
Science Legislation

Forum

This forum is arranged from material selected by the editorial staff from testimony given on 28 and 29 May before the Subcommittee on Public Health of the House of Representatives Interstate and Foreign Commerce Committee.

Science has been endeavoring to keep up to date with the current developments in the Congress related to science legislation. The equivalent of almost three regular issues has been devoted to this subject since 1 January.

Readers of *Science* were informed for the first time on 7 June that a bill proposing a National Science Foundation had been introduced into the House on 15 May and hearings before a subcommittee had been held on 28 and 29 May. Since this new bill, H.R. 6448, was based on the older Senate Magnuson Bill and not on the compromise Kilgore-Magnuson Bill, S. 1850, Watson Davis was caused to remark that the new bill seems to divide again those scientists who favor some kind of Federal support for research.

Why H.R. 6448 Is the Better Bill

Homer W. Smith
New York University

... Despite the preponderant testimony from scientists and those experienced in scientific affairs in favor of the Magnuson Bill, this bill remained in administrative disfavor. At the conclusion of the [November] hearings it was clear that the essential principles for the preservation of the freedom of science, so strongly urged by all of Dr. Bush's committees, were in danger of being completely submerged in favor of political control. There was strong opposition to scientists having anything more than a nominal voice in determining the policies of the Foundation. It was presumed that the top scientists of the country would give generously of their time to act on an advisory committee which had neither authority nor responsibility. It was clear, in short, that the philosophy of the Foundation was to be one appropriate to war mobilization and government direction, and not one appropriate to the peacetime development of science by experienced civilian scientists.

On 14 November a number of scientists met under the chairmanship of President Isaiah Bowman, of The Johns Hopkins University, to discuss the progress of this legislation. At that time it appeared that the essential principles for the preservation of the freedom of science and the protection of the National

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In the same issue Howard A. Meyerhoff pointed out that the introduction of the new bill was a definite threat to the establishment of a National Science Foundation during this session of Congress and implied that it might be necessary to go through the whole process of compromising the opposing factions all over again.

In order that our readers may be better informed with regard to the issues, the views of Dr. Homer Smith, speaking for the Committee Supporting the Bush report, and the Secretary of Commerce, Henry A. Wallace, are presented here, together with a statement from Dr. Meyerhoff outlining his position as executive secretary of the American Association for the Advancement of Science. The statements of Dr. Smith and Secretary Wallace are somewhat abbreviated. Dr. Meyerhoff's statement was written expressly for *Science*.

Why S. 1850 Is the Better Bill

Henry A. Wallace
Secretary of Commerce

... In my opinion S. 1850 combines the best features of S. 1285 and S. 1297 as well as a number of additional desirable provisions which grow out of the expert testimony presented at the hearings. S. 1850 is in accordance with the President's recommendations on science legislation; H.R. 6448 is in conflict with those recommendations on several important points.

I believe that the following provisions of H.R. 6448 are particularly undesirable:

(1) The bill provides that the powers and duties of the National Science Foundation shall be exercised by a part-time administrative board of nine members appointed by the President with the advice and consent of the Senate. This is substantially the same administrative arrangement as in the original Magnuson Bill in the Senate, S. 1285. A slight compromise has been made, however, by providing that the Director of the Foundation shall be appointed by the President from nomination by the Board, in place of the original provision for a Director appointed by the Board. Since all powers of the Foundation rest in the Board, this compromise is more apparent than real. As I stated in my testimony on the Senate Bills, I am strongly opposed in principle to turning over public functions and responsibilities, and especially the power to allocate public funds, to a part-time board of private citizens. I am in complete agreement with the President's position

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Why I Am Biased in Favor of S. 1850

Howard A. Meyerhoff

Executive Secretary, AAAS, Washington, D. C.

For several months I have been reporting news on science legislation in the pages of *Science*, and I have ventured to add current editorial opinions which were prompted by the news. Some of the opinions expressed were sharp, and it was anticipated that they would evoke protests. They did. The volume, if not the vigor, of the protests has been small, and they usually accuse the writer of bias. This is the reason for choosing the title of this article, which is partly a reply to those critics, but which, it is hoped, will also add something new to the issues under debate.

In early October 1945, several hundred scientists returned questionnaires circulated through the AAAS Council. Over 90 per cent believed that a National Science Foundation should be created. Officially, as executive secretary of the Association, I thereupon attempted to convert this belief into legislation. Several elementary principles had to serve as guides: 1) such legislation must meet the high standards of the scientific professions *and be acceptable to a decided majority of scientists*; 2) it had to be acceptable to the Senate committees sponsoring the legislation and at least to a bare majority in Congress; 3) it had to be acceptable to the Executive Branch of the Government or face a veto.

These principles are so self-evident that they should not need stating, but they have been violated by those who clung so long and so obstinately to S. 1285; by those who believe that S. 1777 is the ideal bill; and by those who currently insist that H.R. 6448 embodies everything scientists should want. It would make no difference whether any of these bills is better than S. 1850 from some special point of view—the great majority of scientists do not think so. Support of any of these other bills at this time violates the first principle; and further, as Senator Saltonstall emphatically stated in an address delivered in Washington on 12 June, it creates the impression of dissension

among scientists, and dissension is the precursor of legislative defeat.

I participated in most of the conferences which preceded the formulation of S. 1720 and the ultimate adoption of S. 1850. On the administrative side S. 1850 is the only bill which meets with the approval of experienced legislators.

I witnessed the agreement of the chairman of the Committee Supporting the Bush Report that S. 1850 meets the basic administrative requirements of that group.

I heard the Commissioner of Patents assert that the bill involves no patent reform or changes, and industrialists should agree that the systematization of patent procedure in government departments and bureaus for which S. 1850 provides is desirable.

I was present on the two occasions when the patent provisions were altered to give full protection to the rights and interests of manufacturers and industrial laboratories.

I witnessed, with regret and protest, acceptance of limitations on social science, imposed by the Committee Supporting the Bush Report, although two-thirds of the scientists who participated in the AAAS poll favored inclusion of the social sciences.

There is thus embodied in S. 1850 the most careful consideration of every controversial point and the most effective and acceptable solution of each and every issue. Two hundred thirty-two members of the AAAS Council, which includes representatives of most of the 196 organizations affiliated with the AAAS, believe that this is so; only 10 are sufficiently fearful of political control of science to have voted against support of S. 1850. So long as this proportion wants a National Science Foundation, I am strongly biased in favor of the only bill which has given thought to every issue and alone makes an earnest effort to meet minority needs and objections—S. 1850.

as expressed in a letter from the Director of the Bureau of the Budget to Dr. Vannevar Bush that in order to make the Foundation "effectively responsible to the President and the Congress it should be headed by a director appointed by the President, who should have full administrative responsibility for the operation of the foundation and its several divisions."

(2) H.R. 6448 does not provide for a Division of Social Sciences, but permits the Board to establish such a division. Nor does the bill provide specifically for scholarships and fellowships in the social sciences. In my opin-

ion the inclusion of the social sciences is too important and fundamental a question to be left to the discretion of the Board and is a proper subject for determination by the Congress. I urge that a Division of Social Sciences be incorporated in the legislation itself.

Both branches of science contribute to national defense and to the general welfare and are, therefore, deserving of Federal support. Moreover, it is generally recognized that the social sciences, which are relatively young, have in many respects not reached the high stage of develop-

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Consequently, a statement (*Science*, 1946, **103**, 558) concerning S. 1850 from the Committee Supporting the Bush Report, signed by 34 scientists who could quickly be reached, was circulated under date of 16 April to the 5,000-odd scientists who had signed or endorsed our letter to the President. In this statement it was pointed out that S. 1850 was a compromise bill; that many scientists doubted the wisdom of (a) including the social sciences in this legislation, (b) the provisions affecting the Government's patent policy, and (c) the arrangement for mandatory geographic distribution of funds to land grant colleges and tax-supported institutions; but that despite these undesirable features we regarded protracted delay or failure to enact this legislation as far more prejudicial to the public interest than the inclusion of the provisions objected to; and on these grounds we endorsed the bill and appealed to Congress as a whole to create a National Science Foundation by the enactment of S. 1850 before the end of the present session.

Briefly then, our position is that the Committee Supporting the Bush Report has from 14 November onwards endeavored to remove such undesirable features in the Kilgore Bill, S. 1720, as is possible and to amend it along other favorable lines. Throughout these negotiations we were committed, if feasible amendments were effected, to support this bill if and when it came to a vote in the Congress.

Only a few members of our Committee have seen the present bill, H.R. 6448. However, I have read it carefully and note that it conforms with the Magnuson Bill and incorporates certain constructive and acceptable changes indicated during the Senate hearings and in subsequent consultations. It complies with the position taken by the Committee Supporting the Bush Report, in their letter to President Truman of 24 November, in the following respects: the Director is subordinate in authority to the National Science Board; the social sciences, although not excluded, receive limited support until such a time as the Board may see fit to create a Division of Social Sciences; patent provisions do not modify the Government's patent policies in such a way as to discourage private and government-supported research; and there is no provision for the arbitrary geographic distribution of funds.

It is not clear to me whether or not it is possible for the Congress to create a National Science Foundation with an administrative pattern which does not meet with the approval of the President and of the Bureau of the Budget; whether it is possible for the Congress, against the wishes of the Administration, to create a National Science Foundation devoted solely to the interests of the natural sciences; or whether it is possible for the Congress to create this Foundation without disturbing revisions of our patent

laws. On the assumption that these things may be possible, it is my opinion that H.R. 6448 is superior to S. 1850, and I believe that the great majority of the 5,000 scientists who endorsed the Magnuson Bill will give it their wholehearted support.

It is imperative, however, that legislation incorporating one or the other of these bills, or the best features of both, should be enacted at this session, since the creation of a National Science Foundation to support fundamental scientific research and the training of scientists is, as we have said, of the utmost importance for the health, security, and welfare of the Nation.

Why S. 1850 Is the Better Bill

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ment of many of the physical and natural sciences. The present lack of balance in the development of the physical and social sciences is one of the important reasons for including provision for the social sciences in the Science bill. The great advances in physical and chemical research and the advent of atomic energy may well mean that we are on the verge of a new industrial revolution and profound social and economic changes. New and challenging problems will confront the social sciences, the solution of which may greatly affect the welfare of the peoples of the world. I believe that you will find that the most eminent and the most thoughtful of the physical scientists in this country believe that the encouragement and development of the social sciences is even more important than further progress in the physical sciences. The further development of the social sciences may well determine whether the new and terrible forces which man has discovered through the natural and physical sciences become man's servant for enhancing his welfare or the terrible instruments for his destruction. I am in complete agreement with the President's recommendation that Federal financial support be extended to the social as well as to the natural sciences.

Before leaving this subject, I should like to refer to the objections which have been raised to the inclusion of the social sciences in this legislation. Much of that objection has come from persons who are neither natural nor social scientists and have little first-hand experience with the methods and the accomplishments of social science. As Secretary of Agriculture, Vice-President, and Secretary of Commerce, I have had a good opportunity to work with many natural and social scientists. *The sweeping assertion that social science is not science at all is nonsense.* The methods of science are equally applicable to natural and social phenomena, and the standards in many fields of social science research are just as rigid and exacting as those in the natural sciences. The claim that social science is concerned with vague and impractical problems can be made only by those unfamiliar with its accomplishments. Every member of this committee knows from

experience with legislation that intelligent solutions to the problems presented to the Congress are impossible without statistical and other factual information developed by social scientists. The same situation exists in private business: increasing numbers of social scientists are being employed in industry and commerce and long-range plans as well as the day-to-day operations of our largest business enterprises are being based on the studies of social scientists. To dismiss the social sciences with a wave of the hand is to discard one of the most important tools for obtaining improved and urgently needed basic knowledge.

(3) H.R. 6448 provides that the disposition of patent rights to inventions and discoveries resulting from research financed by the Foundation shall be left to the discretion of the Board. However, as a guide to the Board, there is additional language outlining the following general policy: (1) inventions in the field of basic science resulting from research *completely* financed by the Foundation would in general be dedicated to the public; and (2) with respect to inventions in the field of applied science to which the research contractor has also made some independent contribution, the United States would receive only a right to use the invention without cost for governmental purposes.

These provisions give the Foundation positive encouragement and direction to allow private patents on discoveries resulting from research financed by public funds. I am unalterably opposed to these provisions. They perpetuate and give the approval of the Congress to the past and present unsound policies followed by some government agencies. The private research contractors of the Foundation will not be small and independent business enterprises; they will be the big corporations with large and well equipped laboratories which already have a tremendous advantage over their small competitors by virtue of the scientific and technical improvements which they alone can afford to develop and to patent. The provisions of H.R. 6448 will provide government support and financing to the research and patents of big business and lead to further industrial concentration, lessened competition and the stifling of small business and new enterprises. The President in his message to the Congress on 6 September 1945, clearly outlined the only sound public policy on this matter. That policy is to require dedication of all patents resulting from research contracts to the public, with only such narrow and strictly defined exceptions as may be necessary to secure the placing of a few important contracts in exceptional cases where the only qualified contractor will not accept a contract without some provision for private patents on his previous research.

(4) H.R. 6448 makes no specific provision for letting research contracts to other government agencies; yet such agencies—for example, the National Bureau of Standards—may frequently be highly qualified and well equipped to carry on research in a number of important scientific fields. I believe that it would be very desirable to provide explicitly in this legislation as an indication of Congressional policy that other Federal agencies may receive

funds from the Foundation and that such funds shall be in addition to, and not take the place of, other moneys specifically appropriated to such agencies.

(5) No provision is made in H.R. 6448 for any coordination of the increasing amount of scientific research conducted directly by the Federal Government or financed by Federal funds. On the basis of experience with several important scientific bureaus in the Department of Commerce, such as the National Bureau of Standards, the Weather Bureau, and the Coast and Geodetic Survey, I am convinced that such coordination should constitute one of the principal and most useful functions of a properly organized National Science Foundation. This was also one of the President's principal recommendations in his message to the Congress on 6 September 1945. There is some danger in the period immediately ahead that American science will not suffer from lack of financial support, but from misdirected and conflicting support which will dissipate the energies of our limited number of first-class scientists. There is already the sharpest kind of competition for the services of qualified scientists by the universities, by industry, by the Army and Navy, by the Manhattan Project, and by other government agencies. We are also faced with a great deficit in scientific personnel due to the interruption of the training of young scientists during the war. It will take careful coordination of our scientific effort to make sure that we reserve sufficient qualified scientific personnel for teaching purposes to make up this deficit. The Federal Government cannot and should not determine the scientific programs of private industry and the universities, but it can at least coordinate its own scientific program. I believe, therefore, that any National Science Foundation bill must have a provision for an interdepartmental advisory committee consisting of representatives of the principal government agencies concerned with scientific research. Such a committee would advise and consult with the Foundation and make recommendations to the Foundation and to the President for the coordination of Federal and Federally-financed research programs.

There are several additional provisions of H.R. 6448 which I believe to be undesirable and contrary to sound public policy; and with your permission I should like to submit a supplementary statement on those additional matters for the record within a few days. The bill was introduced and called to the attention of the Department so recently that we have not had sufficient time to consider carefully the legal effects of some of its detailed provisions.

In closing I should like to repeat that while I support wholeheartedly the general objectives of the legislation which you are considering, I cannot endorse H.R. 6448. Many of the specific provisions of this bill, and especially those which I have discussed above, will not foster the progress of free scientific inquiry. On the contrary, they will lead to an increasing monopolization of science by a small clique and operate to the detriment of small and independent business in this country.