AAAS Symposia

Annual Meeting: Philadelphia

28–29 December

National Science Foundation: Student-Originated Studies

This symposium will feature student representatives reporting findings of 103 projects that were conducted during 1971. These projects, sponsored by the National Science Foundation, were the first to be supported under the Foundation's recently established Student-Originated Studies (SOS) Program. The two basic objectives of the SOS Program are (i) to encourage college students to express in productive ways their concern for the environmental well-being of our nation and (ii) to provide support for groups of college and university students who can demonstrate their readiness to assume increased responsibility for their own educational development.

Certain major features were shared by all projects. As the title suggests, the projects were student-originated, student-planned, and student-directed, and were carried out by a student group under the leadership of their chosen student project director. Associated with each project as project adviser was a faculty member of the host institution, a 4-year college or university. The student groups directed their attention to a problem or set of problems related to the environment—physical, biological, or social—on a full-time basis for an uninterrupted period of 10 to 12 weeks. The projects stressed interdisciplinary approaches to understanding problems and searching for solutions and, accordingly, were manned by students drawn from several fields. In presenting proposals, moreover, the students were asked to submit evidence that their findings might be useful to local planners or to other civic or governmental bodies that are concerned with environmental quality on the local, state, or regional level.

At the Philadelphia meeting, each project will be represented by one or more student participants who will report the findings. Simultaneous reporting sessions are planned, each organized around one of four general themes: water quality, natural resource utilization, urban problems, and general environmental studies. A general session for presentation of selected reports drawn from each of the four simultaneous meetings has also been scheduled.

Student groups submitted 560 proposals requesting some $8.2 million last year, indicating the strength of their response to the SOS Program. The National Science Foundation was able to support 103 projects with a total funding of about $1.5 million. In addition, 185 certificates of honorable mention were issued.

CHARLES H. DICKENS
National Science Foundation, Washington, D.C. 20550

29 December

The Role of Mathematics in the Development of Science

What is mathematics? To what extent is it intuitional? How is it related to logic? What is science? Is it essentially empirical or rational? How, in turn, is it related to mathematics? Evidently the answers to these questions are largely dependent upon our philosophical conceptions of mathematics and of science. Insights, however, can be obtained by observing the role of mathematics in the development of different sciences, for example, physical science, biological science, social science—not to mention the very development of mathematics itself.

A number of distinguished mathematicians and scientists will share their own views of this complex problem. The keynote speaker will be Salomon Bochner (Rice Institute) who wrote in the preface of his book *The Role of Mathematics in the Rise of Science*, "What makes mathematics so effective when it enters science is a mystery of mysteries." Einstein remarked in 1921, "Can human reason without experience, discover by pure thinking the properties of real things?" The major addresses will be given by Harold Grad (New York University); Mark Kac (Rockefeller University); Oskar Morgenstern (New York University); J. Barkley Rosser (University of Wisconsin); and Eugene P. Wigner (Princeton University). Panelists will be H. J. Bremerman (University of California, Berkeley); Freeman J. Dyson (Institute for Advanced Study, Princeton); Lawrence R. Klein (University of Pennsylvania); C. C. Li (University of Pittsburgh); David D. McFarland (University of Chicago); Ernest Nagel (Columbia University); Dudley Shapere (University of Chicago); F. Joachim Weyl (Hunter College); and A. S. Wightman (Princeton University).

RAYMOND J. SEEGER
Human Service College, National Graduate University, Washington, D.C.

27–30 December

Environmental Sciences and International Development

The symposium will bring together information on environmental problems now faced by developing countries. Such problems have resulted from the failure of science and modern technology to cope with development in the context of the natural environments of those countries. It has been adequately documented that the application of unsuitable technologies has resulted in the failure of many development programs to meet their stated objectives. A massive new effort is needed to meet these needs—to synthesize an environmentally sound approach to "development." Some, perhaps a major part, of the

responsibility for the failure lies with the American scientific community—more generally, with the scientific community of the industrialized nations—insofar as the present functioning of our scientific system has been inadequate in the environmental area. In the process of building new scientific and technological institutions which are ecologically compatible, the involvement and primary participation of the young scientists from the developing countries, who are studying here, can be of pivotal importance.

M. TAGHI FARVAR
Center for the Biology of Natural Systems, Washington University, Saint Louis, Missouri

Speakers and Topics

Arranged by M. Taghi Farvar (Iran: Center for the Biology of Natural Systems, Washington University).

27 December

The Limitations of Science and Technology in Coping with Environmental Realities of the Developing World

Wasif Ahmed (India: University of California, Davis), *Assessing Technological Development in Terms of Its Purported Objectives* and *Recrudescence of Malaria in India and Ceylon.*

Ming-Hsien Sun (Taiwan: Joint Commission on Rural Reconstruction, Taipei), *Assessing Monocultural Practices in Taiwan and the United States.*

Wasif Ahmed, Frederick W. Plapp, Jr. (Associate Professor, Department of Entomology, Texas A & M), and Kevin P. Shea (*Environment* magazine), *Where the Present Strategy of Pest Control Has Failed.*

Wolf Roder (Geographer, University of Cincinnati), *Power Generation in African Water Development Schemes.*

Obi Chizea (Nigeria: Temple University), *The Social Costs of Unsuitable Technologies.*

Nguyen Thi Thanh (Doctoral Student, International Relations, Cornell University), E. B. Pfeiffer (Professor of Zoology, University of Montana), and Arthur H. Westing (Chairman, Biology Department, Windham College), *Impact of Modern Weaponry Development on the Human Environment in Indochina.*

John K. C. Liu (Taiwan: Pennsylvania State University), Kok Chiang Tan (Singapore: University of Guelph), and Luke S. K. Wong (Hong Kong: University of Toronto), *Urban Environmental Problems Associated with High Density Living.*

Jung Hyun Cho (Korea: Tulane University), *Air Pollution Due to Rapid Industrialization.*

Edwin H. Clarke II (Williams College), *Economic Consequences of the Green Revolution.*

28 December

The Elements of a New Approach

Kariba Munio (Kenya: University of Colorado), *Organizing Scientific Efforts to Assess Environmental Impact.*

Daniel H. Kohl (Washington University), *Inorganic Fertilizers and the Human Environment—A Case Study.*

M. Taghi Farvar, *Ecological Implications of Chemical Insect Control for Agriculture, Public Health, and Development in Central America.*

Kyle R. Barbehenn (Washington University), *Rodent Control and the Developing World.*

Hwa Yol Jung (Korea: Yale University), *A New Order of Priorities and A New Scientific Approach.*

Richard Garcia (University of California, Berkeley), *Environmental Approaches to Malaria Control.*

Carter L. Marshall (Mt. Sinai School of Medicine, New York City), *Public Health Programs and Improved Nutrition—A New Approach to the Population Problem.*

Jai-Hyup Kim (Korea: Indiana University), *The Politico-Administrative Requirements for Environmental Planning and Management.*

Barry Commoner (Washington University), *Environmentally Compatible Technology—The Need for a New Strategy.*

Alan H. McGowan, Margaret L. Thomas (Washington University), and Francisco Szekely (Mexico: Doctoral Student in Technology and Human Affairs, Washington University), *Results of a Survey of Participants on Problems Related to Their Scientific Education in North America.*

Sarjeet Singh (Malaysia: University of California, Berkeley), *The Organizational Framework for Future Cooperation.*

29 December

Preparation of Final Reports and Informal Meetings

30 December

Findings of the Conference

Deepak Bajracharya (Nepal: Stanford University), *The Limitations of Science and Technology in Coping with Environmental Realities in the Developing Countries.*

Wasif Ahmed and Deepak Bajracharya, *Assessing Technological Development in Terms of its Purported Objectives.*

Howard Boksenbaum (Washington University), *The Social Costs of Unsuitable Technologies.*

Kariba Hunio, *The Elements of a New Approach.*

Daniel Dohl, Leonardo Mata, Kariba Munio, and Thayer Scudder, *Building a Relevant Scientific Approach.*

Donald Aitken [San Jose (Calif.) State University], *A New Order of Priorities.*

M. Taghi Farvar, Sarjeet Singh, and Francisco Szekely (Mexico: Washington University), *The Organizational Framework for Future Cooperation.*

SPECIAL ANNOUNCEMENT: Plan to visit the Annual Exposition of Science and Industry, located this year in the Sheraton Exhibit Hall, Concourse Level, Sheraton Hotel. The exhibit will be open to the public from the 27th through the 30th of December. Hours are: December 27–29, 10 a.m. to 6 p.m. and December 30, 9 a.m. to 4 p.m.