

that it will not need to call upon large numbers of its young men in the atomic age to stand guard over the stratosphere. It will mean even more if it will be possible to stop the spread of fear, suspicion, and hate in the world that a race for atomic bomb supremacy will precipitate.

When scientists confined their attention to things like falling bodies, the origin of species, or the motions of the planets, we could afford to smile over the belief of some of their contemporaries that they were a menace to society. But when we seek to recreate elements that possibly had to disappear by radioactive disintegration before the earth originally could become habitable and to release energy at rates never before experienced by man at distances less than that to the sun, we know that we are setting loose forces that are fearful to contemplate. Freedom to carry on such investigations is accompanied by a very terrible responsibility. Very clearly it must rest on all who contribute in the slightest particular, directly or indirectly, to atomic research. This is a plea that those of us who had no direct part in the development of the bomb help those who had to carry this responsibility.

Scientists have always lost control over their inven-

tions and discoveries as soon as the creative phase was completed.

Can't we act while there is still time?

Can't the leaders in these great laboratories in which nuclear research will be carried on state publicly their opposition to further work on those aspects that need to remain military secrets?

Can't all of us in science enter the atomic age with full realization that scientific freedom must be redefined?

Can't we all make a concerted effort to help to educate people generally regarding atomic energy until the thousands of ourselves become the millions who must be convinced if international agreements are to be permanently enforced?

As evidence of our good faith, can't we get Congress to close those plants at Oak Ridge and at Hanford and keep them closed until plans for the control of their products can be worked out?

Then, can't we go to the rest of the world in the same spirit that has made collaboration in the physical sciences so effective in the past and offer all nations complete cooperation while we work to develop the constructive uses of atomic energy and the federation for world security—together?

Science Legislation

Further Notes on Science Legislation

Robert Chambers
New York University

A welcome feature in *Science* is the periodic publication of items of interest concerning the pending science legislation in Congress. The fact that such legislation was being contemplated was brought last September to the attention of workers at the Marine Biological Laboratory at Woods Hole when questionnaires were distributed by Dr. Howard Meyerhoff of the AAAS for the purpose of securing information as to the desires of scientists regarding the organization of a National Science Foundation. A widespread response in favor of the establishment of such a foundation was expressed, together with the conviction that the control of the Foundation should be primarily by the scientists themselves. Such a form of organization appeared to be best expressed in the original Magnuson Bill and not in the original Kilgore Bill, which

placed the control in the hands of a single administrator appointed by the President.

During October, hearings on Science Legislation were instituted by Senator Kilgore, who invited the participation of Senators Magnuson and Pepper and their subcommittees and also Senator Fulbright. Approximately one hundred witnesses, including scientists and other experts, appeared at the hearings, and over one thousand printed pages of testimony were taken. The Union of the American Biological Societies and the American Biological Society took active part in inviting biologists and in urging that the biological sciences be considered separately from the medical sciences. One full day was reserved for testimony on the biological sciences, and we now have assurances from both Senator Magnuson and Senator

Kilgore that in their revisions biology as distinct from the medical sciences will be considered on a par with the physical, chemical, and mathematical sciences.

Concerning the top administration of the proposed Foundation, the opinion of scientists in general has been one of favoring a board of scientists. This has persisted, in spite of the fact that some of the testimony at the hearings presented cogent reasons in favor of a single Administrator responsible to the President and the Congress.

Subsequently, the Letter to the President, drafted by the Bowman Committee and endorsing the principles presented in Senator Magnuson's Bill, was drafted and widely published (*Science*, 1945, **102**, 545). Some regarded the stand taken in the letter as uncompromising. This would be most unfortunate, since both the Magnuson and Kilgore Bills are still in committee and open to revision for the cooperative formulation of a bill which will be acceptable to governmental procedure without loss of the prerogative of free initiative in scientific research. An uncompromising attitude, fancied or real, at this stage, may jeopardize the enactment of a measure so overwhelmingly approved of in the October hearings in Washington. More recently a Committee for a National Science Foundation has been formed (see *Science*, 1946, **103**, 11, 45) claiming to sponsor no one bill but to stand for a general cooperative effort toward the realization of a Federal organization for the advancement of science in this country. The original Kilgore Bill contained several provisions unacceptable to scientists at large. The recent draft, S. 1720 (printed in *Science*, 1946, **103**, 39) is a complete revision in which most of those provisions have been eliminated. This draft is presented by the Subcommittee as a preliminary report for further comment before it is reported out of committee.

It is suggested that this draft serve as a basis for further discussion toward the enactment of a bill acceptable to scientists and Congressmen alike.

The publication of the Letter to the President by the Bowman Committee has been most valuable in awakening scientists to the implications involved in setting up a National Science Foundation. Its endorsement by so many prominent scientists has presented to the Congress and to the country how jealously the scientist maintains his conviction that scientific endeavor shall, under no circumstances, be trammled or regimented by government or by any individual.

At the same time it behooves us to assist in the formulation of a bill which comes within the framework of accepted constitutional procedure. There should be no need for dividing into two camps. We have every right to differ on details, but the proposition is so big that we surely can agree on the big principles for the embodiment of a federally sponsored foundation in which adequate freedom of scientific enterprise will be maintained.

Several suggestions come to mind for the appointment of the top administration of the proposed Foundation. One is that two panels of names be prepared by the National Academy of Sciences, which should set up a mechanism for receiving nominations from accredited scientific societies. The President might then appoint the Administrator and the Advisory Board from the two panels. It is hoped that amendments now under consideration will achieve the desired result, namely, a National Science or Research Foundation the operations of which will be guided by the experience and wisdom of scientists, and in which scientists themselves will be induced to take responsibility commensurate with their experience and wisdom.

S. 1720 vs. S. 1777

Howard A. Meyerhoff

Executive Secretary, AAAS, Washington, D. C.

S. 1720 IS UNDERGOING FINAL REVISION and redrafting, and there is every reason to believe that the bill which reaches the floor of the Senate will be acceptable to the vast majority of scientists. The bill was distributed widely in Subcommittee Report No. 7, with an invitation to submit constructive suggestions. It was evident that S. 1720 had effectively met the more serious criticisms that had been directed at S. 1285 and S. 1297, and that opposition to S. 1720 as a whole on the part of any group

would merely be regarded as obstructionism. At the same time, despite the marked improvement in the new draft, several minor provisions and at least two major ones called for further discussion.

For this purpose Senator Elbert D. Thomas, of Utah, arranged a preliminary meeting at which Messrs. Bush and Bowman discussed differences with Senators Kilgore, Magnuson, and Thomas. A more formal meeting was held on 23 January with Senator Saltonstall presiding. Although some question has