Population Explosion and Birth Control

G. W. Wharton, Ohio State University, chairman

Robert C. Cook, Population Reference Bureau, Washington, D.C.

Philip Corfman, National Institute for Child Health and Human Development

Dean B. Cowie, Carnegie Institution of Washington, Baltimore

David Davis, Pennsylvania State University

David Lowenthal, American Geographical Society

George C. Mallinson, Western Michigan University

Steven Polgar, Planned Parenthood, New York, N.Y.

George Pollock, Institute for Psychoanalysis, Chicago

Lora M. Shields, New Mexico Highlands University

Paul Van Zandt, Youngstown University

Committees To Be Appointed

AAAS Socio-Psychological Prize, Judges

AAAS-Westinghouse Science Writing Awards, Screening Committee

AAAS-Westinghouse Science Writing Awards, Judges

Representatives

American Association for Accreditation of Laboratory Animal Care

H. Burr Steinbach, University of Chicago

American Council on Education

Mark H. Ingraham, University of Wisconsin

John R. Mayor, AAAS

American Standards Association Sectional Committees on Letter Symbols and on Abbreviations for Science and Engineering (Y1 and Y10)

Irving P. Orens, Newark College of Engineering

American Standards Association Sectional Committee on Use of the Decimalized Inch (B87)

Carl F. Kayan, Columbia University

Marine Biological Committee of Review

H. Burr Steinbach, University of Chicago

Science Service Board of Trustees

Wallace R. Brode (1967), American Chemical Society

Bowen C. Dees (1970), University of Arizona

Athelstan F. Spilhaus (1968), University of Minnesota

Cooperative Committee on the Teaching of Science and Mathematics

Ralph W. Lefler (AAAS Section on Education), Purdue University

John R. Mayor (AAAS), AAAS

Wayne Taylor (Academy Conference, AAAS), Michigan State University

Dael Wolfle, ex officio, AAAS

Hawaiian Botanical Gardens Foundation, Inc.

John N. Couch, University of North Carolina

National Academy of Sciences Committee on the Kimber Genetics Award

Marcus M. Rhoades (1969), Indiana University

National Academy of Sciences Office of Critical Tables Advisory Board

Wallace R. Brode (1969), American Chemical Society

Scientific Manpower Commission

Wallace R. Brode (1967), American Chemical Society

M. H. Trytten (1969), National Academy of Sciences

U.S. National Commission for UNESCO

Joseph B. Koepfli (1968), California Institute of Technology

A Report of the Eighth Washington Meeting

Raymond L. Taylor

A report of each AAAS meeting is a record for posterity; an account for those who missed a stimulating occasion; and—so large and complex is the annual meeting of the Association—it is a roll call of some of the events that even those who were present may not have attended. Of all 133 national meetings of the AAAS, the record-breaking Eighth Washington Meeting was approached in size only by the New York meetings of 1960 and 1949, and by last year's Berkeley meeting. With 7617 paid registrations—not including 909 press, exhibitor personnel, and a few guests—it was the largest meeting in the Association's long history. It surpassed the Berkeley meeting by nearly 600, and it exceeded the New York meeting of 1960 by more than 200. If it had not been for snow adversely affecting plane flights in Chicago and along the Atlantic Coast, the meeting well might have passed 8000!

Mere size, however, is not the primary criterion of a successful meeting. The Eighth Washington Meeting was noteworthy for the variety and quality of the programs, for the relative smoothness of its operation, and for the pleasant and hospitable attitude of the registration and hotel staff and others with whom the visitors came in contact. The work of the local committees was outstanding, not only in effectiveness but also in the degree of warm personal interest.

The Annual Exposition of Science and Industry was much better housed than it could be at last year's Berkeley meeting. The ceiling of the exhibit area in the exhibit halls of the Sheraton-Park Hotel was higher; the pillars were smaller and more uniform; more space was available; and, with both up and down escalators in constant

At the time this was written, the author was concluding his service as associate administrative secretary of the AAAS.

motion, it was much more conveniently reached. There were 115 exhibitors in 143 booths. Understandably, the exhibitors were pleased with the number of teaching scientists who saw their displays of books, instruments, and laboratory materials. With foresight and confidence most of them had engaged all available booth space months in advance of the opening day.

In summary, though the factors responsible for a successful AAAS meeting—from attendance and financing to press and network coverage—are both numerous and complex, those that are basic invariably include the excellence of the programs; the adequacy of advance information in *Science* and in cooperating scientific journals; physical facilities that are both sufficient and convenient; complete plans, and their execution by a devoted staff; and, not least, the effective work of truly interested local committees. The Eighth Washington Meeting possessed all of these in full measure.

Premeeting Publicity

Meetings cannot be well attended unless program information is publicized well in advance. A preliminary announcement of the current year's AAAS meeting which appears in *Science* each May includes brief synopses of the planned programs of the sections and participating societies, as far as they are known at that time. In late July additional program notes and data on headquarters hotels are released, but usually it is not until mid-autumn that more complete information can be supplied. The flow of hotel room reservations indicates that this is the time when many decisions on attendance are made or confirmed. It is always hoped that all section secretaries and program chairmen responsible for symposia will make every effort to complete their arrangements by 1 June before people scatter for summer research or travel.

In 1966, the series of releases on the programs of the meeting that appeared in *Science* from 28 October through the Preconvention Issue of 7 December benefited greatly from the writing of staff member Grayce A. Finger. Subsequent weekly releases were written by participants Thomas F. Malone, Edwin B. Kurtz, Jonathan O. Cole, Harris B. Stewart, Jr., and Anthony Di Pentima. The meeting material in the Preconvention Issue was prepared by Grayce A. Finger. The writer is indebted to all those mentioned for these articles. The November Meeting Issue of the *AAAS Bulletin*, again expanded to 12 pages by its editor Hans Nussbaum, with the assistance of Catherine Borras, reached AAAS members in mid-November. It was a marvel of compression of program material and of publication, considering its appearance in advance of the Preconvention Issue of *Science*.

Table 1. Analysis of sessions at the Eighth Washington Meeting.

Sessions for symposia, invited papers, panels and so forth	158
Sessions for contributed papers	72
Meals and social functions	60
Business sessions, committee meetings	56
Sessions for addresses, lectures	32
Sessions for motion pictures	13
Tours and field trips	14
Junior scientists assembly	3
Total number of sessions	408

Announcements in other journals also helped to attract people to Washington. The Association is indebted to the following for space in which to call attention to the AAAS meeting: *BioScience* of the AIBS, the ASB *Bulletin*, and the *Proceedings* of the Federation of American Societies for Experimental Biology. Societies that participate, such as the American Society of Zoologists and the Ecological Society of America, carry abstracts of their own papers; the Geological Society of America's *Bulletin* most cooperatively prints full details of Section E's geological sessions; and, finally, the secretaries of the sections and other program arrangers send program details to *Physics Today, Chemical and Engineering News,* and other appropriate journals. It seems quite safe to say that the meeting of no other scientific society receives more cooperation from the journals of its affiliates and colleagues.

Pattern of the Meeting

The pattern of the Association's annual meeting is an important factor in its success. From the time the Association's Committee on Meetings was founded, it has devoted much thought to the best arrangement of the general events, the interdisciplinary symposia, and the evening lectures. The section secretaries now meet jointly with the Committee early in the year to plan the special and general sessions and to coordinate the AAAS committee and sectional programs. The needs and views of the participating societies are kept in mind.

The pattern as it has evolved provides both an effective and efficient daily schedule and a plan for timely interdisciplinary symposia. The scheduling of the four Moving Frontiers of Science lectures on the first evening and third afternoon, the placement concurrently of the interdisciplinary symposia on the morning of "AAAS Day" (28 December), and the sequence of the special sessions have permitted the AAAS sections and the participating societies to plan their programs in two 2-day blocks (26–27 and 29–30 December). The results have been less demand for session rooms on one or two peak days in the middle of the meeting period, fewer conflicts between programs of interest to the same potential audience, and, in general, more time for personal communication. In recent years, with the basic pattern established, the Committee has had more time to work on still more attractive programs. Further improvements in the pattern of the meeting are under active consideration.

The Washington meeting's total of 408 sessions (Tables 1 and 2) included programs sponsored by the Association as a whole, by the 20 AAAS sections, by five AAAS committees, by the recurrent Academy Conference, and by 53 societies that had arranged programs varying from one to 51 sessions in number. In addition, 38 other participating organizations officially cosponsored appropriate programs of the sections or of other societies.

Since the 20 AAAS sections, five committees, and 53 organizations all had programs, there were sessions of interest to specialists in nearly all the principal fields of science. There were some 158 sessions that were symposia, panels, or groups of invited papers centered about a particular subject—more than twice as many as the 72 sessions devoted to contributed papers or shorter accounts of current research.

Over the years, in AAAS meetings, the proportion of symposia has increased while the number of sessions for contributed papers has decreased. This is striking in the case of the sectional programs. Now, typically, only five sections may have no more than ten sessions for short reports of current research; and these sections, as well as the other sections, feature symposia. It might be expected that a

Table 2. Comparison of AAAS sectional programs and society programs.

Session	AAAS, its sections, committees, and conferences	Participating societies	Total number of sessions with papers	Total number of speakers
Sessions for symposia, invited papers, panels	75 (415 speakers)	83 (515 speakers)	158	930
Sessions for contributed papers*	11 (90 speakers)	61 (468 speakers)	72	558
Sessions with addresses or lectures†	31 (70 speakers)	18 (38 speakers)	49	108
Totals			279	1596

* Each paper is assumed to have been presented by a single speaker. † Addresses at meal functions are included.

society participating in a AAAS meeting—especially if it is holding a large-scale national meeting—might have principally, or only, sessions for contributed papers, but this is not true. Even in such instances, the number of societal symposia sessions is rising. The American Society of Zoologists, which scheduled 27 sessions for some 231 short papers, for instance, also sponsored 11 symposium sessions. The participating societies that are presenting special programs at AAAS meetings, quite apart from their regular, large-scale national meetings, almost invariably arrange symposia, and these are on carefully chosen or related topics. Thus, as shown in Table 2, societies collectively may have more symposia sessions than the AAAS committees and sections combined.

In the Eighth Washington Meeting there was balance between programs of concern to specialists, programs in interdisciplinary areas, and programs concerned with matters of import for all scientists. In addition, there were carefully planned women's events, sessions for the science-minded public, and certain sessions especially for local high school science students.

For the first time, the Association cooperated with the U.S. Employment Service in providing space for a Professional Placement Center that operated daily. It was open to all registrants and there were no fees. Apparently it was decidedly successful in that a substantial number of employers and those seeking a change in jobs were brought together. A report of this activity will follow.

Within the limits of the available physical facilities, societies affiliated with the AAAS are welcome to meet with the Association on any scale they wish—in a full national meeting, in a special or regional meeting, or simply as cosponsors of a program arranged by a section or another society. The Association has provided session rooms and projectors, and has printed program details, all without assessment. In turn, in general, the memberships of the societies have registered—and thus helped to support the meeting—while their numbers have contributed to an attendance total attractive to exhibitors.

Arrangements of the Meeting

There have been numerous compliments on the arrangements of the 133rd AAAS meeting, but, inevitably, there were also some disappointing aspects.

As always, there were a few instances where unexpected illness, accidents, or difficult travel conditions prevented a speaker or a presiding officer from attending. In general, no session had to be canceled other than the invited address of Sir Lawrence Bragg, retired director, The Royal Institution, London. He was prevented from attending because of illness. Fortunately, his address, "The art of talking about science," has already appeared in *Science* for 30 December (**154**, 1613), and already has evoked requests to reprint.

Large though the attendance was, each day there were so many concurrent sessions of interest that, inevitably, some programs had audiences smaller than they merited. Commonly, however, such instances were due more to inadequate or insufficiently early publicity than to direct conflicts of content. Conversely, there were other session rooms that were crowded to the point of having standees, and thus proved to be too small for the anticipated attendance of the programs assigned to them. In general, however, the facilities of the 279 sessions that had speakers were satisfactory.

As headquarters hotel, the Sheraton-Park was the location of the Annual Exposition of Science and Industry, the Science Theatre, the AAAS Office, the AAAS Pressrooms, and the Professional Placement Center of the U.S. Employment Service. The lobby had the principal facilities for handling registration, requests for information on the meeting and on Washington, and the AAAS membership booth. The AAAS Office sold tickets for meal functions, and for ladies' tours to the White House and to the Smithsonian Institution's new Museum of History and Technology; ladies' headquarters were maintained in the Gilded Cage in the lobby; and the Visible Directory of Registrants was in the entrance to the Ballroom.

The business sessions of the Association, the large evening events, and most of the general events were held in the Sheraton-Park. In general, this hotel housed the chemists, the numerous biological and medical groups, and such organizations as Sigma Xi and Phi Beta Kappa. The Book Lounge of the Society of Systematic Zoology was a popular headquarters for all biologists.

Down eight stories and across the street, at the Shoreham Hotel, sessions were held by the AAAS sections on Physics (B), Astronomy (D), Anthropology (H), Psychology (I), Agriculture (O), Education (Q), and Statistics (U). Also at the Shoreham were the science teaching societies, Alpha Epsilon Delta, the American Association of Bioanalysts, American Physiological Society, American Psychiatric Association, and Sigma Delta Epsilon.

About one-third mile away, across Rock Creek Park, the Washington Hilton Hotel housed the sessions of the sections on Geology and Geography (E), Social and Economic Sciences (K), History and Philosophy of Science (L), Engineering (M), Dentistry (Nd), Pharmaceutical Sciences (Np), and Industrial Science (P). The section on Information and Communication (T) which had begun its sessions at the Sheraton-Park, finished them here with a luncheon that threatened to exceed the assigned facilities, an address by Isaac Asimov, a symposium in technical writing, the vice-presidential address of William Steere, and a cocktail party. Some of the societies at the Hilton were the History of Science Society, the related Society for the History of Technology, the Society for General Systems Research, and the groups in the social and economic fields.

Projection

At any scientific meeting projection is always of critical importance. Very few other meetings, if any, have projection requirements as heavy and as various as the heterogeneous sessions of the AAAS. Many of the usually 200 to 250 sessions that request projection often must be supplied not only with equipment that can handle 2- by 2-inch (35-mm) and "standard" 3¼- by 4-inch slides, but also with other items such as 16-mm and 8-mm motion picture equipment, overhead projectors, and opaque lanterns. Participants from abroad may have slides of other sizes so that adapters must be located or built.

To rent the entire variety of projectors and screens needed for an AAAS meeting from commercial sources, and to engage professional projectionists at union rates for every session would be almost prohibitively expensive. Actually, the number of lanterns and operators needed would not be readily available even in the larger cities. The Association would be greatly handicapped if it were not possible to set up a local Committee on Physical Arrangements, and to borrow most of the equipment, typically from a city school system or from a series of university departments. Also, the AAAS would be hard pressed if younger teachers and students were not available as operators.

Fortunately for the very heavy demands of the Eighth Washington Meeting, the larger session rooms had screens available; the D.C. Public School System cheerfully lent nearly all of the projection and other equipment needed, and there were sufficient faculty members and students willing to serve as projectionists despite the holiday season. Heavy-duty projectors and professional operators, of course, were used for the Science Theatre.

Keith C. Johnson (director of science for the District of Columbia Public Schools) accepted the heavy responsibility of serving as chairman of the Committee on Physical Arrangements. With a relatively small staff, he worked from the data sheets that could not be supplied him before early December. He catalogued, assembled, and supervised the distribution of all projection equipment. He checked on the chairing and darkening facilities of each room. He arranged for a series of lantern-storage rooms from which to distribute the equipment each day. Finally, he arranged for what seemed a sufficient number of teachers and students to serve as projectionists, supervisors, and utility "trouble shooters." Despite the careful planning, however, a fresh snow and difficult driving kept some of the projectionists from reporting on time, or even made them absent. In general, all assignments were covered, though in a number of instances volunteers from the attendance had to be recruited. Thomas Sheehan (assistant director of Audio Visual Instruction) and his department also merit especial commendation for their very substantial contribution.

A total of 191 pieces of equipment, from electric pointers and extension cords to 2 by 2's and heavy-duty 16-mm arc projectors, were used. Of the total of 172 projectionists who served, 62 were teachers, 45 students, 24 District of Columbia Public School staff members, 5 professionals, and 36 were persons from the audience who volunteered when unexpected shortages developed. The total number of projection requests was 425—of which 33 were emergency or "last minute," previously unscheduled requests. One section secretary, realizing that he had not yet requested an electric pointer, himself arranged to hire it.

Other Meeting Arrangements

As in any city where the AAAS meets, the Washington Chamber of Commerce Convention Bureau operated a Housing Service that received all applications for sleeping accommodations at convention rates and forwarded them to the three hotels that were used. The Bureau proved to be understaffed so that backlogs of applications would accumulate. At the time of the meeting, all registration clerks came from the Convention Bureau, and they did a good job. Of the 7617 registrants, 3456 were advance registrations, handled at the AAAS office between 1 August and 15 Decem-

Staff Changes

Raymond L. Taylor

Walter G. Berl

Raymond L. Taylor retired on 31 January 1967 after 18 years of service as associate administrative secretary of AAAS. Dr. Taylor has been responsible for the annual meeting and exposition, and for relations with AAAS sections and approximately 300 affiliated societies.

Walter G. Berl (Applied Physics Laboratory, Johns Hopkins University, Silver Spring, Maryland), has assumed the duties of AAAS meeting editor on a part-time assignment. He will be assisted by meeting manager Daniel Thornhill who is leaving his current position with the National Academy of Sciences.

ber. Since Washington is the headquarters city of the Association, it was possible to have more AAAS staff in the AAAS Office, and at the Information Center, the Visible Directory of Registrants, the Science Theatre, and in the exhibit area.

Registration slips were collected from four registration points at intervals throughout each day, then were arranged in alphabetical order and posted in the Visible Directory of Registrants. A group of workers handled the posting, answered the directory telephone, and also assisted registrants in locating names or adding hotel room data to their slips. On behalf of the Association I should like to acknowledge here the help of each and every staff member.

Highlights of the Meeting

The Committee on Meetings has the primary responsibility for selecting the speakers for the Moving Frontiers of Sciences lectures and the invited speaker for the AAAS Distinguished Lecture (the second evening) and for general supervision of the pattern of the meeting. The Committee, meeting jointly with the section secretaries, also selects the several interdisciplinary symposia and the program chairmen who will develop them. These events, the other special sessions, the vice-presidential addresses, and a few of the invited addresses of the participating societies constitute the anticipated highlights of the meeting. These will be considered in approximate chronological sequence.

The Association's Moving Frontiers of Science, presented at each meeting, was held the evening of 26 December and the afternoon of 28 December in the large ballroom of the Sheraton-Park Hotel.

Part I consisted of two lectures, "The historical roots of our ecologic crisis," by Lynn T. White, Jr. (University of California), and "The changing man," by Theodosius Dobzhansky (Rockefeller University). Hudson Hoagland (AAAS Board member) presided.

On the second evening, 27 December, John K. Taylor (president, Washington Academy of Sciences) presided at the Academy's special invited lecture. The speaker for this session was P. M. S. Blackett (president, The Royal Society, London). His topic, "The ever widening gap," was a thoughtful elaboration on the current status of science and technology in the older and better established countries, in contrast with those that are underdeveloped.

On the morning of 28 December, "AAAS Day," the three interdisciplinary symposia—Pollution Control; Population Control, Part III: Political Implications; and Society and Information Resources—were presented concurrently.

The interdisciplinary symposium, Pollution Control, was a joint program of the AAAS sections on Engineering (M) and Agriculture (O). It was Part I of the former's two-part symposium, Engineering for Pollution Control, and Part V of the latter's seven-part symposium, Agriculture and the Quality of Our Environment. This key session was organized by Harris B. Stewart, Jr. (ESSA), who also presided. Speakers were Norton N. Nelson (New York University Medical Center), Donald W. Pritchard (Johns Hopkins University), Vernon G. MacKenzie (Public Health Service, Washington, D.C.), Joseph A. Lieberman (U.S. Atomic Energy Commission), and Athelstan F. Spilhaus (University of Minnesota). This session is reviewed in this issue by Stewart.

The interdisciplinary symposium, Population Control, a program of the AAAS Council Study Committee on Population Explosion and Birth Control, cosponsored by AAAS sections on Zoological Sciences (F) and Anthropology (H), the Ecological Society of America, and the Society for the Study of Evolution, proved to be of wide interest. Regional Programs—Political Implications was Part III of the Council Study Committee's symposium. The program was arranged by George G. Mallinson (Western Michigan University), who also presided over the presentation of papers by Bernard Berelson (Population Council, New York), Amos Hawley (University of North Carolina), and Joseph M. Stycos (Cornell University).

The title of Section T's program, Society and Information Resources, reflected its interdisciplinary nature. This symposium was arranged by Robert A. Harte (American Society of Biological Chemists); C. E. Sunderlin (National Academy of Sciences) presided. Speakers included Howard Simons (Washington *Post*), William D. Garvey (Johns Hopkins University), John Sherrod (Atomic Energy Commission), and Harrison Brown (National Academy of Sciences).

At the second session of the Moving Frontiers of Science lectures, Thomas F. Malone (The Travelers Insurance Companies) spoke on "Implications of the new horizons in research on weather modification," and Daniel S. Greenberg (*Science,* AAAS) spoke on "Problems of securing constructive legislation." Paul E. Klopsteg (AAAS Board member) presided.

After a brief intermission, also on the afternoon of 28 December, George Wald (Harvard University) spoke on "Color vision: model and reality" for the Seventh George Sarton Memorial Lecture, sponsored by the History of Science Society. Don K. Price (president, AAAS) presided.

The AAAS Presidential Address and Reception which concluded AAAS Day, 28 December, will be mentioned separately.

"Science, a wellspring of our discontent," was the topic chosen by Walter Orr Roberts (National Center for Atmospheric Research) who gave the annual joint address of the Society of the Sigma Xi and the United Chapters of Phi Beta Kappa on the evening of 29 December. Roberts was introduced by H. Bentley Glass (AAAS Board member).

The annual illustrated lecture of the National Geographic Society, "International 89," presented on 30 December by Ralph Gray (National Geographic Society) concluded the week's impressive list of special sessions. Walter Orr Roberts, just elected as AAAS president-elect for 1967, presided.

Sixteen of the 20 AAAS sections, including Section M for the first time in recent years, sponsored vice-presidential addresses. Presidential and other important addresses, under the auspices of the participating societies, are mentioned in the separate reports which appear elsewhere in this issue. Other highlights of this year's meeting were the AAAS Presidential Address and Reception.

AAAS Presidential Address

The address of the retiring (118th) president of the Association, Henry Eyring, was presented on the customary evening, 28 December, before a large and responsive audience in Sheraton Hall. President Alfred S. Romer presided and introduced the Honorable John W. Gardner (Secretary, Department of Health, Education, and Welfare; and a former member of the

AAAS Board of Directors), general chairman of the Eighth Washington Meeting. He graciously welcomed all AAAS registrants to the scientific community of the metropolis. David S. Hogness (Stanford University School of Medicine) was announced as the 1965 winner of the Newcomb Cleveland prize for his paper, "The structure and function of the DNA from bacteriophage lambda," read in the AAAS interdisciplinary symposium, Recent Advances in Nucleic Acid and Protein Chemistry, arranged by Wendell M. Stanley for Section C at the Berkeley meeting of 1965.

An announcement was also made of the winners of the AAAS Socio-Psychological Prize: Ivo K. Feierabend and Rosalind L. Feierabend (San Diego State College), for their paper on "Systemic conditions of political aggression: an application of frustration-aggression theory."

Henry Eyring's scholarly address as retiring president, "Untangling biological reactions," has appeared in *Science* for 30 December (**154**, 1609). Following the address there was an informal reception in the adjacent Park Room, where simple refreshments were served. For those in the receiving line it was, as always, a pleasure to be able to greet so many members and friends of the Association.

Other AAAS General Sessions

The three interdisciplinary symposia presented concurrently on "AAAS Day," 28 December, have been discussed earlier in this report. One of these concurrent sessions, Population Control: Regional Programs—Political Implications, was third in a series of programs presented by the AAAS Council Study Committee on Population Explosion and Birth Control, of which George W. Wharton (Ohio State University) is chairman.

Parts I and II of the symposium on Population Control—Mechanisms, and Impact of Modern Medicine—respectively, were presented on 27 December. David E. Davis (Pennsylvania State University) arranged the first session, presided, and made introductory remarks. Papers were read by David Pimentel (Cornell University), C. H. Buckner (Canada Department of Forestry), Charles Krebs (Indiana University), and Ulia Olin (United Nations Development Programme). Arrangers and presiding scientists for Part II were Lora M. Shields (New Mexico Highlands University) and Paul Van Zandt (Youngstown University). Speakers on the implications of modern medicine's impact on population control were Samuel M. Wishik (University of Pittsburgh), David M. Heer (Harvard University), and Martin D. Keller (Ohio State University).

A two-part symposium entitled Migration to Arid Lands was given on the morning and afternoon of 29 December. This program of the AAAS Committee on Arid Lands was arranged by Marion Clawson (Land Use and Management Program, Resources for the Future, Inc.), who also presided. The speakers for Part I were Homer Aschmann (University of California), Neil Goldberg (Lovelace Foundation), Benjamin Higgins (University of Texas), and Stephen C. Smith (Colorado State University). Speakers for Part II were Dean E. Mann (University of California), Wynne Thorne (Utah State University), and R. W. Richardson, Jr. (Rockefeller Foundation).

Table 3. Registrants by subject fields.

Mathematics	212
Computers	38
Statistics	74
Physical Sciences	
Physics	353
Astronomy	75
Astronautics and space science	70
Meteorology	52
Chemistry (other than medical)	337
Geology	261
Marine geology, physical oceanography	64
Geography	38
Biological Sciences	
Zoological sciences	
Anatomy	19
Animal behavior	121
Developmental biology, embryology	142
Endocrinology	82
Entomology	45
Herpetology	25
Invertebrate zoology	60
Parasitology	27
Physiology (animal, comparative)	258
Systematic zoology	34
Vertebrate morphology	28
Zoology (all other)	383
Botanical sciences	186
Cellular and molecular biology	54
Ecology	
Plant ecology	29
All other ecology	244
Evolution	28
Genetics	122
Fisheries biology	20
Marine biology, biological oceanography	62
Biology (in general and other)	575
Medical Sciences	
Audiology, speech pathology	12
Biophysics	46
Biochemistry	296
Clinical chemistry	19
Dental Research	69
Microbiology, virology, bacteriology	94
Nutrition	41
Pharmaceutical sciences	137
Physiology and neurophysiology	85
Psychiatry	77
Alcoholism	16
Medicine (in general, and other)	378
Psychology	370
Anthropology	146
Social and Economic Sciences	
Economics	42
Political science	43
Population	16
Sociology	49
Other social fields	47
Industrial science, operations research	64
History and philosophy of science	117
General systems research	34
Agriculture, soil science	125
Conservation	37
Pollution	61
Engineering (including lasers)	162
Education	176
Science teaching, nature study	128
Information and communication	177
Administration, research and other	57
Science in general	82
Students (fields unspecified)	38
Wives (fields unspecified)	159
No fields indicated	99
Total	7617

The symposium on the Utility of the Construct of Race, presented on 30 December in three parts, was a joint program of the Committee on Science in the Promotion of Human Welfare and the Committee on the Biological and Social Aspects of Race of the Scientists' Institute for Public Information, cosponsored by AAAS sections on Zoological Sciences (F), Anthropology (H), Psychology (I), and the Animal Behavior Society. In the first session of the program, Ethel Tobach (American Museum of Natural History) presided and Margaret Mead (American Museum of Natural History), the committee's chairman, made introductory remarks. There were papers on "Boldness and judgment in behavior genetics," by Herbert B. Birch (Albert Einstein College of Medicine), "Genetic inequalities in behavioral potential in the human species," by Benson E. Ginsberg (University of Chicago) and William S. Laughlin (University of Wisconsin), "Behavior-genetic analysis and the study of man," by Jerry Hirsch (University of Illinois), and "The relevance of strain differences in animals to studies of man," by Peter H. Klopfer (Duke University). Discussing these papers were Edmund W. Gordon (Yeshiva University) and J. P. Scott (Bowling Green State University).

Theodosius Dobzhansky presided at the second session of the Committee's program, with papers on "Historical review of science's approach to race," by Loren C. Eiseley (University of Pennsylvania), and "The utility of the biological concept of race," by Bentley Glass (State University of New York at Stony Brook) and Paul T. Baker (Pennsylvania State University). Ernst Mayr (Harvard University) discussed these papers.

Hudson Hoagland presided at the third and final session, with papers being presented on "Social relevance of classification by race," by Dwight J. Engle (University of Chicago) and Morton Fried (Columbia University),

and "Relevance for individuals of classification by race," by Irwin Katz (University of Michigan) and Gloria Marshall (New York University). Kenneth B. Clark (City College of New York) was discussant for this session, and Margaret Mead presented closing remarks.

Clearly indicating the wide attraction of relatively new subject matter, three programs that happened to be noticed as drawing overflow audiences were: (i) Physics of the Moon, a two-part program of the American Astronautical Society, arranged by S. Fred Singer (University of Miami); (ii) Ultraviolet, X-ray, and Gamma-ray Observations from above the Atmosphere, a symposium sponsored by the AAAS section on Astronomy (D), cosponsored by Section B (Physics), arranged by David Fischel (Goddard Space Flight Center); and (iii) the symposium on Holography, sponsored by Section M (Engineering), arranged by Anthony Di Pentima (CBS Laboratories) at the request of Paul Rosenberg, chairman of the Section.

The Academy Conference

The Academy Conference of the Association, essentially a AAAS committee composed of the official delegates of the 47 affiliated state and city academies of science, had an excellent program. Putting the annual reports of the constituent academies into written form has made possible both a morning and an afternoon program session. This year's meeting, as usual, was held 27 December.

At this 38th meeting of the Academy Conference, the third program of the continuing series on The Academies of Science between Meetings was devoted to the Role of State and Local Academies of Science in the Public Understanding of Science. The speaker was E. G. Sherburne, Jr. (director, Science Service) who until recently had been the Association's director of public understanding of science program. The discussants were AAAS Board chairman Henry Eyring, John H. Melvin (secretary of the Ohio Academy of Science and president-elect of the Conference), and J. Teague Self, of the Oklahoma Academy. President James A. Rutledge presided.

In the afternoon the subject was Publications and Academies of Science. The speaker was Robert E. Gordon (department of biology, University of Notre Dame). With three editors as discussants—Gordon H. Bixler, *Chemical and Engineering News;* R. Hobart Ellis, Jr., *Physics Today;* and Sylvia W. Rosen, of the Minnesota Academy of Science—a stimulating exchange of opinion was assured. V. Elving Anderson (incoming president, from the Minnesota Academy) presided.

The Academy Conference Dinner with some 42 present was a pleasant ending of a constructive day. Karlem Riess, (past president of the Academy Conference from the New Orleans Academy) presided. The presidential address by James A. Rutledge, "The requisites of a strong academy," was a thoughtful, well-presented summary of the subject.

On the following day, the Conference's Junior Academies Committee sponsored two sessions of orginal research papers presented by junior scientists from some 16 communities in eight states and the District of Columbia. All concerned are indebted to E. L. Wisman (department of biochemistry and nutrition, Virginia Polytechnic Institute) who was in charge.

A final responsibility of the Academy Conference is the annual Junior Scientists Assembly, exclusively for local young people interested in science and scientific careers. At the 133rd AAAS meeting, the 20th Assembly was particularly well presented when the Washington Junior Academy of Sciences agreed to merge its regular Christmas Meeting with the Assembly. The program, held on the campus of Georgetown University, 27 December, was arranged by a committee consisting of Keith C. Johnson (supervising director of science, D.C. Public Schools), Philip W. Wirtz (president, Washington Junior Academy of Sciences), and John F. Williams III (convention chairman, Washington Junior Academy of Sciences).

> In surveying the recent Eighth Washington Meeting, at this time the writer, inevitably, is also recalling the others that preceded it since 1949. The writer not only has enjoyed meeting an exceptional number of fellow AAAS members, but has also found it a richly satisfying experience to have worked with such a great variety of others who believe in the Association and its objectives.
>
> This last account could not be complete without an overall tribute and expression of gratitude for the friendly cooperation he has received on all sides and at all levels. Included are convention bureau and hotel personnel in all parts of the country; an almost staggering variety of program chairmen and session arrangers; and all the AAAS officers, board members, and an ever-enlarging headquarters staff which it has been the writer's great privilege to know.
>
> In short, this congenial atmosphere and shared concern for the Association's objectives has made the writer's responsibilities not only possible but happy! The writer cannot find words to express his profound appreciation to all.
>
> —R.L.T.

AAAS Business Sessions

The AAAS section officers' luncheon and business meeting was held on 28 December. Cochairman Dael Wolfle announced the writer's impending retirement and said that at all future AAAS meetings that he attended, the writer could be as critical as desired! The responses of those present are much appreciated and will long be recalled.

The Association's Board of Directors, as required by the constitution, held its fourth regular meeting of the year at the annual meeting. The session, as usual, preceded the meeting of the Council (30 December). The Council session was very well attended; many societies found it possible to appoint alternates in the event their regular representatives could not attend.

The Attendance

In number of registrants (7617), the Eighth Washington Meeting was the largest in the 119-year annals of the Association. The number of paid registrants exceeded the previous record-high attendances in New York in 1960 (7389) and 1949 (7014), and in Berkeley in 1965 (7028). In general, AAAS meetings are getting larger. Between World Wars I and II, just five AAAS meetings had 3000 or more registrants: Washington, 1924; New York, 1928; Philadelphia, 1926 and 1940; and Indianapolis, 1937. Of the 21 of the 133

AAAS meetings that have had more than 3000 registrants, 15 have been meetings held in the past 18 years. With its present pattern of high quality and timely interdisciplinary topics, the Association is now able to count on its meetings being well attended wherever they are held.

Moreover, it is always true that the total attendance at any national meeting of the Association is substantially greater than the number of registrants, since all programs and most events are open to everyone. As usual, nearly all of the professional scientists and teachers registered.

In addition, however, there are always several thousands of science-minded members of the general public who attend the evening lectures or some other event who do not register at all. Even a technical program may be attended by several times the number of individuals registered for that discipline (see Table 3). It is probable that at the Washington meeting at least an additional 5000 individuals attended one or more of the 408 sessions. Finally, the registration total of 7617 does not include 11 guests, 449 individuals connected with the exhibits, and 449 press representatives.

As Table 4 shows, more registrants came from the adjacent state of Maryland than from the District of Columbia proper. Every state had from 2 to 1507 representatives, and no section of the nation was underrepresented. About 40 percent of the attendance could be considered "local" or from within a 60-mile radius.

In the previous Washington meeting of 1958 the registration total was 5368, still the Association's sixth largest meeting in size. In that year almost 20 percent of the attendance came from the District of Columbia, 23 percent from the entire state of Maryland, and about 9 percent from all of Virginia. This year, however, the percentages of attendance were 13 percent from the District; almost 20 percent from Maryland; and about 9 percent from all of Virginia.

Thus, in only 8 years, the Association's Washington meeting has become more cosmopolitan: An additional 10 percent of the total attendance came from the rest of the world! A better than three-fold increase over the previous Washington meeting in scientists from Canada (147 vs. 43) was particularly gratifying. Of the 32 visitors from 16 other countries, some were visiting scholars at American institutions but probably at least half came especially for this meeting.

Table 3 is an analysis of the 7617 registrants by subject fields, except for 99 cases where the "field of interest" line on the registration slip was left entirely blank.

In this analysis of subject fields an effort was made to record each individual's primary interest. For example, high school science teachers who indicated their major interest as teaching or science education were not classified as biologists or chemists. However, science teachers who stressed disciplines were tallied accordingly. Those who listed science education for the most part were teachers of elementary and secondary science teachers, administrators, and curriculum planners.

Since the zoologists were so numerous—there were at least 1224 of them—they were further subdivided. There were 121 who stated "animal behavior," for instance; it is impossible to say how many others in this increasingly active field were listed under ecology or zoology. Conversely, more than 10 protozoologists, mammalogists, or ornithologists (all lumped together under "zoology") very probably did not name their subdisciplinary research fields.

If the data on disciplines are grouped under still broader headings than those of Table 3, the registered attendance may be categorized as follows: Physical sciences and applications, 1951 (25.6 percent); biological sciences, 2767 (36.3 percent); medical sciences, 1270 (16.7 percent); social and economic sciences, 770 (10.1 percent); science teaching and education, including information and communication, 481 (6.3 percent); and general interest and other, 378 (5 percent).

The percentages for these groups have remained much the same in recent years except for instances when physical sciences would take first place by a slight margin—as in 1952 in St. Louis and in 1957 in Indianapolis. Again at Washington, however, the biological sciences took first place over the physical sciences by a substantial margin. The zoologists alone may have exceeded their attendance at Berkeley—their largest meeting up to that time. The visiting naturalists, botanists, ecologists, and members of the Society for the Study of Evolution and of Beta Beta Beta swelled the biological grouping.

The strong series of programs in the social and economic fields, including

Table 4. Distribution of registrants by states and countries.

United States		Texas	80
Alabama	19	Utah	17
Alaska	5	Vermont	16
Arizona	20	Virgin Islands	1
Arkansas	5	Virginia	659
California	206	Washington	26
Canal Zone	1	West Virginia	27
Colorado	49	Wisconsin	75
Connecticut	125	Wyoming	2
Delaware	62		
District of Columbia	1002	Total U.S.	7438
Florida	76		
Georgia	52	*Canada*	
Guam	1	Alberta	8
Hawaii	10	British Columbia	8
Idaho	5	Manitoba	4
Illinois	278	New Brunswick	3
Indiana	73	Newfoundland	3
Iowa	39	Nova Scotia	6
Kansas	29	Ontario	86
Kentucky	35	Prince Edward Island	1
Louisiana	38	Quebec	26
Maine	22	Saskatchewan	2
Maryland	1507		
Massachusetts	318	Total Canada	147
Michigan	186		
Minnesota	45	*Other Countries*	
Mississippi	13	Bermuda	2
Missouri	63	Brazil	3
Montana	8	Czechoslovakia	2
Nebraska	10	East Pakistan	1
Nevada	2	France	1
New Hampshire	37	Germany	3
New Jersey	260	Italy	2
New Mexico	19	Japan	1
New York	884	Korea	1
North Carolina	131	Lebanon	1
North Dakota	7	Mexico	1
Ohio	206	Netherlands	2
Oklahoma	19	New Zealand	1
Oregon	26	Spain	1
Pennsylvania	480	Switzerland	1
Puerto Rico	11	United Kingdom	9
Rhode Island	59		
South Carolina	22	Total other countries	32
South Dakota	7		
Tennessee	63	Grand total paid registrants	7617

criminology, again brought the percentage for social science registrants up to a little over 10 percent. The percentage for science teaching would have been considerably higher if many more than the 304 science teachers and educators had not indicated their teaching specialties first.

Annual Exposition of Science and Industry

The Annual Exposition of Science and Industry for 1966 was one of the most convenient ever presented. The 115 exhibitors in 143 booth spaces were in Exhibit Halls No. 1 and No. 3 of the Sheraton-Park Hotel—in close proximity to the larger session rooms one floor above. This meant that short visits, and repeated visits, could be made to the exhibits with a minimum of time and steps.

The Exposition was attractively laid out in gold bengaline. The overhead illumination was ample for most displays. To facilitate guarding and to insure equal exposure to booth traffic, as usual there was only one entrance and exit.

The show was well-balanced—composed of publishers, the major supply houses, instrument companies, laboratory equipment firms, and representative industrial concerns such as the American Gas Association, General Motors Corporation, Research Laboratories, 3M Company, and Vitro Corporation of America. Finally, there was an impressive series of special governmental exhibits, some especially built for this AAAS meeting. The Combined Book Exhibit, an improvement over the AAAS-operated Science Library of former years, especially in that a printed book list of the displayed volumes was available, was larger than the one at the Berkeley meeting.

The original floor plan of the Exposition was "sold out" months before the meeting, but the addition of several more booths in Exhibit Hall No. 3 made it possible to accommodate some of the many requests. Not listed in the *General Program*, the additional exhibitors were Alton Electronics; American Instrument Company; Commerce Clearing House; General Precision, Inc.; and the Naval Research Laboratory.

In summary, those who attended were very pleased with the variety and attractiveness of the exhibits; and subsequently, the exhibitors have expressed satisfaction with the booth arrangement and "booth traffic."

Donald S. Bittinger (president, Washington Gas Light Company) and the local Committee on Exhibits which he headed enlisted the interest and support of a number of large firms in the Washington area. Grateful acknowledgement of the work of the Exhibits Committee and especially of John Green (Washington Gas Light Company) who served as secretary, is made on behalf of the Association.

Again we are most grateful to Earl J. Scherago and Dick Callis from the advertising office of *Science* for their devoted and most helpful services in connection with the floor management of the exhibits.

AAAS Science Theatre

The AAAS Science Theatre, a popular and well-established feature of the annual meeting since the 1947 Chicago meeting, presents a selection of the latest foreign and domestic scientific films. At the Eighth Washington Meeting, 45 16-mm films were shown in seven 4-hour programs and in an abbreviated eighth session. The film titles and producers appeared in the Preconvention Issue of *Science* [**154**, 3753 (1966)]. Most films were shown twice, and some a third time. The cooperation of the lending agencies is greatly appreciated. Special thanks go to Alec Hughes (British Association for the Advancement of Science) for attracting the attention of British film producers to our program. As a result, five English-made films were shown in this year's Theatre. Thanks, too, are extended to the embassies of Australia and the Netherlands for their contributions to this year's film program.

All but one of the films that had been requested, *Oceanographic Research Using the Cousteau Diving Saucer* (U.S. Navy Electronics Laboratory) were on hand and in good season. This, and the choice of titles, in large part, reflected the diligence and dedication of Marlyn Jean Lippard, in the writer's office.

For the first time, this year a description and source sheet for each film shown was available, and a film suggestion box was added for anyone wishing to inform the AAAS of recent or noteworthy scientific films. Inquiries about any of the 45 films should be directed to the producers.

Work of the Local Committees

Each year there are new registrants, new AAAS members, and even new staff members who come to realize that a scientific meeting of such proportions as the annual meeting of the AAAS does not just happen. It cannot take place, nor can it succeed, without the cooperation and assistance of a great many agencies and persons. Of critical importance among these are the local committees. The general chairman appoints the chairmen of the several committees; the balance of each committee is then appointed by its own chairman. This was the plan followed last December.

The Association and all who attended the Eighth Washington Meeting are deeply indebted to John W. Gardner, who, as general chairman, made distinguished appointments of chairmen of the local committees, kept in close touch with all phases of the meeting, and graciously welcomed members and friends of the Association on the evening of 28 December. We are much indebted to Milo D. Leavitt (deputy assistant secretary for science and population, Department of Health, Education, and Welfare; executive secretary of the local committees) for the considerable time he spent and for his personal interest.

The strenuous work of the Committee on Physical Arrangements and the contribution of the Committee on Exhibits are acknowledged above. The other committees, in their respective fields, also contributed greatly to the meeting.

The Committee on Public Information was headed by B. Richard Berg (Director of Public Information, Smithsonian Institution), who provided expert advice and assistance in securing local publicity and in providing excellent local coverage. The Association expresses its grateful appreciation to every member of this committee for his or her contributions. Additional details on this, and on the splendid national coverage during the meeting, both in the press and on radio and television, will be found in a report by Thelma C. Heatwole, Director, Office of Public Information for the 1966 Meeting, in this issue.

The Association is grateful to the local Committee on Women's Events, headed by Mrs. Glenn T. Seaborg. Wives were welcomed in the Gilded Cage, in the Sheraton-Park lobby, and

special trips to the White House and Smithsonian's Museum of History and Technology, with a behind-the-scenes view of the Museum's activities, were arranged for the ladies. Highlight of the Women's Events was the luncheon in the Shoreham's Blue Room on 29 December, at which Mary I. Bunting (president, Radcliffe College, and former Commissioner, Atomic Energy Commission) was the guest speaker. Dr. Bunting spoke on Higher Education and the Female Consumer, and later graciously responded to questions from the floor.

The Honorary Reception Committee included the heads of public and private agencies concerned with science and education. Their willingness to endorse the Association and its 133rd national meeting is much appreciated.

Other Acknowledgments

Besides thanking all members of the local committees, this report expresses appreciation to the key executives of the hotels which provided assistance and friendly help throughout—especially George Gorman of the Sheraton-Park; John E. McMurtagh, Mrs. Florence Homann, and Nickolas Karas of the Shoreham; and Lawrence K. Green of the Washington Hilton. Their cooperation and courtesy were essential for the success of the meeting.

The secretaries and program chairmen of the sections and participating organizations cooperated ably, especially in providing copy and galley proof for the 352-page *General Program*, published by the Horn-Shafer Company of Baltimore. The perennial debt to W. Gilbert Horn, Jr., of that firm, for his able and sympathetic cooperation in seeing the program through the press is more than nominal. Particular thanks are due Mary Anne Lipford who did most of the editorial assistance with the program copy. Finally, we are grateful to all AAAS staff members not previously mentioned who worked long, hard, and cheerfully at the meeting.

Prizes and Awards

The AAAS-Westinghouse Science Writing Awards for 1966 were presented to John Kolesar (special assignment writer for the *Evening Times*, Trenton, New Jersey); Evert Clark (science writer for the New York *Times*); and Albert Rosenfeld (science editor of *Life* Magazine). John Kolesar won the new $1000 award for newspapers with under 100,000 daily circulation for his story on "The C stellarator. It's hot as the sun," which appeared in the Trenton *Evening Times* on 16 May 1966. The article concerns the goal of electric power through controlled nuclear fusion. Evert Clark won the $1000 award for newspapers with over 100,000 daily circulation for a series of articles on Surveyor I's landing on the moon. The nine articles appeared between 31 May and 14 July 1966, in the New York *Times*. Albert Rosenfeld won the $1000 award for magazine writing with "The new man —what will he be like?" (Part IV from his Control of Life series), published 1 October 1965, in *Life*. The article explores the implications of new scientific breakthroughs in biology and medicine and their possible effects on man. Honorable Mention in the over 100,000 circulation category was awarded Harry S. Pease of the Milwaukee *Journal*; a special citation was awarded the Minneapolis *Tribune*.

The awards, made possible by a grant from the Westinghouse Educational Foundation, were established to give recognition and encouragement to outstanding science writing, to stimulate public interest in science, and to foster a deeper understanding of science by the public.

The winner of the Procter Award of the Scientific Research Society of America was Elmer W. Engstrom (chairman, Executive Committee of the Board, RCA).

Mention has already been made of the winners of the AAAS Socio-Psychological Prize under the section "AAAS Presidential Address."

Public Information Service

Thelma C. Heatwole

The 133rd meeting of the AAAS in Washington, D.C., was, as usual, the focal point for science news in all areas of science. Public information for the annual meeting continued to foster the four objectives of the Association—to further the work of scientists, to facilitate cooperation among scientists, to improve the effectiveness of science in the promotion of human welfare, and to increase the public understanding and appreciation of the importance and promise of the methods of science in human progress. It is to this end that the Association maintains a public information service.

The initial step in public information for the annual meeting was taken in June when a local committee was selected. Richard Berg (director, Office of Public Information for the Smithsonian Institution) consented to serve as its chairman. Other members of the committee were Michael Amrine (public information officer, American Psychological Association), George J. Berklacy (press officer, Smithsonian Institution), Windsor P. Booth (director, News Service, National Geographic Society), Mrs. Marion Corddry (associate director of public relations for medicine/science, George Washington University), Ray E. Hiebert (director, Washington Journalism Center), Howard Lewis (Office of Information, National Academy of Sciences), and E. G. Sherburne, Jr. (director, Science Service).

This group helped to set the premeeting stage for informing the public throughout the world of the scientific progress that would be reported by

The author, who served as the AAAS director of public information at the 1966 AAAS Annual Meeting, is patent liaison officer for the Philip Morris Research Center, Richmond, Virginia.