NSF: Congress Takes Hard Look at Behavioral Science Course

The National Science Foundation (NSF) is observing its 25th birthday, and the celebration is being dampened by severe congressional criticism of the agency. The challenge began with a questioning, notably by Senator William Proxmire (D–Wis.) of what was labeled "wasteful" research grants by NSF and other agencies, and crystalized unexpectedly on 9 April in a vote in the House to require NSF to submit all research grants to Congress for review (*Science*, 25 April). The House vote came at the end of an acrimonious 3-hour debate which centered largely on an elementary school behavioral science course called "Man: A Course of Study" (MACOS) developed with NSF funds as part of its long-standing curriculum improvement program.

The attack on MACOS was led by Representative John B. Conlan (R–Ariz.) a member of the Science and Technology Committee which handles NSF authorization legislation. The $755 million NSF bill was before the House on 9 April when Conlan ignited the debate. The House rejected, 215 to 196, a Conlan amendment providing for congressional review of completed NSF curriculum projects, only to vote later to attach a much more sweeping requirement for congressional monitoring of NSF research offered by Representative Robert Bauman (R–Md.). It then proceeded to pass the bill. Observers of the debate say that the long and heated discussion of MACOS put the House in the mood to pass the amendment which, in effect, makes Congress one huge research review board.

In his carefully prepared brief on MACOS which was seasoned with selected excerpts from MACOS materials, Conlan deplored the content of the course. In remarks he read into the *Congressional Record* on 8 April he characterized MACOS as "a course for 10-year olds mainly about the Netsilik Eskimo subculture of Canada's Pelly Bay Region. Student materials have repeated references in stories about Netsilik cannibalism, adultery, bestiality, female infanticide, incest, wife-swapping, killing old people, and other shocking condoned practices." He also took exception to procedures NSF employs to implement the courses developed under its auspices. The general tenor and tone of his remarks are indicated by his declaration that "It is absolutely unacceptable for NSF to continue using taxpayers' money for aggressive promotion and marketing activities for their own preferred social studies courses, undercutting competition from regular textbook publishing houses."

The chief defenders of MACOS and NSF curriculum development policies in general were Representative James W. Symington (D–Mo.), who chairs the subcommittee on science research and technology which originally handled the NSF authorization bill, and Representative Charles A. Mosher (R–Ohio), ranking Republican on the Science and Technology Committee. Symington stressed that NSF pursued policies designed to insure that choices on courses are left exclusively to local school boards, and Mosher argued that congressional review of course material amounted to federal censorship, but both seemed to have been placed in the difficult position of having to prove the negative in dealing with Conlan's charges against NSF.

Two separate issues were involved in the debate—the question of "seemingly wasteful" research, as an oft-quoted summary of selected research grants prepared last year by Congress's General Accounting Office puts it, and the matter of the content and implementation of courses developed with federal funds. But it was evident in the debate that the two issues were mutually reinforcing.

The eruption over MACOS can be related to a deeper current of discontent in the society which is often expressed in criticism of schools. In some quarters, social and behavioral scientists are depicted as agents of social change bent on turning children against the values and beliefs of their parents. The recent bitter campaign in West Virginia by parents' groups to bar "godless" and "dirty" books from the school curriculum is proof of the intensity and even violence which such controversy can generate.

Objections to school programs in such areas as sex education and the teaching of evolution theory are certainly not a new phenomenon. In general, those involved can be characterized as politically conservative, but the protesters' aims and methods have differed fairly widely. An increasingly common theme, however, is a demand that parents be directly involved in local school selection of course materials. And there are a number of indications that an attempt is being made to organize local protests into a national effort. The volume and distribution of the mail coming into Congress on the MACOS issue suggests that the attempt may be working.

Until the storm over MACOS broke, NSF had not experienced serious difficulties in two decades of experience with its curriculum improvement projects. There has been sporadic criticism of the teaching of evolution theory in the widely used materials developed by the Biological Sciences Curriculum Study group (BSCS), but BSCS and NSF had stuck to their guns and had not modified treatment of the subject, as some commercial publishers had done. MACOS itself has been available since 1970 and had encountered opposition in only a few places. The escalation of the issue to the floor of the House seems to indicate that a change in climate is occurring.

MACOS was developed between 1963 and 1970 by the Education Development Center, Inc. (EDC), Cambridge, Massachusetts. EDC is the institutionalized descendant of the Physical Sciences Studies Committee (PSSC) which produced one of the first and best known of the high school science curriculum revisions for NSF. EDC is regarded as among the best of educational R & D organizations and has developed a number of new courses in both the natural and the social sciences with the support of NSF, other federal agencies, private foundations, and commercial publishers.

In the case of MACOS, EDC followed the practice, which has been standard since NSF began funding curriculum projects, of involving both university scholars and school teachers in relevant disciplines in the course development process. The chief "scholar consultants" for MACOS were psychologist Jerome S. Bruner, then of Harvard, now at Oxford, and anthropologists Irven DeVore of Harvard and Asen Balikci of the University of Montreal.

The first half of the 1-year course is devoted to the social behavior of ani-

mals, with sections on salmon, herring gulls, and baboons. The second half concentrates on the life of the Netsilik Eskimos.

Where MACOS departs most obviously from other similar courses is in its use of a mix of course materials—films, film strips, slides, records and games, as well as booklets. An aim of the course is to encourage students to learn the behavioral scientist's way of observing, collecting data, and setting and solving problems. In this cause, such things as ethnographic films and field notes of scientists are incorporated in the course materials.

The "multimedia" mix of materials seems to have at least indirectly added fuel to the fire of Conlan's condemnation of NSF implementation activities. In what amounts to a crescendo in Conlan's well-orchestrated criticism of NSF procedures, he made these charges:

> Mr. Chairman, transcending serious concerns about the particular nature of "Man: A Course of Study," my amendment is addressed to the larger and more vital issue of local school choices and decision-making. We Americans place a high value on local autonomy in education, and have always repudiated a national policy on education or a single national school system directed from Washington.
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> However, NSF activities in curriculum implementation are moving ominously in that direction. Consider these facts:
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> When MACOS development was completed in 1969 at a cost to taxpayers of more than $6.5 million, more than 50 publishers were offered and refused to market the course because of its objectionable content, philosophy, and its high cost.
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> It is enlightening to note that these more than 50 publishers, ordinary commercial firms of long-standing reputations, rejected the blandishments of NSF and Education Development Center, who developed MACOS, and refused to have anything to do with what they uniformly regarded as a curriculum not desired by American parents and schools.
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> But this adverse judgment by experienced professional publishers did not deter NSF and EDC. They seeded Curriculum Development Associates, a small commercial publishing firm in Washington, so that a profit could be made. And NSF gave CDA a special 80-percent cut in the normal royalty required when federally developed school materials are sold commercially so MACOS would sell and undercut competition from other curriculum materials available in the private sector.
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> In ordinary textbook trade channels, 15 percent royalties are paid to authors or developers of published materials. Since NSF gave most of the money for development of MACOS, one would expect the Foundation to demand the ordinary return on its efforts, should there be a marketing of the results of such efforts.

NSF's response is that the agency followed its regular procedures in seeking a publisher for MACOS, making modifications required by the special character of the course materials. It is true, as Conlan said, that a lot of commercial publishers—58 to be precise—turned down the course in the first round. The major objections, according to NSF sources, were that the unorthodox materials made the course unappealing to conventional textbook publishers and that MACOS promised to be controversial—specifically that the emphasis on human adaptation raised the issue of evolutionary theory.

As the development phase for the course drew to a close in the late 1960's, EDC, with no publisher signed up, was faced with a problem of providing information about the course to interested school systems. At this point, NSF decided to make a $270,000 grant to EDC for the purpose of demonstration and distribution of materials. Money from this grant was never actually spent however, and after two more rounds of negotiation EDC settled on Curriculum Development Associates, Inc., a small Washington, D.C. firm, as publisher. NSF approved CDA as not only meeting regular agency criteria, but as being able to provide the teacher training services which were regarded as particularly important for MACOS. CDA does not have a large sales and marketing organization, such as larger educational publishers field, but has recruited a network of "associates" from among school and college teachers to handle teacher training.

What of Conlan's charge that CDA is paying royalties at a rate of 3 percent rather than the 15 percent that might be expected? The NSF explanation is that the 15 percent figure is typical for regular high school textbooks, but that the usual figure for elementary school books is 5 to 7 percent and the relatively higher costs of producing MACOS

Comment on Course Implementation

The following is the section on Curriculum Implementation Review from the report on National Science Foundation Authorization bill H.R. 4723 by the House Committee on Science and Technology.

The Committee gave consideration to the National Science Foundation's policy regarding the implementation and distribution of science curriculum materials developed under NSF grants. In past years the Committee has urged the NSF to insure that such curriculum development activities do not result in the development of useful and relevant materials which, however, are not then put into use in the classroom. The Committee therefore, in the past specifically asked the Foundation to undertake implementation activities which would insure that information about these curriculum materials, their nature, and their availability became known to the educational community. In addition, where needed, the NSF was asked to provide assistance in the actual implementation, on a selective basis, to school systems which on their own choose to adopt these materials for classroom use.

This year it has been brought to the Committee's attention that in some cases the NSF has gone somewhat beyond its normal implementation stage with activities which appear to involve the marketing of curriculum materials. In one specific case involving the anthropology course offered, "Man: A Course of Study" the Committee received a number of indications that the dissemination of the course was being achieved through a form of subsidization which places it in competition with similar course materials developed and/or distributed by private enterprise.

Accordingly, the Committee requests that the NSF defer further funding of implementation activities for this particular course, pending a thorough review of the Foundation's overall curriculum implementation policy, as well as this particular example of it. The Chairman of the Committee will appoint a small, impartial review group to study this question and submit to the Committee a report no later than May 31st. This review group will include representatives of those involved in the implementation of curriculum materials, those in the private sector engaged in this field, and the staff of the National Science Foundation.

made a lower figure justifiable. CDA would have to purchase rights to some of the films and other material held by other groups and so the lower royalty figure was agreed to by NSF to keep the price of MACOS competitive.

Conlan also charged that NSF and EDC "are now embarked on a further multimillion dollar effort, unbeknown to Congress, to establish a larger educator network to implement other jointly developed social studies programs. Congress must stop this insidious invasion of local autonomy in education. . . ."

Conlan went on to quote extensively from an application for a grant which he said was approved and funded on 15 January. As far as *Science* can ascertain, Conlan quoted from an early version of a proposal which was subsequently scaled down sharply in both scope and funding. The grant as approved provides some $95,000 to sponsor a conference and a training session. The conference scheduled for Boston this summer will be to familiarize 40 school administrators with 10 social science courses of which one is MACOS. Six of the 10 were developed by EDC with the support of NSF, other federal agencies, private foundations, and commercial publishers. The second activity under the grant will be a 2-week intensive training course for educators on the EDC-developed high school level course Exploring Human Nature. Teams trained in the session will, in turn, train teachers for the course.

To look into the issues raised about MACOS, a review group is being appointed by Representative Olin E. Teague, chairman of the Science and Technology Committee. And an internal review group at NSF is also at work. NSF director S. Guyford Stever has told Teague that no further funds will be obligated for MACOS or other precollege course development and implementation until the review has been completed and results reported to Congress.

The findings of the House group, due to be reported on 31 May is likely to be the most immediately influential on legislative events, particularly when the time comes for House-Senate action on the Bauman amendment. The composition of the House committee and the scope of its study have not yet been announced.

It will be difficult for such a group in the month available to resolve questions ranging from the suitability of the content of the MACOS course material to the controversial issue of "censorship" by Congress. But such a forum is certainly preferable to the floor of the House where fine distinctions tend to get lost, sometimes deliberately.

As the reference to MACOS implementation in the committee report (see box) suggests, Congress has pushed NSF to promote its curriculum improvement projects, but has never given clear guidance on just how much. Since its beginnings 25 years ago, agency officials have been sensitive to the potential for controversy in its education programs, particularly those in the social and behavioral sciences. But NSF appears vulnerable in the rough and tumble that appears to be developing. NSF's constituency is not a particularly powerful one in the congressional context and NSF has been more scrupulous or perhaps more naive than many other agencies in observing the dictum against lobbying in its own interests.

It is bad luck for NSF that the flap over "wasteful" research has had a synergistic effect. And it is ironic that so much negative attention is being paid to behavioral science courses which represent a small segment of the education effort of NSF, which, in turn, is such a small part of the overall NSF program.

Nevertheless, NSF has not inspired such displeasure in Congress since the controversy over the MOHOLE project, that casually conceived and poorly administered deep-drilling program, a decade ago. NSF survived MOHOLE with little more than embarrassment, but the attacks of Proxmire, Conlan, Bauman and others seem to have struck a responsive chord among their colleagues and unless NSF finds some effective friends in and out of Congress the agency is likely to find itself operating with restrictive new taboos, and not just for behavioral scientists.—JOHN WALSH

Briefing

Fundamental Setback for Fundamentalists

A serious threat to the teaching of evolution in schools has been dissipated, or at least blunted, by a ruling of the U.S. Court of Appeals for the Sixth Circuit. The ruling, issued on 10 April, strikes down as unconstitutional a law passed by the state of Tennessee which requires textbooks to give "equal time" to the Darwinian and biblical explanations of man's origins.

The importance of the ruling transcends the boundaries of Tennessee. It possibly marks the end to a nationwide campaign by fundamentalists to adulterate the teaching of evolution. Starting in 1963 in Orange County, California, with the establishment of the Creation Research Society, the professed goal of the campaign has been not to suppress the teaching of evolution but, more subtly, to put it on an equal time basis with Genesis (see *Science*, 17 November 1972). The campaign has been pursued in some states by putting pressure on school boards, as in California, and in others by presenting bills to the legislature. The second approach was successful in Tennessee when the state passed a law prohibiting the use of any biology textbook that failed to give the authors of Genesis equal billing with those of the Darwinian persuasion (see *Science*, 16 November 1973).

The National Association of Biology Teachers (NABT) retained counsel—Frederick S. Le Clercq of the University of Tennessee—to challenge the constitutionality of the law. Procedural issues between the NABT and the state of Tennessee bounced all the way up to the U.S. Supreme Court, and the case came to rest before the U.S. Court of Appeals for the Sixth Circuit. The court ruled 2 to 1 in the NABT's favor, the dissenting vote being on procedural grounds.

Tennessee was the state that made possible the Scopes trial, and the appeals court ruling notes that the purpose of establishing the primacy of Genesis over the theory of evolution "is as clear in the 1973 statute as it was in the statute of 1925." The ruling, by circuit judge George Edwards, notes that "For a state to seek to enforce such a preference by law is to seek to accomplish the very establishment of religion which the First Amendment to the Constitution of the United States squarely forbids. . . . The antecedents of today's decision are many and unmistakable. They are rooted in the foundation soil of our Nation. They are fundamental to freedom."

The decision can apparently be appealed only to the U.S. Supreme Court.—N.W.