er forecasting for arid lands, was given by Michael H. Glantz. The Committee on Desert and Arid Zones Research held a symposium on the Origin and Evolution of North American Deserts. Max P. Dunford became President-Elect of the SWARM Division.

The Pacific Division published its first symposium volume, San Francisco Bay: The Urbanized Estuary, supported in part by the U.S. Geological Survey and including 25 selected contributions on the Bay's history and studies of the geological, hydrological, and life support systems. In preparation were other symposium volumes on Mosses of America and Galápagos Organisms. Other books under way are Frontiers of Geological

Exploration of Western America, Late Cenozoic History of the Pacific Northwest, and San Francisco Bay: Use and Protection, with partial grant support from the U.S. Geological Survey, U.S. Fish and Wildlife Service, and Ecological Analysts, Inc.

The Pacific Division's Annual Meeting at the Davis campus of the University of California drew 1100 attendees and 425 papers given at technical sessions arranged by 13 affiliated societies and sections. Plans for the 1981 meeting at Eugene, Oregon, include emphasis on hazards and environmental impacts of volcanic activity. Beatrice Sweeney is President of the Pacific Division, and Robert Bowman is President-Elect.

Development Efforts

During 1980, AAAS received 33 grants, contracts, or corporate contributions amounting to \$1.75 million. Federal agencies made 18 grants amounting to \$1.7 million, while corporate support came to about \$50,000. Nearly all of the external support was earmarked for particular programs or projects. Two things should be said in this connection. First, while federal funds are coming to AAAS in substantial amounts, they aggregate less than 10 percent of the Association's gross revenues. Second, the level of corporate contributions to AAAS, restricted and unrestricted, is far short of what it ought to be.

AAAS Council Meeting, 1981

Catherine Borras

The AAAS Council held its 1981 meeting on 7 January in Toronto, Ontario, Canada, in the Essex Room of the Sheraton Centre, with 55 of its 86 members in attendance at the morning session and 42 at the afternoon session. President Frederick Mosteller presided.

AAAS Activities, 1980

William D. Carey, executive officer, gave a few highlights from his report of 1980 activities, which appears on pages 916 to 921 of this issue, and presented the operating budget for 1981 (page 919). He expressed confidence that Science 81 magazine, which has reached a circulation of 500,000 a year ahead of schedule, would hold its own against mounting competition from commercial magazines, at least in terms of setting a qualitative standard in communicating with the public about science and technology. He complimented Allen L. Hammond and his editorial staff on their performance. Another significant development in 1980 was the Board's decision to have the AAAS play a more active role in the area of science and engineering education and citizen literacy. F. James Rutherford has been appointed as the Board's adviser on science education. Still to be resolved is the Association's housing problem. With staff now situated in three different buildings, management is difficult and heavy rental costs are being incurred. A search for a new headquarters site in Washington or the near vicinity is under way.

Elections

The election of J. Thomas Dutro, Jr., as Secretary of the Section on Geology and Geography (E) was announced. Results of the 1980 general and electorate elections were published in the 5 December issue of *Science*. Lists of AAAS officers, staff, Council and committee members, and representatives for 1981 follow this report.

Affiliated Organizations

The Council was informed that four organizations—the American Association of Pathologists, the American College of Chest Physicians, the American College of Gastroenterology, and the Forum for the Advancement of Students in Science and Technology—had with-

drawn from affiliation. The American Speech and Hearing Association has changed its name to American Speech-Language-Hearing Association.

As new affiliates, the Council elected the Society for Psychophysiological Research and the Vermont Academy of Arts and Sciences, bringing the number of affiliated organizations to 284.

The Society for Psychophysiological Research was founded in 1959 to foster research on the interrelationships between the physiological and psychological aspects of behavior. It has some 800 members, holds an annual convention featuring primary research reports and integrative lectures, and publishes a bimonthly journal, *Psychophysiology*, consisting of primary research reports, theoretical reviews, technical notes, and occasional book reviews.

The Vermont Academy of Arts and Sciences, which has over 200 members, was established in 1965 to promote scholarship and encourage achievement in the arts, sciences, and humanities. It holds a full-day public meeting in different sections of Vermont at least once a year, an intercollegiate symposium in the spring, and a series of local meetings. It publishes a monthly *Newsletter* and two occasional papers per year.

Membership

Carol Rogers, head of membership recruitment and public information, reported that membership has grown modestly but steadily during the past several years, despite annual dues increases to

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keep up with inflation. More than 28,000 new members joined in 1980, a gain of 16 percent over 1979, bringing the total membership to 131,582. She attributed the number of new members gained to an aggressive recruitment campaign, noting that nominations from members continue to give the best results. While the response to rented lists has also been good, there is no cost-effective way to delete the names of AAAS members from lists that are not on computer tapes. Ms. Rogers suggested that when members receive invitations to join the AAAS, they pass them along to colleagues who are not members. Offsetting the success of the recruiting effort is the worrisome loss of 25,000 or more members every year. In the hope of arresting this trend, a study of the factors affecting membership retention is being conducted.

Fellowship

As Fellows of the Association, the Council elected 453 members who had been proposed for that honor by the Section Committees of the 21 AAAS Sections, by groups of three Fellows, and by the Executive Officer (see the list on pages 922 and 923). A call for 1981 nominations was published in the 7 November issue of *Science*, pages 627 and 628.

Science

Philip H. Abelson, editor of *Science*, commended the scientific community for its remarkable help and cooperation when called upon to give advice or review manuscripts, an advantage enjoyed by very few magazines. At the same

time, Science operates under a number of constraints. With a staff one-tenth the size of other weeklies, it publishes 50 percent more material while maintaining a high level of scholarship, judgment, and accuracy. Another pressure comes from differences of taste and opinion among the diverse membership as to what Science should publish. Dr. Abelson described the various steps involved in processing and evaluating the constant flood of contributed material. The magazine can accept only about 25 percent of the 3500 reports received each year, and thus must annually disappoint some 6000 authors and coauthors.

Science 81

Allen L. Hammond, editor of *Science* 81, reported that circulation has passed

Robert A. Helliwell

Joseph J. Hickey

AAAS Members Elected as Fellows, 7 January 1981

Robert H. Abeles Joel Abramowitz Willis A. Adcock Warren O. Addicott William G. Agnew E. John Ainsworth A. Louis Allred Eugene N. Anderson, Jr. Kinsey A. Anderson Brian Andreen J. Lawrence Apple Ronald D. Archer Edward M. Arnett Gustaf O. S. Arrhenius Harold L. Atwood Thomas S. Austin Robert A. Baker Gerald J. Bakus Jack E. Baldwin Jack Baranson Jon Charles Barlow Robert D. Barnes Gilbert Alfred Bartholomew Elexis C. Bashaw Hyman Bass Allan W. H. Bé James K. Beattie C. Gordon Bell Arnold J. Bendich Albert F. Bennett Allan P. Bennison Dorothy L. Bernstein Marvin H. Bernstein R. Stephen Berry Michael Berliner Bever Peter J. Bickel Albert D. Biderman Eugene W. Bierly Sally Binford Charles K. Birdsall Robert J. Birgeneau Stephen H. Bishop Charles R. Blem

Jeanne H. Block

Arthur L. Bloom Sol R. Bodner Russell A. Bonham John T. Bonner Michel Boudart David R. Boylan Marilyn C. Bracken William F. Brinkman Allan H. Brown Edward M. Bruner Stephen G. Brush John David Bukry W.S. Bullough Harold E. Burkhart Joan N. Burstyn Adolf Busemann Joost Businger Martin A. Buzas John V. Byrne Jack George Calvert L. Leon Campbell Charles R. Cantor John D. Caplan Cvnthia Carev James E. Case N. John Castellan, Jr. Emery N. Castle C. E. Challice David Chandler Joseph Church Ralph J. Cicerone Henry R. Clauser Alan F. Clifford H. Edward Clifton Gerhard L. Closs Mary Elizabeth Clutter James S. Coleman George A. Collier Ralph E. Comstock Kenneth A. Connors C. Sharp Cook Ian M. Cooke Leon N. Cooper John B. Cornell

Robert F. Cotellessa Ernest D. Courant Raymond G. Cragle J. Kenneth Craver Joe S. Creager James Cronshaw John H. Crowe Clark Cunningham Richard G. Cunningham C. Chapin Cutler W. Grant Dahlstrom Patricia DeCoursey Donald D. DeFord Robert K. Dentan Charles H. DePuv Alexander J. Dessler George DeVos Parke A. Dickey George E. Dieter Thomas M. Donahue Robert G. Douglas John E. Dowling John E. Duberg J. D. Dunitz James L. Dve John S. Edwards Bruce R. Ekstrand Farouk El-Baz Bruce F. Eldridge Cesare Emiliani James T. Enright Gisela Epple Luther E. Erickson James H. Espenson Karl Esser Alexandre Fabiato Frank H. Farley Giovanni Gene Fazio Roger Fedde Hector R. C. Fernandez Sidney Fernbach Alexander L. Fetter Morris E. Fine Karl F. Finney

Alfred G. Fischer Richard S. Fiske Everly B. Fleischer George J. Flick, Jr. Klaus G. Florev Heinz G. Floss Charles A. Fowler Hans Frauenfelder Charles O. Gardner W. Lawrence Gates Michael S. Gazzaniga Eleanor J. Gibson Charles C. Gillispie Robert N. Ginsburg Joseph A. Giordmaine Peter E. Glaser David M. Golden Stanford Goldman Rae S. Goodell Harold Goodglass Philip B. Gough Lois Graham Richard Evans Grant Russell N. Grimes Roger Guillemin Robert C. Gunning John W. Gutknecht Uri Haber-Schaim Irvine R. Hagadorn Jack P. Hailman Yacov Y. Haimes Harold T. Hammel George S. Hammond Philip C. Hanawalt John C. Hancock Pembroke J. Hart Frederick C. Hartman Juris Hartmanis Julius J. Harwood Audrey E. Haschemeyer R. D. Haun, Jr. Joyce W. Hawkes John R. Hayes Miles O. Hayes

David V. Hinkley James L. Hoard Luc Hoffmann Henry S. Horn John Edward Horton Herbert O. House Herbert J. Howe Stephen P. Hubbell Benjamin Huberman John R. Huizenga Philip S. Humphrey George L. Hunt George R. Irwin Richard H. Jahns Frances C. James Paul C. Jennings Harold S. Johnston Jiri Jonas Joseph B. Kadane Herbert D. Kaesz Jane Butler Kahle W. Barclay Kamb Ann E. Kammer William H. Kanes Samuel Karlin James R. Karr Frederick Kaufman H. D. Keith O. Lewin Keller, Jr. Arthur Kelman Larkin Kerwin Carl Kisslinger Cornelis Klein Jacob Kline Masakazu Konishi Sylvan Kornblum Adriaan Kortlandt Leslie S. G. Kovasznay Donald Harris Kropf Ernest S. Kuh LaVerne D. Kulm John Eugene Kunzler

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the 500,000 mark and conversion from six to ten issues a year has been accomplished. The renewal rate of more than 50 percent is good for a magazine that goes to a consumer audience. A Chinese version is being published with AAAS cooperation and plans are proceeding for an Italian edition, with AAAS and Fabbri as copublishers. Newsstand sales in 50 major domestic markets will begin in a few months. Professional photographers are eager to have their work appear in Science 81, which has been compared favorably to the National Geographic for quality of printing. As its best strategy in meeting competition from commercial science and technology magazines, the staff will continue to maintain high editorial and graphic standards. Increasing attention will be given to publishing material in controversial areas of concern to the public.

Bylaw Amendments

The Council approved a revision of the Alaska Division's Bylaws and adopted amendments to AAAS Bylaw Articles VII and VIII to remove restrictions on the number of members the Board of Directors may appoint to its Executive Committee and to the Committee on Investment and Finance. In addition, the Council voted to change the name of Section K from "Social and Economic Sciences" to "Social, Economic, and Political Sciences." Implicit in this action was the amendment of Bylaw Article III, which lists the Sections by name.

Resolutions

Eight resolutions were adopted by the Council, as follows:

1) Role of the AAAS Working Group on Nuclear Arms Control and Disarmament, submitted by the Committee on Council Affairs:

Whereas the Council on January 7, 1980, adopted a resolution on behalf of nuclear arms limitation and the adoption of international nuclear arms and testing agreements, and

Whereas a major theme of the 1981 Annual Meeting, pursuant to said resolution, is on "Directing Science Towards Peace," and

Whereas the achievement of peace calls for balanced emphasis on national security as well as arms control,

Therefore be it resolved that the Working Group on Nuclear Arms Control, provided pursuant to said resolution, shall constitute a forum for examining the complex issues arising from the dual imperatives of pursuing nuclear arms control with disarmament and assuring an effective national security capability.

2) Weapons of Mass Destruction, submitted by the Committee on Council Affairs:

John Terborgh

Keith A. Kvenvolden David LaBerge J. J. Lagowski Joseph B. Lambert Murray A. Lampert Neal F. Lane Cooper H. Langford, III Louis John Lanzerotti Jean Kautz Lauber Benjamin Lax John W. Layman Edwin T. Layton, Jr. Martin Lessen H.W. Lewis Philip Lieberman Jon C. Liebman Ulric S. Lindholm William Carl Lineberger Hsin Yi Ling Edward S. Lipinsky Stephen J. Lippard Jere H. Lipps William H. Littlewood Daniel A. Livingstone Harald Löe Robert G. Loewy Edward J. Lofgren Edward Lohse Alan Lomax Julius London Richard T. Louttit Lois F. Lunin Gary E. Maciel Rosalie F. Maddocks James I. Magid Bruce H. Mahan Marvin H. Malone Joseph M. Marchello Stanley V. Margolis Richard N. Mariscal Hubert Markl James A. Marshall Paul C. Martin Warren E. Masker William H. Matthews, III Robert H. Maybury Earle F. McBride

Gordon W. McBride Davis B. McCarn John McCarthy Perry L. McCarty J. William McGowan Ross E. McKinney Anne McNabb David McNeill Martha T. Mednick Antony Henry Melcher Karl Menger Robert L. Metcalf Thomas J. Meyer Doren Mitchell Linn Frederick Mollenauer James A. Momper Burt L. Monroe, Jr. C. Bradley Moore H. Dana Moran Richard Y. Morita John B. Morrill George Daniel Mostow Laura Nader George Harvey Nancollas Gerry Neugebauer Lucile F. Newman William A. Nierenberg Alfred H. Nissan Salil Kumar Niyogi Val Nolan, Jr. Larry C. Oglesby Bruce S. Old Ingrith D. Olsen David H. Ost Wendell H. Oswalt Amado M. Padilla John Palka Allison R. Palmer Peter Pang Jean-Guy Paquet Robert B. Payne Stanton J. Peale Dallas L. Peck Jean-Claude Pecker Elizabeth Kay Perryman R. E. Peter Rita W. Peterson

George T. Philippi Aris Phillips Norman E. Phillips Theodore H. H. Pian Eric R. Pianka Betty H. Pickett Edward B. Picou, Jr. Sidney K. Pierce Robert A. Plane Carl Edwin Polan J. C. Polanyi Yeshajahu Pomeranz Samuel N. Postlethwait Alvin Francis Poussaint S. James Press M. A. Preston Ronald F. Probstein William Robert Purcell John A. Quinn Senta A. Raizen John O. Rasmussen Dennis G. Raveling F. Everett Reed Arthur G. Rempel Robert A. Rescorla Eli Reshotko Lauren B. Resnick Warren L. Reynolds James R. Rice Robert C. Richardson Hans Ris Marcel Roche Kelvin S. Rodolfo Christopher A. Rodowskas, Jr. Peter R. Rose Bryant W. Rossiter Aryeh Routtenberg John B. Rowell Louis N. Rowley, Jr. George Rudinger Christopher Thomas Russell Wesley C. Salmon Howard L. Sanders John J. Sauk, Jr. Samuel M. Savin Berta Scharrer Paul Schleyer

Claude H. Schmidt Roland W. Schmitt Gary D. Schnell Roger W. Schvaneveldt Robert Blackburn Scott, III Alan Searcy Emilio G. Segre Eugen Seibold Adolf Seilacher James Serrin Irving Shain Ira L. Shannon Burton L. Shapiro John Sheehan Herman E. Sheets Richard T. Shield George C. Shoffstall, Jr. Leon T. Silver Howard E. Simmons Dorothy M. Skinner Lynwood S. Smith Merritt Roe Smith Stephen J. Smith Sigmund Snelson James N. Snyder Otto T. Solbrig Albert H. Soloway Frank W. Stead Johann Steiner Gunther S. Stent Theodor D. Sterling Milton H. Stetson Audrey Stevens Joseph C. Stevens Stephen M. Stigler Bill A. Stout Melville B. Stout Felix Strumwasser Nobuo Suga $Jerold\,L.\, \widetilde{Swedlow}$ Lynn R. Sykes Alexander J. Tachmindji Maurice J. Tauber Jan Tauc R. E. Taylor John M. Teem

Lewis M. Terman Jørn Thiede Henry George Thode George R. Tilton M. Nafi Toksoz $Svein\,Utheim\,Toverud$ John W. Townsend Michel Treisman Vance A. Tucker Fred W. Turek William Thomas Tutte Seiya Uyeda Tjeerd H. van Andel Partab T. Varandani Lauri Vaska Geerat J. Vermeij Anne M. K. Vidaver Dorothy B. Vitaliano Stephen A. Wainwright Lewis E. Walkup J.T.Wallmark John P. Walters Thomas Wartik Warren M. Washington Dean A. Watkins George D. Watkins Morris Wayman Hans F. Weinberger Malcolm P. Weiss Naomi Weisstein John H. Welsh Oswald Werner Charles Wert Jane A. Westfall Kenneth Wexler Louis A. Wienckowski Fred E. Wilson Sarah Ann Woodin Leo Yaffe Leo Young Jerrold H. Zar Howard E. Zimmerman Jerold J. Zuckerman Bruno J. Zwolinski Eugene Zwover

Whereas history has shown us that any weapons system developed by any nation will result in the development of a substantially similar system by others, thus tending to erode even the limited stability of reciprocal deterrence and to diminish the security of all,

Therefore be it resolved that the AAAS recommends that all nuclear weapons states recognize the appalling risk that weapons of mass destruction impose on all peoples and nations, and work conscientiously toward reciprocal initiatives to reduce reliance on weapons of mass destruction.

3) Science and Engineering Education, submitted by the Board of Directors:

Whereas the advancement of science and engineering depends fundamentally on both the quality of education and an informed citizenry, and

Whereas the American Association for the Advancement of Science has a responsibility to foster excellence in the education of scientists and engineers while enhancing understanding of science and technology by the public at large, and

Whereas the scientific and engineering communities have long been concerned that serious and worsening deficiencies exist in science and engineering education, including precollege science education and college science education for citizens, and

Whereas a Cabinet-level report to the President of the United States notes that for the past fifteen years there has been a shrinking of our national commitment to excellence and international leadership in science, mathematics, and engineering, and

Whereas the American Association of Engineering Societies has adopted a position statement on engineering education and an action program,

Therefore be it resolved that the Board of Directors and Council of this Association

- (a) Pledge this Association, in partnership with its affiliated science and engineering societies, to a full measure of effort to reverse the damaging decline of science and engineering education in the United States;
- (b) Urge the President and the Congress of the United States to address the need for a new national commitment to excellence in science and engineering education for all Americans
- (c) Direct the president of the Association to convene a consultative conference of heads of affiliated societies with the aim of advancing science and engineering education in the United States in the 1980s; and
- (d) Direct that a major theme of the 1982 Annual Meeting of the AAAS be "Toward a National Commitment to Educational Excellence in Science and Engineering for All Americans."
- 4) Reestablishment of the President's Science Advisory Committee (PSAC), submitted by the Board of Directors:

Whereas science and technology are strategic elements of U.S. policy-making on domestic and foreign issues that bear on improving our living standards, promoting domestic tranquility, defending our borders, and seeking arms limitation agreements; and

Whereas policy choices transcend the mis-

sions of individual federal agencies and programs and require improved measures and criteria to support national decision-making; and

Whereas sufficiently broad and independent scientific expertise cannot be provided solely in the White House staff or the National Security Council or the Office of Management and Budget; and

Whereas the President's Science Advisory Committee during its 22 years of existence effectively provided such scientific and engineering advice at the highest level of government.

Therefore be it resolved that the AAAS urges President-Elect Reagan to reestablish the PSAC, to assist him and the full-time Science Adviser to the President, confident that this action would benefit the nation, strengthen the Presidency, have the support of the Congress, and encourage the scientific and engineering communities.

5) Human Rights and Scientific Freedom, submitted by the AAAS Committee on Scientific Freedom and Responsibility.

Whereas human rights and scientific freedom are closely linked, and both of them remain under attack and continue to deteriorate in many countries throughout the world, and

Whereas the AAAS Workshop on Scientific Cooperation and Human Rights in the Americas, meeting at the same time as the AAAS 1981 Annual Meeting in Toronto, with the participation of numerous scientists from Latin America and North America, has expressed deep concern about the deterioration of human rights and scientific freedom in a number of countries in Latin America, and in particular the continued detention of scientists, engineers, and medical professionals as well as many other political prisoners, in many cases without charge or trial and in conditions of great physical hardship and torture; the deterioration of the quality and availability of scientific education at all levels; and the dismissal of a large number of scientists from teaching and research posts, accompanied by a general decline of academic and scientific freedom, and

Whereas the lack of scientific freedom and the attack on human rights has become a chronic as well as a currently urgent problem, requiring the exploration of new initiatives as well as continued response to attacks on individuals as they occur,

Therefore be it resolved that AAAS, as a matter of high priority, extend and intensify its efforts to defend and advance both scientific freedom and basic human rights and to condemn attacks on them, and that it urge its affiliated societies and other organizations and individual scientists to become more actively involved in these matters.

6) Arctic Science Policy, submitted by T. Neil Davis:

Whereas the Arctic and North Pacific regions are important to the nation as producers of energy and food, and

Whereas the Arctic and North Pacific regions are important sites for the study of environment under extreme climatic conditions and for the study of unique geological and biological phenomena,

Be it resolved that the AAAS express approval of the resolution on science policy adopted by the Alaska Council on Science and Technology as follows:

The Alaska Council on Science and Technology resolves that there is urgent need for the United States and the State of Alaska to articulate rigorous arctic science policies that will encourage the pursuit of knowledge necessary to effect the development of national energy needs, enhanced fisheries management in North Pacific and Arctic Ocean waters, and the resolution of developmental and environmental conflicts in arctic and subarctic regions.

7) Protection of Human Subjects of Research, submitted by Frederick Mosteller, Edward Pattullo, and Ithiel de Sola Pool:

Whereas the American Association for the Advancement of Science is deeply concerned with all matters that affect the well-being of the scientific research enterprise, and

Whereas it is essential to that enterprise both that individuals who serve as the subjects of research be properly protected and that freedom of scientific inquiry be restricted no more than is necessary to prevent the occurrence of consequential harm, and

Whereas the U.S. Department of Health and Human Services is considering regulations* designed to protect human subjects from research practices that pose no discernible risk of harm other than that ordinarily encountered in the exercise of free speech,

Therefore be it resolved that the Association urge that further government regulation designed to protect the human subjects of scientific inquiry not be made applicable to studies that involve no more than the free exchange of information between adult subjects, competent to make their own decisions, and the scientist.

8) Yanoama People, submitted by Thomas Weaver on behalf of officers of the AAAS Section on Anthropology (H):

Whereas scientists who are aware of serious threats to fragile ecosystems and their indigenous peoples and cultures have a special responsibility to come to their defense, especially when the people cannot speak for themselves, and

Whereas it has been suggested that the Yanoama and other peoples of northwestern Brazil stand in peril of cultural and physical extinction unless the government of that country takes immediate measures to protect them and their habitat,

Therefore be it resolved that the Council of the American Association for the Advancement of Science expresses to the Brazilian government its deep concern in this matter, urging that there be established with all due speed a continuous parkland large enough to permit the survival of these people and their unique sociocultural systems.

Be it further resolved that the Council urges the Brazilian government to maintain its oversight function in the guardianship and protection of the indigenous peoples of Brazil so long as the need persists.

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^{*}Proposed in the Federal Register of 14 August 1979.