Report to the Association—1971

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The year just ended has been a period of heightened activity for the Association. There have been more active commissions and committees, there have been new committees, there have been changes in and additions to the Central Office staff, and, of course, there have been new programs and projects. At a time when its resources are more limited than they have been for some time, the Association is seeking to play a more effective role both as a broker in promoting greater cooperative activity among the several scientific and technological fields and as a catalyst in stimulating more mutually beneficial relationships between science and technology and the other segments of society. This has, of course, called for new strategies. Increasingly the costs of these activities are borne by funds specially solicited from outside the Association. Twenty years ago, 61 percent of the costs of operating the Association derived from the dues paid by the membership; in 1972, this proportion will be reduced to 31 percent. Nor does the *Science* subvention from dues ($10) meet the cost of the subscription provided each member. Again in 1972, this source of income will meet about 37 percent of the costs of publishing the magazine. The remaining monies required for the publication of *Science* come from nonmember subscriptions and advertising revenue; for the Association's other activities, from the sale of publications, meeting and investment income, and grants and contracts sought by the committees and by the Central Office staff.

The Association's current strategy for funding projects involves allocating a small amount to each commission and committee for small-scale feasibility studies. If the outcome is positive, somewhat larger amounts may be sought from the Board of Directors as seed money while the costs of full-scale implementation are sought in the form of grants or contracts. During 1971, grant funds were at $735,000, up from $450,000 in 1970. A comparable amount is in hand for 1972, and there is hope that an additional $300,000 will be added in the course of the year.

The 1972 Budget

A balanced budget for 1972, approved by the Board of Directors at its meeting of 9 December, totals $6,009,000, of which $832,000 are associated with grants. It is presented as Table 1. The reader will note that the summary of expenses is organized in terms of the activities they fund. Committees are listed under the staff departments that support their programs.

Membership

In recent years the Association's membership has regularly increased by some 6,000 new members per year. Membership reached its peak of 133,000 in 1970 with an increase of approximately 5,000, and 1971 saw a decrease to about 130,500 (see Table 2). This drop appears to have been associated with both the increase in dues passed by Council in January 1971 and the economic recession experienced by scientists and engineers during the year.

Publications

During 1969, a new section, "Research Topics," was introduced in *Science*. This consists of a series of reviews of areas of research that are currently of special interest or significance, written in a fashion that can readily be grasped by the full readership of the magazine. Two scientist-writers were added to the staff in 1971 to conduct the program, and the addition of one more is planned for 1972.

European readers may now have their copies of *Science* carried by air and posted in Amsterdam by special arrangement with KLM Royal Dutch Airlines.

The *AAAS Bulletin* has been given a new format and expanded to five issues per year in order to keep the membership better informed of Association affairs. Robert A. Potter serves as editor.

The second edition of *Science for Society: A Bibliography* appeared in 1971. Prepared by Professor John A. Moore, University of California, Riverside, this is a 76-page document identifying references on a wide range of topics included under the science and society rubric. Published last summer, already some 9500 copies have been sold. The Commission on Science Education plans to bring out a new edition annually.

The third edition of the *AAAS Science Book List*, edited by Hilary Deason, appeared in 1970 and is experiencing a brisk circulation. The third edition of the *AAAS Science Book List for Children* is scheduled to appear this spring. Meanwhile the Commission on Science Education has published an annotated reading list of some 400 science books for children for use in connection with the new nontextbook programs.

AAAS published only one symposium volume during 1971. *Research in the Antarctic*, edited by Louis O. Quam, director of the Office of Polar Programs of the National Science Foundation, is the first single-volume report of the extensive research conducted in the Antarctic since the International Geophysical Year. Two symposia organized by the Committee on Arid Lands, *Urbanization in the Arid Lands* and *Polar Deserts*, will be brought out by the Texas Tech University and the University of Arizona presses, respectively.

Two new newsletters joined the list of AAAS publications in 1971: *Science for Society: Education Review* is devoted to information on environmental education and the *Youth Council Newsletter*, prepared by Alan McGowan and Richard A. Scribner, has been circulated to about 400 young scientists.

Finally, a new program planned in 1971 is scheduled to be introduced soon. *Science Seminars* will consist of integrated sets of reprints on topics of current interest and significance se-

lected from among papers that have appeared in *Science*. Selections will be made and commentary prepared by distinguished scientists. Each set will be presented loose in an attractive pocket-type folder for easy classroom or study-group use.

The Annual Meeting

Dr. Gaylord P. Harnwell, president-emeritus of the University of Pennsylvania, served as general chairman of the 1971 Annual Meeting. The program in size and scope was comparable to that of the 1970 meeting. Slightly fewer than 300 half-day sessions were presented. A special feature of the meeting was a week-long symposium on "The Sciences in the Service of Urban Philadelphia." Other programs of particular interest were a symposium on student research, which brought together some 500 undergraduates who participated in the NSF "Student Originated Research Program" during 1971 and a series of workshops conducted by the Youth Council on the role of young scientists in society.

The 1972 Annual Meeting, which ends the Association's tradition of Christmas-week meetings, will be held in Washington, D.C. Dr. S. Dillon Ripley, secretary of the Smithsonian Institution, has graciously consented to serve as general chairman.

Television and Radio

After several years of experimentation, the television format that has developed for the meetings, in addition to that involved with news coverage, consists of a series of five 1-hour programs, live and in color, that are presented over the nationwide network of the Public Broadcasting System. Presented one per evening, for 1971 they were titled *Science '71: A Report to the Nation* and included "Can Science Solve Problems of the City?"; "Quality of Life, Can It Be Measured?"; "Power"; "Science and the Reality of Politics"; and "In Our Own Image," a program on the behavioral sciences. All were narrated by AAAS's television consultant, David Prowitt, executive producer of N.E.T. and recent winner of the American Psychological Foundation's National Media Award for his documentary *The Mind of Man*.

Radio made its first appearance at a AAAS meeting last year when National Public Radio provided 5 days' coverage totaling 40 hours. This included a series of half-hour, in-depth interviews with distinguished participants. Plans have been made to present these latter as a special series supplementing the regular 1971 audiotape series emanating from the Philadelphia meeting.

During 1971 the Committee on Public Understanding of Science commissioned a comprehensive study of the role of television in advancing the public's understanding of science. Supervised by Dr. Lloyd Morrisett, president of the Markle Foundation, and conducted by David Prowitt, it recommended that AAAS embark on a large-scale communication effort in this

Table 1. AAAS budget for 1972.

Revenue	
Dues of annual members	$1,980,000
Life members' subscriptions	41,000
Nonmember subscriptions	540,000
Subscriptions: *Science Books*	32,000
Advertising in *Science*	2,000,000
Sales	
Symposium volumes	90,000
Reprints from *Science*	120,000
Back issues of *Science*	12,000
Binders and emblems	7,000
Book lists	65,000
Audiotapes	60,000
Special reprints	25,000
Meeting and exposition	
Registrations	70,000
Booth space	25,000
Program advertising	4,000
Contributions—local committee	10,000
Affiliates	5,000
Rental receipts	7,000
Royalties	18,000
Receipts from grants	
Direct costs	732,000
Indirect costs	100,000
Income from investments	
Dividends and interest	60,000
Other income	6,000
Total revenue	$6,009,000
Expenses	
Administration (Executive Office)	
Staff and operations	$ 174,200
Board of Directors	14,450
Contingencies	25,000
AAAS sections	24,550
Committees	
Council Affairs	2,500
Nominations and Elections	1,050
Arid Lands	2,600
Scientific Freedom and Responsibility	2,000
Minorities	3,400
Environmental Alterations	22,000
Science seminars	5,000
Discretionary fund	5,000
Total—Administration	$ 281,750
Business Office	
Staff and operations	$ 252,300
Member recruitment	151,100
Member records	112,600
Addressing	82,300
Sales	28,900
Building maintenance and expense	
Staff and operations	127,900
Depreciation of building and equipment	47,000
AAAS Divisions	23,800
Mexico City meeting	27,500
Miscellaneous expense	19,000
Total—Business Office	$ 872,400
Science	
Staff and operations	$ 496,450
News and Comment	166,000
Research Topics	46,000
Printing and mailing *Science*	2,035,000
Guide to Scientific Instruments	
Staff and operations	148,150
Printing and mailing	110,000
Reprints to authors	
Staff and operations	17,900
Printing	40,000
Advertising—cost of sales	500,000
Total—*Science*	$3,449,500
Communications	
Staff and operations	$ 130,400
Sales promotion	24,700
Committees	
Publications	950
Public Understanding of Science	2,050
Annual Meeting	
Television broadcasts	29,000
Press service	20,000
Program	15,000
Science Film Theater	1,250
Symposium volumes	44,100
Science Books	34,350
Book lists	34,950
AAAS Bulletin	30,000
Science Education News	4,800
Audiotapes	40,700
Emblems and binders	6,000
Special reprints	15,000
Third party reprints	2,000
Exhibits	7,000
Libraries	2,850
Weekly science series	2,400
Total—Communications	$ 447,500
Education	
Staff and operations	$ 604,300
Science—A Process Approach	87,700
International Clearinghouse of Information	40,000
Association of Academies	2,400
Total—Education	$ 734,400
Annual Meeting	
Staff	$ 76,300
Operations	86,500
Total—Annual Meeting	$ 162,800
Science and Society	
Staff and operations	$ 28,200
Committees	
Science in the Promotion of Human Welfare	13,800
Industry, Technology, and Society	7,500
Youth Council	9,000
Regional Centers	2,000
Total—Science and Society	$ 60,500
Total expenses	$6,008,850
Net revenue	$ 150

medium. The Association is at present seeking foundation funds for a comprehensive feasibility study of this topic. Substantial progress has already been made toward this goal.

Science Information Exchange

The Commission on Science Education has continued its Science Education Information Center, which handles individual requests for information from teachers and students.

During 1971 the Association, in cooperation with the University of Maryland Science Teaching Center, conducted for the eighth year the International Clearinghouse on Curricular Developments in Science and Mathematics.

Finally, in the course of the past year, the Committee on Public Understanding of Science commissioned a study of the use of the printed media in its program of better understanding of science. Supervised by Gerard Piel, publisher of the *Scientific American*, and conducted by Richard Winslow, director, *Starting Tomorrow* programs, its recommendations include a clearinghouse for publications useful to science teachers to be used in conjunction with special television offerings.

Science Education

The first revision of *Science: A Process Approach*, the major program of the Commission on Science Education, since its inception in 1963 is now under way. In addition, the Department of Science Education of AAAS has in preparation a series of study guides for high school teachers of science. Topics included to date are air pollution, population, health and nutrition, peace and the environment, man and his environment, and science, technology, and society. Last spring the Commission published guidelines for the preparation of high school teachers of science and mathematics, culminating a 15-month Commission study.

During the course of 1971, the Department of Science Education conducted a number of seminars, lectures, and conferences on science or science education. The most ambitious were the Chautauqua-type Lectures for College Teachers. This program, which will be conducted again in 1972, consists of nine 2-day presentations at each of 12 centers, both spring and fall, with a project assignment to be carried out in the interim. In all, some 29 scientists are involved as lecturers.

The Visiting Foreign Scientists program last summer brought 17 European scientists to the United States to spend 7 weeks lecturing at summer institutes sponsored by the National Science Foundation.

The AAAS Holiday Science Lectures are modeled after the Christmas Lectures offered by the Royal Institution of Great Britain for many years. They consist of 2-day series of lectures presented to about 400 especially gifted high school students at each of five sites during the Christmas or spring vacation periods. In 1971 the lecturers were Dr. R. H. Bing at Fort Worth, Dr. Kip Stephen Thorne at Phoenix, Dr. Thomas Eisner at Chicago, Dr. Carroll Williams at Portland, and Dr. Seymour Kety at Boston. In addition, a pilot series on genetic manipulation was conducted in March at the Prairie School, Racine, Wisconsin. And, as a result, the Commission is contemplating a full program of such lectures on various aspects of the science and society theme.

For the past 9 years, AAAS, in cooperation with the American Association of School Administrators, has conducted two seminars on current developments in science. The leaders are distinguished scientists and the participants are school systems administrators. The 1971 seminars were held in Seattle and Washington, D.C.

Finally, two conferences were held during 1971 with faculty members from black colleges and, from this activity, plans are being evolved for a program of services that will aid in the improvement of science programs in these institutions.

Studies of the Physical Environment

The work of the AAAS Herbicide Assessment Commission, which attracted great attention during 1970 and which had a major influence on the decision of the Department of Defense in the early spring of 1971 to terminate the use of these compounds in Vietnam, was completed last year. The full report is in preparation and will be issued in 1972.

Last year the Committee on Environmental Alterations carried out, through the work of a study group made up of Drs. Dean Abrahamson and Ralph Hofmeister of the University of Minnesota and Arthur Squires of the City University of New York, the major portion of its study on the environmental aspects of power generation in the United States. The Committee is also conducting a study of pollutants in relation to major changes in industrial production in the United States since 1946. This work will result in a series of tables and graphs that will be useful to workers in both the fields of environmental research and environmental control.

The Committee on Science in the Promotion of Human Welfare will review the status of current activity in the field of air pollution in order to determine whether a reactivation of the Air Conservation Commission during 1972 is warranted.

The Committee on Arid Lands, in addition to its program of annual symposia, initiated during 1971 a series of position papers on the development of arid lands. The first, on large-scale water importation into the arid regions of the United States, has been presented to the Board of Directors and was published in the 11 February 1972 issue of *Science*.

The Commission on Science Education last year sponsored the organization of a Consortium of Regional Educational Councils. The Consortium, which to date includes eight centers located, respectively, in Atlanta, Bellingham (Washington), Cleveland, New Canaan (Connecticut), the State of New Jersey, Oak Ridge, Omaha, and San Diego, is devoted to improving programs in environmental education, through the exchange of information, and to stimulating the formation of other centers to carry on the same function.

Science and Social Problems

Last fall the Association expanded its Congressional Science Seminars, conducted jointly with the Brookings Institution, from a spring series of six seminars to a fall and spring series totaling ten presentations. The program of seminars for science attachés has been similarly expanded.

The Central Office has begun a series of informal seminars on employment and career opportunities for scientists and engineers. These meetings, the first two of which were held in May and October, bring together those persons in industry, government, and the scientific and engineering associations who have special responsibilities in the area of

manpower planning to exchange information and coordinate activities. The Association arranged a special program on the employment and utilization of scientific manpower for the Philadelphia meeting.

The Committee on Science in the Promotion of Human Welfare sponsored a panel discussion on the use of scientific information in policy-making at the Philadelphia meeting. It has received approval of the Board of Directors to seek funding for and to initiate a program of internships in public service activities for scientists. Through this program it is expected to interest persons with scientific and technical training in careers in congressional staff service and as professional staff officers in state and local government settings. It is hoped that such a program can be gotten under way late in 1972. The Committee also expressed interest in undertaking a project in the field of health care delivery and commissioned a position paper, by Dr. Richard Kessler, associate dean, Northwestern University Medical School, as a basis for its planning.

The Committee on Scientific Freedom and Responsibility was organized in October 1971 and has undertaken a study of cases, both real and hypothetical, that represent abridgment of scientific freedom or abrogation of scientific responsibility, in preparation for its task of formulating policy guidelines in this area. As part of this work, Central Office staff prepared a compendium of policies now in use among the Association's affiliated societies and conducted a 1-day conference of staff officers of some of those societies to exchange information.

The Committee on Minorities in Science was organized in the summer of 1971 and has, in the ensuing months, identified a five-element program for implementation in 1972. This includes an editorial in *Science*, a major conference on minorities in science, the collection of information on the employment of minority scientists, the development of a program of information dissemination on this topic, and communication with appropriate government officials concerning implementation of the Affirmative Action Program in institutions of higher education.

Table 2. AAAS membership.

Changes during 1971		
New members		22,686
Losses		
Deaths	491	
Resignations	4,808	
Dropped for nonpayment of dues	20,276	25,575
Net decrease during 1971		2,889
Totals as of 31 December 1971		
Annual members in good standing		120,115
Graduate student members		6,238
Life and emeritus members		4,122
Total active membership		130,475

AAAS and International Science

After discussions with leading Mexican scientists begun in March, agreements were reached in August for AAAS and the Council of Science and Technology of Mexico to take initiatives in arranging a Conference on Science and Man in the Americas to be held in late June and early July of 1973. The conference will involve scientists and engineers from throughout the hemisphere and from the full spectrum of disciplines in discussions both of basic science and of the applications of science and technology in Latin American settings.

Discussions begun in 1969 with Znaniye, the Russian counterpart of AAAS, have resulted in formal agreements, reached last June, to exchange four scientist-lecturers each year. Lecturers will address both scientific and lay audiences. Academician Vadim Sergeevich Semenov of the Presidium of the Soviet Sociological Association addressed the Chicago meeting. Dr. Victor Michailovich Zhdanov, Doctor of Medicine and Academician of the Academy of Medical Sciences of the U.S.S.R. and director of the Institute of Virology in Moscow, was the Association's guest in Philadelphia. Extramural funds have been identified to support the Association's participation in the exchange for the next 3 years.

The Association's Committee on Arid Lands has been invited to participate in planning a U.S.-U.S.S.R. Workshop on Arid Land Agriculture proposed for 1973. The Committee has also been invited by the American Academy of Arts and Sciences to help prepare plans for an arid lands institute of Iran. The Argentine Universidad Nacional del Sur has sought the Committee's assistance in developing contacts with arid lands institutions in the United States.

The Youth Council, in cooperation with the Committee on Environmental Alterations, the Center for the Biology of Natural Systems, and the John Muir Institute for Environmental Studies, conducted a conference on the environmental sciences and international development at Philadelphia. Particular attention was given to the problems associated with the introduction of advanced technology to developing nations. Participants were graduate students from these countries who are in residence in American universities.

The Board of Directors has approved a proposal to establish an Office of International Scientific Affairs, contingent upon the availability of funds, and effort is now being directed toward securing foundation support for planning.

In sum, in a period of genuine financial constraint the Association, mindful of the importance of fiscal responsibility, has made genuine progress toward the goals explicit in its Objects.