

the gap between social studies (politics, economics, sociology, history) predicated on human nature unexamined as a biological phenomenon, and the concentration on the chemistry and physiology of the cell that is the mainstream of experimental biology as a discipline. These students also served as willing hands for the unremitting watch tours required in the field studies on wild primates.

On 19 May 1975 this idyll of inquiry was shattered by a raid on the camp by a guerilla group of rebels who were encamped across Lake Tanganyika, in Zaire. After an agony of uncertainty, the word came out that the students were unharmed, but were being held for ransom and other demands. The rebels sought to replenish their weapons for their campaign against the Kinshasa government. Any effort to ransom the students would run afoul of the most delicate political interests. In the abstract, "Never negotiate with terrorists" is a doctrine that is categorically articulated by responsible governments. In the concrete, the lives of those young students were at stake; and while many others vacillated over the moral and political dilemma, Hamburg wasted no time in flying to Gombe to seek life-saving solutions. It must be left to imagination to visualize the subtlety of the interventions needed to negotiate the students' safe release over a period of several months, in the course of which the cross-cutting interests of the governments of Zaire, Tanzania, and the United States were engaged.

Hamburg is not eager to publicize this story, but to leave it out is to miss a life-vectoring motivation of his further career. No one could be more reflective about the ironic mirroring of primate and human behavior in that experience. Perhaps no one could have been so effective,

unless grounded in just that reflection, in threading successfully through the complexities of violently conflicting interests. His immersion in realities of hatred, violence, ignorance, disease, and poverty strengthened his conviction of the need to apply compassionate intelligence to human problems.

After moving to the IOM, Hamburg devoted his energies to policy concerns in health and to the potential of using science and technology to help meet social needs. During his term as president, the organization developed several major thrusts: expanding the scope of the health sciences, strengthening disease prevention, finding ways of meeting the health needs of the underserved, examining relations between health and behavior, and tackling heavy burdens of disease in developing nations.

At Harvard he drew together the faculties of the John F. Kennedy School of Government, the Medical School, and the School of Public Health, providing a broad-based approach to the examination of policy issues in the health sciences and their relations to disease prevention, mental illness, the health of children and youth, and the special needs of the elderly. For his debut as president of the Carnegie Corporation in New York, in early 1983, he lectured on "Man and Nature" at the American Museum of Natural History. In that series he brought together many of his interests in an evolutionary perspective on contemporary problems, especially in health and in international conflict. His theme was the rapid, pervasive, and unprecedented world transformation of modern times, and he dealt with needed institutional responses along two lines: (i) the strengthening of institutional capability for objective analysis of critical issues based on a broad foundation of knowledge and experience and (ii) the reori-

enting of education to make full use of the sciences over their entire range for intellectual satisfaction, occupational productivity, and social problem-solving.

Since moving to Carnegie, he has given much attention to conflict between groups and to the overriding problem of nuclear war. In a recapitulation of his lectures and of his thematic goals for the Carnegie Foundation, he states:

Contemporary power, in a moment of evolutionary time, suddenly dwarfs all of history. This power is, above all, significant in relation to the pervasive tendency toward conflict in the history of our species. We have not had time to develop effective institutions to resolve large-scale conflict. Mass slaughter in modern times has occurred all over the world—not just long ago, but yesterday and today. No continent is exempt, no people too civilized, no nation beyond susceptibility to this social disease. Education in all its forms—from family through schools to mass media—must increasingly come to appreciate and convey the facts of an exceedingly complex, pluralistic, crowded, interdependent, and fascinating world.

Human societies have a pervasive tendency to make distinctions between good and bad people, between heroes and villains, between in-groups and out-groups. The human species is one in which individuals and groups easily learn to blame others for whatever difficulties exist. But in the present nuclear predicament, blaming is at best useless and worst likely counterproductive. The scientific community is the closest approximation our species has so far constructed of a single, interdependent, mutually respectful worldwide family. It does not solve problems by blaming others but rather by undertaking objective analysis. So too the spirit of science must be brought to bear on this crucial problem of nuclear conflict.

It is the great task of contemporary humans to invent solutions to problems that are largely unprecedented in the history of the species. Science can help. But to be truly effective in meeting these novel human predicaments, science too must transcend its traditional boundaries and achieve a level of mutual understanding, innovation, and cooperation among its disciplines rarely achieved in the past.

AAAS Council Meeting, 1983

Catherine Borrás

The AAAS Council held its 1983 meeting on 30 May in Detroit, Michigan, in the Cartier Room of the Westin Hotel, with 47 of its 83 members in attendance. President E. Margaret Burbidge presided.

AAAS Activities, 1982

William D. Carey, executive officer, reported that AAAS is in a stronger position than ever in terms of its principal assets—*Science*, *Science 83*, Annual

Meetings, Colloquia on R&D in the Federal Budget, committee activities, international initiatives, and services contributed by its members. For the second year in a row, *Science 83* has won the National Magazine Award for General Excellence. The Association has maintained its leadership in science and public policy, has taken a major role in arms control, is vigorously addressing the issue of controls on scientific information, has mounted a concerted effort to improve science and mathematics education at the precollege level, is in the

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forefront in the field of human rights, and continues to conduct effective programs for women, minorities, and the handicapped.

On the negative side, Mr. Carey said, the real estate problem remains acute, with staff scattered in four separate locations and costs for rented space very high. However, the Board of Directors has authorized negotiations with two other nonprofit organizations to develop

a three-way housing project in Washington, D.C.

Mr. Carey's annual report for 1982 was published in the 4 February 1983 issue of *Science*, together with a summary of the 1983 operating budget.

Carol L. Rogers, head of communications and membership, announced that membership in December 1982 had averaged 137,453, a net increase of more than 2000 over the previous year. She project-

ed a 2000 to 3000 membership loss in 1983 as a result of the most recent dues increase, the external economic climate, and a reduced 1983 membership promotion budget.

Arthur Herschman, head of the Meetings and Publications Center, described new copublishing arrangements with Charles Scribner's Sons, for "trade" books derived from material in *Science* 83 and with Macmillan Publishing Com-

AAAS Members Elected as Fellows, 30 May 1983

Eleanor R. Adair
C. Melvin Aikens
Peter Albersheim
M. Ather Ali
Carol Wagner Allison
William Alonso
Stuart A. Altmann
Harry N. Antoniadis
John A. Armstrong
Barbara A. Bailar
Richard John Baldauf
John C. Ballin
Lawrence S. Bartell
Allen H. Barton
Roger E. Batzel
Arthur H. Benade
Michael W. Berns
Donald L. Bitzer
Bruce Blanchard
Elliott M. Blass
David Bodansky
Harold W. Borns, Jr.
Ronald Arthur Brandon
David R. Brillinger
William E. Brunk
Guy L. Bush
Robert H. Cagan
Allan M. Campbell
Robert R. Capranica
Robert James Carson
Matt Cartmill
James F. Case
Charles Stephen Churcher
Allan H. Clark
Joel E. Cohen
Anne Harris Cohn
Michael C. Corballis
Charles C. Coutant
Dermot P. Coyne
Bernd Crasemann
David Pafford Crews
Dorothy Kift Culbert
Kenneth W. Dam
Ubiratan D'Ambrosio
Raymond F. Dasmann
Zeev Davidovitch
Fred Delcomyn
Robert H. Denison
D. F. Detar
Billie Richard DeWalt
Charles W. Deyoe
Ellen Roter Dirksen
Jesse Seymour Doolittle
Anthony Downs
Robert L. Dressler
James V. Drew
Melvin I. Dyer
Thomas E. Eastler
A. J. Eggers
Roscoe Ellis, Jr.

Jörg-Peter Ewert
Morris D. Faiman
John A. Faulkner
Edward Albert Feigenbaum
Jerome A. Feldman
Alan G. Fix
Robert L. Fleischer
Leroy S. Fletcher
Chester W. Francis
Jerry F. Franklin
Paul A. Freund
Simeon A. Friedberg
Barrie James Frost
Abbot Stott Gaunt
Hans-Walter Georgii
James B. Gerhart
David James Getty
Michael T. Ghiselin
A. Bartlett Giamatti
Ronald N. Giere
Fred W. Glover
John F. Goggins
David E. Goldman
Gilbert Gottlieb
Loren R. Graham
Edward Grant
Walter Grattidge
Harry W. Greene
Robert G. Greenler
Neil S. Grigg
Joel A. Grinker
Lester Grinspoon
George F. W. Haenlein
Mimi Halpern
Wayne R. Hansen
John C. Harms
John Carl Harshbarger, Jr.
Francis J. Hassler
Robert H. Hellwarth
John W. Hernandez
William Ronald Heyer
Milton Hildebrand
Richard Hill
Richard Hiskey
Brian M. Hoffman
Carl Douglas Hopkins
Eugene Stuart Hunn
Thomas F. Irvine
Reed M. Izatt
Pierre Jolicœur
Peter B. Kaufman
Miriam Friedman Kelty
Stothe P. Kezios
E. Earl Kicliter, Jr.
Henry M. Kissman
Janis V. Klavins
Lewis J. Kleinsmith
Ellis R. Kolchin
James S. Kouvel
Byron Kratochvil

Daniel B. Krinsley
David Brian Kronenfeld
I. D. Kuntz
James L. Larimer
William Harvey Lawton
David Lazarus
W. Edward Lear
Joel L. Lebowitz
Elaine W. Ledbetter
Leon M. Lederman
William L. Lehmann
Louis Lemberger
Aaron Lemonick
Audrey Likely
John C. Loehlin
Edward N. Lorenz
Ernest L. Lundelius, Jr.
Peter F. MacNeilage
Lawrence E. Marks
Donald W. Marquardt
Dean F. Martin
L. G. Massey
Robert McCredie May
Roy W. McDiarmid
Bruce A. McFadden
Victor A. McKusick
Donald L. McLean
Michael Menaker
Arthur F. Merewether
Harry Messel
Larry Robert Miller
Thomas P. Miller
William H. Miller
George W. Moore
Robert W. Morse
Newton E. Morton
W. Wayne Moss
Rollie J. Myers
Herbert T. Nagasawa
Venkatesh Narayanamurti
Homer A. Neal
Ernest Newbrun
Pauline Newman
Chester W. Newton
Tor H. Nilsen
Ralph Norgren
Warren T. Norman
Fernando Nottebohm
Bruce Oakley
John P. O'Connell
Daniel A. Okun
David S. Olton
Robert V. O'Neill
Frank Oppenheimer
A. Thomas Ovenshine
Charles Ernest Oxnard
Jimmy L. Ozburn
Leo S. Packer
John J. Padalino

Harland Irvine Padfield
Robert A. Page
Kenneth Paigen
Louis C. Pakiser, Jr.
Jay M. Pasachoff
Eli Pearce
John S. Pearce
Charles Perrow
E. Joseph Piel
Chester M. Pierce
Willard J. Pierson, Jr.
Orrin H. Pilkey, Jr.
Arthur N. Popper
James W. Porter
Boyd J. Poulsen
Marian Boykan Pour-El
Ananda S. Prasad
Kenneth Prewitt
Carmelo A. Privitera
Herbert Rabin
Robert J. Raikow
Robert Thomas Ramage, Jr.
Raymond Rappaport, Jr.
James R. Redmond
William Parker Reinhardt
Howard Reiss
Stanley Reiter
George T. Reynolds
Emery H. Rogers
Kenneth C. Rogers
Joe B. Rosenbaum
Malcolm Ross
Carl M. Rovainen
W. D. Russell-Hunter
Jeremy Arac Sabloff
Andrew P. Sage
Arnold J. Sameroff
John W. Saunders, Jr.
Robert Scapino
William P. Schaefer
Andrew M. Sessler
Paul G. Shewmon
Norman S. Shiren
Vaughan H. Shoemaker
Duward F. Shriver
Herman Henry Shugart, Jr.
Kurt E. Shuler
Robert H. Silsbee
Joseph L. Simon
Anthony P. Simonelli
Monroe G. Sirken
Vladimir Slamecka
Albert M. Smith
Clarence Lavett Smith
Harlan J. Smith
Robert L. Smith
Ronald D. Snee
Lawrence C. Snyder
Robert R. Sokal

Edward I. Solomon
Eliot B. Spiess
Victor G. Springer
Larry R. Squire
Judy Stamps
Valentino J. Stella
Roger H. Stuewer
F. William Sunderman, Jr.
Jerome J. Suran
Harry J. Svec
Charles Tanford
Judith Mark Tanur
C. Richard Taylor
David Y. Teller
Robert C. Terwilliger
Klaus D. Timmerhaus
H. L. Toor
Sam Treiman
Kosta M. Tsipis
Thomas Uzzell
Victor D. Vacquier
William F. van Altena
Richard P. Van Duyne
Robert I. Van Hook
Webster Van Winkle, Jr.
Paulo Emilio Vanzolini
Ram S. Verma
Joseph Veverka
Willard J. Visek
Steven Vogel
Frances Cooper Volkmann
Marvilee H. Wake
James E. Webb
Paul W. Webb
Douglas B. Webster
Daniel Leigh Weiss
Frank X. Werber
Patricia A. Werner
James H. Werntz, Jr.
James A. Weston
John C. Wheatley
Fred N. White
Sheldon H. White
Sheila E. Widnall
Michael Kennerly Wilkinson
Alfred B. Willcox
Nash N. Winstead
Albert Wohlstetter
Richard V. Wolfenden
Lincoln Wolfenstein
Manfred Ernest Wolff
Herbert H. Woodson
Madison J. Wright
Stephen S. Yau
John Edward Yellen
Rainer Zangerl
Daniel Zelinsky
Michael C. Zerner
Charles A. Zrakat

pany for "professional" books derived from *Science*, the Annual Meetings, and committee and program activities. AAAS will exercise editorial control.

Elections

Election of the following Section secretaries, who took office on 1 June, was announced.

Section R (Dentistry): Harold M. Fullmer (reelected)

Section S (Pharmaceutical Sciences): David A. Knapp

Section U (Statistics): Edward J. Wegman

Section W (Atmospheric and Hydro-spheric Sciences): Bernice Ackerman

Section X-General: Rodney W. Nichols

Results of the 1982 general and electorate elections were published in the 14 January 1983 issue of *Science*.

Affiliated Organizations

The Council was informed that three organizations—the American Society for Medical Technology, the Society of Manufacturing Engineers, and the Wilderness Society—had withdrawn from affiliation. The International Solar Energy Society, American Section, has changed its name to American Solar Energy Society.

As new affiliates, the Council elected the Academy of Independent Scholars, JETS (the Junior Engineering Technical Society), and the Policy Studies Organization.

The Academy of Independent Scholars was founded in 1979 "to involve creative and scholarly persons from the fields of academia, business, the professions, government, communications and others in an educational, literary and research organization committed generally to the advancement and integration of the frontiers of knowledge in the public interest; the exploration of the process of human development; the application of science and technology to human betterment; and the placement of frontier knowledge in the public domain." The Academy has more than 300 members. It publishes member monographs bimonthly, *Academy Notes* quarterly, and books occasionally, and holds an annual National Forum.

JETS, which was founded in 1950, is a nationwide network of students and teachers concerned with the quality of science education, math training, and engineering guidance. It has 425 high

school chapters in 35 states, 8500 student members, and 350 members-at-large. Publications are *JETS Report*, a newsletter, and *JETS Special*, a teacher guide, nine times a year; *Engineering*, distributed annually to all high schools in the United States; and *Program Aids*, which provide bibliographic and resources materials for teachers and counselors. JETS administers the National Engineering Aptitude Search and the TEAMS competition (Tests of Engineering Aptitude, Mathematics, and Science).

The Policy Studies Organization, founded in 1972, seeks to promote the application of political and social science to important policy problems. Of its 2300 members, approximately 1500 are individuals and 800 are libraries or institutions. The Policy Studies Organization publishes two quarterly journals, *Policy Studies Journal* and *Policy Studies Review*; about ten books per year; and directories dealing with policy-relevant training programs, government agencies, funding sources, and research institutes.

Fellowship

As Fellows of the Association, the Council elected 297 members who had been proposed for that honor by the Steering Groups of the 21 AAAS Section Committees, by groups of three Fellows, and by the executive officer. A list of their names accompanies this report.

AAAS Initiative in Science Education

F. James Rutherford, chief education officer, brought the Council up to date on recent and ongoing activities designed to implement the Board's mandate that AAAS become a major contributor to the improvement of science and mathematics education at the precollege level:

- Preparation of a pamphlet for distribution to people who responded to the invitation at the conclusion of *I, Leonardo*, the IBM program presented recently on CBS stations, to write for information about what they could do to help improve education in their communities.

- Monitoring actions at federal and state levels that affect science and math education and responding to requests for information from students, parents, teachers, and school officials.

- Working with the Task Force on Education and Economic Growth of the Education Commission of the States and with the National Governors' Association.

- Preparation of a pamphlet listing the best materials available on science and math careers.

- Organizing activities for students and teachers at AAAS Annual Meetings and encouraging their attendance.

- Developing the "Challenge of the Unknown" program, funded by the Phillips Petroleum Company, which is producing supplementary resource materials to help teachers enliven and enrich mathematics learning through the use of films, publications, and computer programs that stimulate problem-solving in the real world. The schedule calls for distribution to all schools in the United States by the fall of 1984.

- Developing the Sciences Resources for Schools Project, funded by Standard Oil of Ohio, which will deliver a packet of science materials to junior high schools each month. Included will be separate materials for students and teachers, related to *Science 83* articles, and—from time to time—for principals, counselors, librarians, science department heads, superintendents, and school board members.

- Formation of a Coalition for Education in the Sciences, an informal partnership with other scientific and educational societies to enhance their role in improving precollege education in science, mathematics, and technology.

- Development of a Community-Based Continuing Professional Education Program to involve scientists and engineers in improving scientific literacy at the local level through services to community science and technology councils, community science forums, museums, and libraries. Funds are being sought for a 10-year program.

Committee on Science, Arms Control, and National Security

Rodney W. Nichols reported that the Committee on Science, Arms Control, and National Security, which he chairs, had sponsored an excellent set of symposia for the Detroit meeting. "The Environmental Effects of Nuclear War," presented on 28 May, was arranged in response to a resolution adopted by the Council at the 1982 meeting. The Committee's current major project is the preparation of a comprehensive primer on verification, with particular emphasis on the technological aspects. Also under way are plans for 1984 symposia; an effort to stimulate the publication of scholarly articles in the Committee's area of interest, primarily in *Science*; initiation of a series of congressional

seminars on verification and other appropriate topics, to start in the fall; and a program of arms control and national security fellowships, if outside funding can be secured.

Bylaw Amendments

The Council approved amendments to the bylaws of the AAAS Southwestern and Rocky Mountain Division and to the bylaws of the AAAS Pacific Division. One of the SWARM amendments added Kansas, Nebraska, and those portions of Texas and Oklahoma east of the 100th meridian to the Division's territory. The Council then amended AAAS Bylaw Article XII, Section 1(b), which defines SWARM's territory, accordingly.

Resolutions

Four resolutions were adopted by the Council, as follows:

1) *Humanitarian Appeal on Behalf of Eleven Foreign Scholars*, submitted by the AAAS Committee on Scientific Freedom and Responsibility:

Whereas the deteriorating health while in detention, imprisonment, or internal exile of the scholars named below is a matter of deep concern to the American Association for the Advancement of Science,

Be it resolved that the American Association for the Advancement of Science requests that the governments concerned release these scholars, on humanitarian grounds, and permit them to leave the country if they so desire:

Dr. Sixto Carlos, Jr. (political scientist, Philippines)

Dr. Ryszard Herczynski (mathematician, Poland)

Dr. Angel Ibarra (medical doctor, El Salvador)

Dr. Sergei Kovalev (electrocardiologist, U.S.S.R.)

Professor Jose Luis Massera (mathematician, Uruguay)

Professor Jamaluddin Naquvi (literature, Pakistan)

Dr. Yuri Orlov (theoretical physicist, U.S.S.R.)

Dr. Aleksandr Paritskii (physicist, U.S.S.R.)

Aleksandr Podrabinek (medical assistant, U.S.S.R.)

Dr. Andrei Sakharov (physicist, U.S.S.R.)

Dr. Anatoly Shcharansky (computer scientist, U.S.S.R.)

2) *Maintenance and Improvement of Federal Statistical Programs*, submitted by AAAS Section U (Statistics):

Whereas statistics produced by agencies of the Federal Government are vital to research, policy formulation, and public and private decision making in areas as diverse as eco-

nomics, demography, health, education, transportation, energy, agriculture, foreign relations, and military intelligence activities, and

Whereas decreases in budgets for federal statistical programs, together with initiatives to reduce the burden of federal reporting, to deregulate in a number of areas, and to institute user charges, will adversely affect the quality, the availability, and the utility of federal statistics, and

Whereas reductions in resources for federal statistical policy and coordination functions in recent years have substantially weakened the government's ability to evaluate and improve high-priority statistical programs,

Therefore be it resolved that the AAAS Council supports the continuing efforts of its affiliates and cognate organizations to increase the understanding of the need for sound statistical measurement, and

Be it further resolved that the AAAS Council call upon the Administration and Congress to recognize the centrality of quality statistical information systems and data bases of strategic national importance concerning the state of the economy and the state of technology, and to ensure the existence of a viable, authoritative, and independent unit to fulfill the needs for coordinating federal statistics and for maintaining and improving their quality and integrity.

3) *International Security, Nuclear War, and Nuclear Weapons*, submitted by the Committee on Council Affairs (revision of a resolution drafted by the Committee on Science, Arms Control, and National Security, which was based on a resolution proposed by Herbert L. Abrams, Clifford A. Barger, William J. H. Caldicott, Lester Grinspoon, Jerome Gross, Alexander Leaf, and Mary Ellen Avery):

Whereas reducing tensions between the U.S. and the U.S.S.R. and resolving international disputes short of armed conflict or threat of nuclear war deserve the highest continued attention at all levels of our society, and

Whereas the continuation of the nuclear arms race will not increase the security of either superpower, and the nuclear arsenals of the United States and the Soviet Union are more than enough for deterrence, and

Whereas thirty years of vigorous research and development have produced no assured prospect of effective defense against nuclear attack, and

Whereas (a) there has been no progress for several years toward achieving limitations and reductions in strategic arms, either through ratification of SALT II or the negotiation of a replacement for it, (b) negotiations intended to achieve a comprehensive nuclear test ban have been indefinitely adjourned, and (c) negotiations intended to prevent or inhibit the spread of warfare to outer space have been suspended,

Be it therefore resolved that the American Association for the Advancement of Science urges the President and the Congress of the United States and the Government of the Soviet Union:

1) To intensify substantially, without pre-

conditions and with a sense of urgency, efforts to achieve an equitable and verifiable agreement between the United States and the Soviet Union to halt the testing, production, and further deployment of nuclear weapons that threaten one another's nuclear deterrent forces, and also to reduce significantly the number of all nuclear weapons and delivery systems.

2) To resume negotiations to prevent the spread of weapons and warfare to outer space.

3) To avoid initiatives in ballistic missile defense (BMD) that are inconsistent with the existing SALT I-Limitation of Anti-Ballistic Missile Systems Treaty.

4) To increase efforts toward greater mutual security through creation of a better climate of international understanding rather than through continuing competition in advanced nuclear weaponry.

4) *Taxonomic Research and Services*, submitted by John W. Neal, Jr., on behalf of the Entomological Society of America:

Whereas there is deep concern about the state of systematic biology in the United States today, and

Whereas there are several million living species of organisms, many of which are undescribed or incompletely described, and

Whereas many of these have major economic impact through their medical, veterinary, agricultural, and silvicultural importance, and

Whereas faunal and floral surveys and the production of identification manuals for the many economically important groups are needed in the United States in order to provide basic information for research and action programs,

Therefore be it resolved that the American Association for the Advancement of Science recommends to the Government of the United States and its granting agencies that they recognize the fundamental importance of and need to support taxonomic research and services, faunal and floral surveys, and the production and publication of monographs and identification manuals.

Retirement of Philip H. Abelson

President Burbidge announced that Philip H. Abelson, Editor of *Science* since 1962, had informed the Board of Directors of his wish to retire within the next year or two. She commended him for bringing *Science* to its internationally preeminent position among scientific journals, for his devoted services to the Association and to the scientific community generally, and for his personal contributions to the advancement of science during a long and distinguished career. She added that AAAS will have the benefit of Dr. Abelson's service as a consultant after he retires. The Council rose to give Dr. Abelson a standing tribute for his achievements as Editor.