Congressional Subcommittees to Hold Hearing at AAAS Annual Meeting . . .

Congressional subcommittees in the U.S. Senate and House with principal jurisdiction over national science and technology policy will move downtown on 14 February to conduct a day-long joint hearing at the AAAS Annual Meeting.

The Senate Subcommittee on Science, Technology, and Space, chaired by Adlai E. Stevenson (D–Ill.), and the House Subcommittee on Science, Research, and Technology, chaired by Ray Thornton (D–Ark.), will convene on Tuesday, 14 February, at 9:30 a.m., in the Grand Ballroom of the Sheraton-Park Hotel. The joint hearing is part of the subcommittees' oversight hearings on national science and technology policy.

The morning session of the hearing, chaired by Stevenson, will address the issue of "Industrial Innovation, R & D Spending, and the Economy." Testimony from invited witnesses will address these questions: Is there a problem? Does it matter? What can and should the federal government do about it? More specifically, the subcommittees will examine the relationship between research and development expenditure, both public and private, and industrial innovation. They also will examine the degree of reported shifts in R & D priorities (e.g., from basic research to product development).

"The AAAS meeting in Washington, D.C., provides Congress with an excellent opportunity to hear directly from scientists, engineers, and other experts," Stevenson said in announcing the joint hearing, which will be open to all Annual Meeting attendees.

The afternoon session, chaired by Representative George Brown (D–Cal.), will convene at 1:30 p.m. in the Sheraton-Park's Grand Ballroom to examine the topic "The Science and Technology Policy Agenda for 1983 and Beyond." Witnesses will offer their opinions about emerging science and technology issues that are likely to require action by Congress and the federal government during the 1980's.

The afternoon hearing represents the initial step by Congress to develop a capability to forecast science and technology issues on a continuing basis. The Congressional Research Service of the Library of Congress and the Office of Technology Assessment will assist in this effort. The Science and Technology Policy Act of 1976 mandated a similar initiative by the Office of Science and Technology Policy; responsibility was transferred to the National Science Foundation after the reorganization of the Executive Office of the President. NSF, in turn, is considering asking the National Academy of Sciences to conduct a 5-year forecast of science and technology issues.

Both sessions of the hearing will be opened to questions and comments from the audience after testimony of witnesses is heard. It will be "an accessible forum for the Annual Meeting participants," according to Stevenson. "We look forward to an informative and lively exchange of views."

Nominations of AAAS Fellows Invited

A Fellow of the American Association for the Advancement of Science is defined as one "who has produced a body of work on behalf of the advancement of science that is scientifically distinguished or socially highly significant, or both." Fellows are elected annually by the AAAS Council upon recommendation by the Council Committee on Fellows. Nominations for consideration at the Committee's fall 1978 meeting are now invited. Nomination forms may be obtained from the Executive Office, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036.

Completed forms should be sent no later than 1 May to the secretary of the nominee's voting section for possible inclusion in the slate of nominees to be submitted by the section committee to the Council Committee on Fellows. Alternatively, nomination may be made by any three AAAS Fellows and the form sent directly to the Executive Office for receipt no later than 1 August. The Committee will give equal consideration to nominations from the section committees and from groups of three Fellows.

Names and addresses of the section secretaries will be supplied by the Executive Office upon request.

. . . And Other Meeting Notes

The new **Working Group on Science, Technology, and Public Policy Networking** of the AAAS Committee on Science and Public Policy will hold an open business meeting during the Annual Meeting, at 7:00 p.m., Tuesday, 14 February, in the Board Room of the Shoreham Americana Hotel. The working group was formed with support from the Alfred P. Sloan Foundation to consider ways of fostering training, research, and utilization in the science and technology public policy field. AAAS is particularly interested in assisting university-based science, technology, and society programs in their efforts to give the field a greater measure of coherence, utility, and recognition, and in helping to establish networks of scholars and practitioners. The subcommittees of the Senate and the House of Representatives with science responsibilities have expressed their support of these objectives and their interest in AAAS initiatives.

The business meeting on 14 February will provide the opportunity for charting a course of action for the new group. A basis for discussion will be the results of a survey of the science/technology/public policy community in universities, industry, and government to determine their views on the needs of the field and how best AAAS could assist in meeting them. Respondents to the survey ranked a variety of activities they would like to see AAAS initiate in the next year or two. Among those receiving high priority were workshops, training courses, work-

ing groups, and seminars or faculty exchanges to facilitate the application of disciplinary expertise to problems of science policy. Also rated highly were an annual survey of how the academic science policy field might better relate to national and regional needs, a monograph series, and a newsletter. A report of the survey results will be available at the open meeting of the working group on 14 February or may be ordered from Don I. Phillips, Office of Public Sector Programs, at the AAAS address.

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A **science and public policy banquet** will be sponsored by the AAAS Committee on Science and Public Policy and the Congressional Science and Engineering Fellow Program for the third consecutive year. The banquet and cash bar mixer will be held on Thursday, 16 February, beginning at 6:30 p.m., at The Brookings Institution. Russell W. Peterson, new director of the congressional Office of Technology Assessment, will be the keynote speaker. Banquet tickets are $10.50 per person. For advance ticket sale and/or further information, contact Patricia S. Curlin, Office of Public Sector Programs, at the AAAS address. Ticket confirmation will not be possible after 6 February. Tickets also will be on sale on a first-come, first-served basis in the AAAS registration area of the Sheraton-Park Hotel through 2:00 p.m., 16 February.

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Members of **Section Q (Education)** are invited to attend the section business meeting at 7:00 p.m., Wednesday, 15 February, in the Madison Room of the Sheraton-Park Hotel. Issues and concerns raised during a meeting of Section Q officers and AAAS Office of Science Education staff on 9 and 10 December will be discussed during the business meeting. Two major themes that arose during the December meeting were (i) the importance of science education for all educated citizens and (ii) the problem of lack of interest among scientists—and not just science educators—in high quality science education, not only at the university level but in pre-college years as well. Also explored was the lack of consensus among scientists and science educators about the aims of science education. The group agreed that science curricula should address the limitations of science, misuse of science, pseudoscience, and the relationships of science and technology, as well as customary science topics. Participants discussed such questions as how to stimulate scientists and science educators to take an active part in political discussions affecting science education; how to overcome resistance of some citizen groups to include in pre-college curricula controversial but scientifically important topics such as evolution and human reproduction; how to measure the effectiveness of science education in ways that do not discriminate against ethnic minorities; how to improve the quality of pre- and in-service science teacher education; how to keep science curricula up-to-date in the face of explosive growth in scientific knowledge; and how to improve the quality of research in science education.

AAAS Report and Colloquium on R & D

The third annual AAAS report and colloquium on research and development will address R & D in industry and its impact on the economy as well as the funding and issues of R & D in the federal budget for FY 1979. The report will be published in early June 1978. The colloquium will be held on 20–21 June 1978, at the Mayflower Hotel in Washington, D.C. Those persons interested in receiving program and registration materials for the colloquium should send their names and addresses to 1978 R & D Colloquium, Office of Public Sector Programs, at the AAAS address. The materials will be sent in the spring.

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AAAS Section H (Anthropology), the AAAS Office of International Science (OIS), and the Anthropological Society of Washington invite Annual Meeting attendees to their jointly sponsored symposium on "The Viability of the Village in Contemporary Society," to be held Monday, 13 February, at 9:00 a.m. and 3:00 p.m., in the Empire Room of the Shoreham Americana Hotel. More than half of the world's people live in villages and face problems such as land tenure, cash cropping, education policy, social services, women's roles in development, socialism, renewable energy sources, mechanization, and food storage. Given these obstacles, can villages adapt to the 21st century? Should they? The questions are of international importance considering the efforts of the U.S. government and the World Bank and other world organizations to reach the rural poor through development programs. Panelists who will address the status of villages during the Annual Meeting symposium will include Charlotte V. Wiser (author of *Behind Mud Walls*), who observed life in the same Indian village for over 50 years; author Michael Maccoby (*The Gamesman*), who developed his research methods with Erich Fromm in a Mexican village which was undergoing industrialization; David Shear, director of the Sahel Program of AID, who will discuss how this long-range program is developing ways to work with village-level social structures; and anthropologist Margaret Mead, who began studying villages in the 1920's.

Other OIS-sponsored Annual Meeting events: A symposium on **"Desertification: Issues in Measuring and Monitoring the Process with Indicators"** (Wednesday, 15 February, 3:00 p.m., Club A Room, Shoreham Americana Hotel); an informal evening program for up to 15 **foreign graduate students** attending the Annual Meeting under AAAS sponsorship (Monday, 13 February, 6:30 p.m. to 8:00 p.m.) for the purpose of discussing with representatives of organizations and other individuals issues related to U.S. graduate education for foreign students; a meeting on Tuesday, 14 February, 7:00 p.m. to 8:00 p.m., in the Adams Room of the Sheraton-Park, of the **Consortium of Affiliates for International Programs** (comprised of 79 of AAAS' affiliated scientific and engineering societies interested and involved in international programs). More information on any of these OIS activities can be obtained by writing to the Office of International Science at the AAAS address.

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The AAAS **Office of Opportunities in Science** reminds Annual Meeting attendees of the Conference of Minority Women Scientists (12 February, 9:30 a.m. to 5:30 p.m., Richmond Room, Sheraton-Park) and the meeting of the AAAS Women's Caucus (12 February, 7:00 p.m., South Assembly Room, Sheraton-Park). There will be a meeting for handicapped scientists sponsored by the Foundation for Science and the Handicapped at 7:00 p.m., 16 February, in the Arlington-Alexandria Room of the Sheraton-Park Hotel. To facilitate participation by the handicapped in the entire Annual Meeting, the following services will be offered: assistance as needed in movement within and between meeting hotels; transportation service to and from airports and train and bus stations; interpreters (oral and manual) at the meeting's ten public lectures and at all other sessions on request; audiotaped

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the presence of valinomycin, respectively. When the electrode was withdrawn (third arrow) the potential returned to approximately the original value. In a similar experiment (*1*) at the same KCl concentration (1 m*M*) and with electrodes filled with 2*M* KCl the corresponding potentials were 16.8 ± 1.0 and −14.0 ± 3.0 mv.

The experiments discussed by Rottenberg (*5*) and presumed to provide evidence for a metabolically induced membrane potential, are most readily interpretable on the basis of a nonelectrogenic H^+ pump (*6*). In this model the H^+ exchanges for a cation for which the mitochondrial membrane is sufficiently permeable (for example, K^+ in the presence of valinomycin or a lipophilic cation). Alternatively, the H^+ could be accompanied by an anion (for example, a lipophilic anion). The results of Wikström and Saari (*7*) are consistent with the presence of a significant metabolically induced membrane potential if the assumptions of the study are correct (for example, the assumption that the Nernst equation can be used to calculate a membrane potential at all K^+ concentrations). However, these results do not correspond to a definite proof. The interpretation of Wikström and Saari (*7*), that the spectral shifts in ferric cytochromes aa_3 are due to proton binding to this complex may well be in harmony with a model involving proton shifts alone without involving a membrane potential. Similarly, we have no quarrel with the concept that a diffusion potential induces spectral and fluorescence changes in aurovertin and ferric cytochromes aa_3, respectively, or a conformational change in F_1 (adenosine triphosphatase). We have considerable corroborative evidence for an absence of a significant metabolically induced membrane potential. Using four electrofluorimetric dyes we have obtained evidence that in rat liver mitochondria, the magnitude of the metabolically induced membrane potential change is within the range of 0 to −60 mv (*4*).

We have also conducted a variety of experiments on the decay of the K^+ diffusion potential using the same electrofluorimetric dyes (*4*). The potential, as detected by the fluorescence, decays with time but only in the presence of certain cations (for example, Mg^{2+} or, alternatively, a high concentration of Na^+ or choline). In the absence of these ions the decay is very slow, as it is in other systems such as liposomes and red blood cells (*8*) or Ehrlich ascites cells (*9*). Burckhardt (*9*), for example, selects

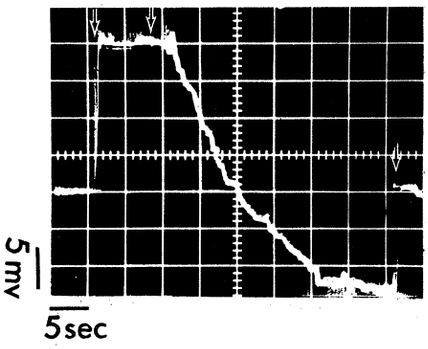

Fig. 1. Except for the use of the electrodes filled with NaCl, this experiment is approximately equivalent to that previously reported (*2*). The arrows indicate in chronological sequence, impalement, addition of valinomycin, and removal of the electrode. Valinomycin was added to the agar overlay about 0.1 mm in thickness to a final concentration of $10^{-7}M$. The medium was maintained at approximately 18° to 25°C. The medium contained 0.30 osmolal sucrose, 1 m*M* tris(hydroxymethyl)-aminomethane, 1 m*M* KCl at *p*H 7.4.

steady state fluorescence as a reflection of membrane potential after 30 minutes.

The stability of the K^+ diffusion potential in the presence of valinomycin results from the fact that the K^+ must leave with an accompanying anion (or in exchange for another cation). A rapid decay from mitochondria would be expected only from considerations based on the chemi-osmotic hypothesis. We regard the lack of a rapid decay as further evidence that the high internal K^+ concentration of mitochondria is not the result of a metabolically induced membrane potential postulated by others.

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highlights of the meeting program for persons with visual impairments; emergency repair service for wheelchairs; round-the-clock telephone service responding to emergency needs; and tour and sightseeing information for handicapped persons. Individuals needing modified hotel accommodations (for example, bathroom door which can accommodate wheelchair, room near elevator, and so forth), interpreting services, or other assistance, are strongly urged to so inform the AAAS Meetings Office (telephone 202/467-4487; TTY users may call 202/467-4497).

The AAAS Office of Opportunities in Science encourages Annual Meeting registrants to attend the three symposia on 16 and 17 February on science education for the handicapped.

Directory of Science Communication Courses Available

A *Directory of Science Communication Courses and Programs*, describing 34 degree programs and 105 courses in 58 colleges and universities, is now available. Sharon M. Friedman, assistant professor of journalism at Lehigh University, Rae Goodell, assistant professor of science writing at Massachusetts Institute of Technology, and Lawrence Verbit, professor of chemistry at the State University of new York at Binghamton, compiled the book. The directory "will make a substantial contribution" to AAAS public understanding of science activities, especially the Mass Media Intern Program, said J. Thomas Ratchford, head of the AAAS Programs Center, in endorsing the directory project.

Copies are available at $4.95. Checks should be made payable to "Science Communication Directory" and sent to Science Communication Directory. Department of Chemistry, State University of New York, Binghamton 13901.

For more information about the activities and publications described in "AAAS News," write to the appropriate office, AAAS, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036, unless otherwise indicated.