Haworth, had not yet been selected. In the course of Waterman's tenure, which began with the establishment of NSF in 1950, the foundation had grown massively in size, stature, and influence, but its later years were marked by a number of difficulties which did little to hold the confidence of Capitol Hill. The Mohole episode and the financial problems of the

* *Independent Offices Appropriations for 1965*, part 2, available without charge from the Appropriations Committee, U.S. House of Representatives, Washington, D.C.

American Institute of Biological Sciences (AIBS) can only be regarded as relatively minor aberrations when viewed against NSF's achievements over a dozen years, but a thousand well-chosen grants for basic research gain scarcely any public recognition while the AIBS story was amply reported by the Washington press. As a consequence, NSF was in the position of seeking its largest budgetary increase at a time when (i) the impression was growing on Capitol Hill that the foundation's administrative practices needed revision, and (ii) a new and unknown director was due to take office in a few months.

By themselves, these factors probably would not have been enough to account for last year's axing of the appropriations request, but they coincided with a number of others that contributed to the committee's parsimonious attitude.

First of all, the NSF budget ran directly into a surge of congressional uneasiness about the size of the overall federal research and development budget. It has taken a lot of congressional hearings over the past year to drive home the point that development —in which NSF plays no part—takes the lion's share of R & D expenditures, and that basic research is very different from developmental research in personnel, costs, and objectives. Congress now seems to have absorbed that lesson, but last year the general sentiment was that R & D had gotten out of hand, and that it would be best simply to hold everything fairly steady while the situation was appraised. Thomas's committee, after years of dealing with NSF programs, had a clear appreciation of the distinction between basic research and the large-scale and costly engineering programs that come under the heading of development, but the mood of "wait and see" was in the air, and it dovetailed with the committee's general sentiments.

Further contributing to last year's decision was a good deal of irascibility over the geographical distribution of research funds. When NSF sought funds for what has since become its Science Development Program *(Science,* 10 Apr. 1964), the committee angrily declared that NSF had failed to achieve an equitable distribution of its funds. NSF argued that the development program was intended to promote the growth of centers of excellence in areas outside the mainstream of federal research support, but the committee was unimpressed and, in effect, decreed that if funds were not being evenly distributed, additional funds would not be made available to correct the situation. The committee subsequently directed NSF to refrain from starting new programs, thus barring the start of the science development program and a $25-million training grant program for graduate training in engineering, mathematics, and the physical sciences.

It isn't too much to say that the committee's treatment of witnesses, as well as its financial verdict, had a traumatic effect on the leadership of the scientific community. On several occasions, at hearings before other congressional committees, scientific witnesses spoke out—sometimes bitterly—about the fate of the foundation's budget. And, though it was late in the game for NSF's constituents—the universities—to come to the foundation's support, numerous letters and personal visits to members of Congress made it clear that the committee's decision was viewed with deep concern by a good many responsible people.

Second Thoughts

It is difficult to pin down just what may have transpired in conversations with members of the committee itself, but it appears that the outcry that followed the budget action led at least some of them to conclude that they may have been unduly harsh in their treatment of NSF.

This appraisal is supported by the fact that, before the committee completed its hearings on the latest NSF budget, it informally gave the foundation permission to go ahead with planning for the Science Development Program. The foundation, in turn, recognized that in this tight budget year it would not be prudent to seek too large an increase. Last year, starting from a base of $322 million, it sought an increase of $236 million, and ended up with an increase of only $31 million. This year the requested increase was $134 million. The House verdict is $67 million, but when the final decision is in, it is likely that the sum will be close to $100 million. That's still far short of what the foundation could usefully spend, but considering the situation that prevailed only one year ago, it appears that the foundation and its friends have grounds for a bit of cheer.—D. S. GREENBERG

Engineers: Plans for Playing Broader National Role Include National Academy of Engineering

Current efforts to bring into being a National Academy of Engineering can be viewed as one aspect of a growing movement among engineers to render public service and to exert influence on national affairs in a more organized and more effective way.

The proposed engineering academy would not only provide a means for granting high-level recognition of achievement in engineering but would also furnish basic machinery for giving advice to the government and for conducting authoritative studies on problems in which engineering is important. The model, obviously, will be the National Academy of Sciences and, as a matter of fact, NAS president Frederick Seitz late last month appointed 25 leading engineers to a committee to formulate plans for the new academy.

There is little question that irredentist sentiment is fairly widespread among engineers because of a feeling that scientists in the past two decades or so have moved into places of status and power formerly occupied by engineers on the national scene and, particularly, vis-à-vis the federal government.

A vigorous expression of the view held by many engineers is to be found in the spring edition of the *Engineer,* the quarterly news tabloid published by the Engineers Joint Council (EJC), the leading national federation of engineering professional societies, which devotes itself to manpower and engineering education problems and other policy matters which concern engineers.

William R. Marshall, Jr., associate dean of the University of Wisconsin's engineering college and a newly elected vice president of EJC, the *Engineer* said, "would like to see a reaffirmation of the importance of engineering to the nation. He believes that science to an unwarranted extent has been accorded recognition for achievements which rightly belong to the engineers. Moreover he thinks that scientific leadership, in taking on essentially engineering projects, has caused unwitting mismanagement and unwarranted allocations of large sums of public money. As illustrations he cites Project Mohole, Project Vanguard, and the Sugar Grove National Observatory.

" 'Large so-called scientific projects of national scope require an engineering overview and direction,' he says. This