

his hospitable assistants. With Mr. Tousley's compliments, luncheon was served in the press room for three days of the meeting. The Westinghouse Educational Foundation was host to the reporters at a luncheon on one of the days of the convention, and the American Tobacco Company Research Laboratory on another day. The General Electric Company held open house for all science reporters each evening of the week. The Harvard Club of Philadelphia made its quarters in the hotel available for conferences. Scouts representing the Boy Scouts of America, Philadelphia Council, served as messengers, and students of the Temple University School of Business and Public Administration acted as assistants to the three press room secretaries. Bernard A. Bergman, of Publicker Industries, Inc., and other members of the Philadelphia Public Relations Association were helpful in many ways. Marjorie R. Carmosin, publicity director for Drexel Institute of Technology, did an outstand-

ing job as our assistant in radio and television reporting. She arranged 42 programs, some of which were on the air from coast to coast. We are especially grateful to those who took part in these broadcasts.

Because of the splendid cooperation of authors of papers, section and society secretaries and program chairmen, members of the local public information committee, assistants in the press room, and many others, our long-time, competent friends—the news reporters—must have felt constrained to reciprocate by filing sheaves of copy. Requests for additional information about the meeting are now being received from all over the world. In the last analysis, our especial appreciation must be given the reporters who covered the meeting. It is they who ultimately make it possible for the Association to carry out one of its principal purposes: "To increase public understanding and appreciation of the importance and promise of the methods of science in human progress."



A Report of the Philadelphia Meeting December 26–31, 1951

Raymond L. Taylor

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THE return of the American Association for the Advancement of Science to Philadelphia, where it was founded more than one hundred years ago, was considerably more than a pleasant, commemorative occasion. In many respects the Association's seventh Philadelphia meeting was one of its most significant annual conventions.

A scientific meeting is deemed a success if the programs are good, if it is well attended, and if its major objectives are realized. By these criteria the 118th meeting was a success: In the number, variety, and quality of the symposia, in the excellence of the special sessions and of the contributed papers, few if any other meetings of the Association have surpassed it. In the number of paid registrations, this was the largest meeting ever held in Philadelphia¹—and only four other meetings have been larger in this respect. The convention brought together highly trained men and women of diverse disciplines to consider matters of general concern to them as scientists; it provided facilities for the meetings of specialists, and opportunities for the participation of the general public. Throughout the world, because of the excellent press coverage, public attention was directed to the importance of science and to its latest advances.

An important adjunct to scientific meetings—and a measure of their success—are the banquets or dinners arranged by sections and participating societies. In price, menu, and the speaker's after-dinner remarks, these can range from those that are sad and best forgotten to affairs that are pleasant and memorable. At the seventh Philadelphia meeting there were many particularly enjoy-

able meal functions. It was the writer's good fortune to attend the Botanists' Dinner, held under the auspices of Section G. It had been arranged by John M. Fogg, Jr., not in his capacity as vice provost of the University of Pennsylvania or as chairman of the Subcommittee of Physical Arrangements, but as a botanist in residence. For "technical reasons," the dinner originally limited to 75 had seatings increased to nearly 100; after dessert, another 25 or so were admitted to hear the introductory remarks of Stanley A. Cain and the talk of Ivey F. Lewis, retiring vice president of Section G. This traditional vice-presidential address was both an important summary of biological principles and their inescapably grim applications to man, and Dr. Lewis at his best as a raconteur.

Planning the meeting. Those who attend the sessions of a large scientific meeting, unless they have shared the experience of making some of the arrangements, may not realize the vast amount of planning and work required. The cooperation and services of many individuals are essential. The convention city is usually decided upon several years in advance, and only after a preliminary survey indicates that the physical facilities are adequate and generally satisfactory.

Early in the year of the meeting the session rooms are catalogued by capacities, relative desirability, provisions for darkening, need for microphones, the general furnishings, and location of black-out switches and obstructing pillars. Very early in the spring the secretary of each section and society must estimate the probable number of sessions and the attendance to be expected at each. Soon afterward, headquarters hotels for related societies are decided upon, and all meeting rooms are

¹ The registration totals for the sixth Philadelphia meeting (1940) and for the fifth Philadelphia meeting (1926) were 3339 and 3181, respectively.

tentatively assigned. The general formula is to place the largest of the sectional meetings in the auditorium and to locate the larger societies with concurrent sessions in the hotels with the greatest number of session rooms. Societies that meet with the AAAS usually may choose between session rooms in a hotel, on a campus, or a combination of both; their preferences for particular hotels can in general be met. In Philadelphia, the 1200-room Benjamin Franklin Hotel was the choice of the four zoological societies. Representatives of the three science-teaching societies chose the Hotel Adelphia. The Hotel Bellevue-Stratford was made the headquarters hotel of the Association, and it had the greatest concentration of the programs of the remaining sections and other participating societies. Here were held the annual lectures of the Society of the Sigma Xi and of the Scientific Research Society of America, and the AAAS Presidential Address and Reception. At the outset, laboratory facilities in the Medical School of the University of Pennsylvania were set aside for the demonstration sessions of the zoologists. As the programs developed, sessions were scheduled for other rooms on the campus, in the John Bartram, Ritz-Carlton, and Sylvania hotels, and at the Academy of Natural Sciences of Philadelphia, the American Philosophical Society, The Franklin Institute, and the University Museum. The annual lectures of the National Geographic Society, the United Chapters of Phi Beta Kappa, and the Honor Society of Phi Kappa Phi were scheduled for the Irvine Auditorium of the University of Pennsylvania. Here also was held the special two-session panel discussion, "Foods and People," arranged by Gove Hambidge.

The Local Committee. The interest and aid of key citizens of the city that has invited the Association to convene also must be enlisted early in the year if the meeting is to succeed. The Association was more than ordinarily fortunate in the acceptances of Edward Hopkinson, Jr., of Drexel & Company, and James Creese, president of Drexel Institute of Technology, as honorary general chairman and general chairman, respectively.

Three subcommittees made substantial contributions of their time and energy. The Subcommittee on Exhibits, headed by Hugh W. Field, vice president and general manager of Atlantic Refining Company, aided greatly in securing the participation of local industries in the exposition—indeed, to such an extent that no subcommittee on finance was necessary. The Subcommittee on Local Public Information, composed of talented specialists in all fields, and with Steven M. Spencer, associate editor of the *Saturday Evening Post*, as chairman, ably publicized the meeting locally through a diversity of media, including radio and television. The Subcommittee on Physical Arrangements, with John M. Fogg, Jr., as chairman, was drawn from appropriate persons in the educational and scientific institutions of Philadelphia. It did an outstanding job in collecting 116 pieces of projection equipment from some 40 sources, distributing it and such other equipment as screens, extension cords, spare lamps, chart hangers, etc., to the 46 rooms where the 248 sessions were held. This committee also provided and supervised all projectionists except in the Auditorium, where professional operators were employed. An Executive Committee of 20, with Dr. Creese as chairman, included the chairmen of the three subcommittees and the heads of many local industries; Allen T. Bonnell, vice president of Drexel Institute, was its efficient secretary. The debt of the Association and of those who attended the 118th meeting to these men is great indeed.

The General Reception Committee, of more than 150, included all those mentioned and many other heads of institutions and companies in the Philadelphia area. The officers of the Association and its 18 sections still recall most pleasantly the dinner given by the General Committee just preceding the AAAS Presidential Address.

Physical arrangements. All conventions of all organizations must be adapted to existing local conditions. In Philadelphia, the Auditorium, although nearly two miles from the downtown hotels, was adjacent to the University of Pennsylvania campus and not too difficult to reach by bus, street car, or taxi. Also, special buses were operated. Sizable session rooms in the Auditorium were few, and it was decided to convert the four corners of the large downstairs hall into separate session rooms. Too late, it was learned that neither the hall management nor the decorator had sufficient sound-muffling fire-proof material to extend to the ceiling for the four rooms; and eight-foot partitions of the same thin draping material used in the exposition would not have screened out light or sound, and thus would not have been worth their cost of more than \$1.00 per running foot. Instructions were given to dim the whole floor as much as possible and to use the most brilliant of the stereopticon lanterns. Unforeseen, however, were the applause between papers that interrupted speakers in the other corners, and the loquacity of the coat checkers. The improvised arrangements proved unsatisfactory, and apologies are due the botanists, dentists, geologists, geographers, and pharmacists, all of whom had just cause to be irritated. This particular expedient will be avoided hereafter.

The projection equipment, some of it brand-new, was lent by the University of Pennsylvania, Temple University, the School District of Philadelphia, the Bell Telephone Company of Pennsylvania, and the Philadelphia Electric Company. Projectionists in the Municipal Auditorium were professional union operators; nearly all those in the hotels were students, screened for their experience.

Housing and registration. The Housing Bureau was operated by the Philadelphia Convention and Visitors Bureau. Since only two instances of error or nonreceipt of confirmations were reported, it may be assumed that it functioned well. The registration clerks, also furnished by the Convention Bureau, were hard-working and pleasant, though not always adequately informed on all aspects of so complex a meeting. The Visible Directory of Registrants, as always, was much consulted. Since 1949, it has been possible to interpolate names in perfect alphabetical order throughout the meeting period. Upon occasion, however, registration slips can be misfiled or, more commonly, registrants will overlook their own names.

Attendance. The actual attendance at a AAAS meeting can never be more than a close estimate, because practically all the sessions, especially the evening lectures, are open to the public. One useful index of attendance, however, is the paid registrations. The detailed registration slips, taken from the Visible Directory, permit analyses of the home states and fields of interest of the registrants.

The number of registrants was 3702. This figure is particularly impressive when it is considered that the 3339 registrants of the 1940 AAAS meeting in Philadelphia were there to attend annual meetings of their own societies. This was true of the physicists, astronomers, entomologists, parasitologists, botanists, phytopathologists, geneticists, and horticulturists, none of whom held their annual meetings with the AAAS in

1951. From Table 1 it will be noted that, as in 1950, every state in the union was represented, with the sole exception of Nevada (which, however, always has proportionately good representation at the June meetings of the Association's Pacific Division).

TABLE 1

DISTRIBUTION OF REGISTRANTS BY STATES

Pennsylvania	1171	Minnesota	17
New York	510	South Carolina	17
New Jersey	343	Louisiana	15
Maryland	203	New Hampshire	14
District of Columbia	185	Alabama	13
Massachusetts	179	West Virginia	12
Illinois	115	Kentucky	11
Ohio	102	Vermont	11
Virginia	90	Colorado	10
Michigan	79	Nebraska	10
Connecticut	73	Maine	8
Delaware	71	Mississippi	8
Indiana	59	Washington	8
North Carolina	43	New Mexico	4
Tennessee	37	South Dakota	4
Florida	36	Montana	3
Texas	30	Oklahoma	3
California	27	Wyoming	3
Missouri	26	North Dakota	2
Rhode Island	26	Utah	2
Iowa	21	Arizona	1
Kansas	21	Arkansas	1
Wisconsin	20	Idaho	1
Georgia	19	Oregon	1
TOTAL		3665	

There were 37 registrants from outside the continental United States: 20 from Canada; two each from Brazil, Italy, and Puerto Rico; one each from Alaska, Cuba, East Africa, England, France, Germany, India, Norway, Thailand, Uruguay, and Venezuela.

The second index of total attendance at a AAAS meeting is the number of complimentary admission tickets to the Annual Exposition of Science and Industry, which are (1) distributed to members of scientific and professional groups who request them, either directly from the AAAS or through their local societies; or (2) given to exhibitors to send to preferred potential customers and to key members of their own organizations. The total number of tickets given out by the AAAS each year averages 10,000, about 40% of which may be filled out with sufficient information about the user for analysis of subject interests. At Philadelphia the system of metering all those who had complimentary cards of admission, or ensuring that their names, addresses, and fields of interest were properly recorded, could not be enforced. Nevertheless, a substantial number of such cards, completely filled out, was available at the end of the meeting. The fields of interest on these cards have been combined with those of the 3702 registrants (Table 2).

Subject fields are not as readily analyzed as geographical data. Some registrants may list as their field of interest a narrow research specialty, whereas others may name two or more major sciences. In the first case, it is nearly always possible to tabulate the specialty under a broader scientific field and, in the second instance, it seems safe to assume that the field first named is the primary interest. It will be noted that the biological sciences, collectively, and the medical sciences, together, comprised about half the attendance at the 118th meeting; the physical sciences between one fifth and one quarter; and the engineering and the social sciences each close to one tenth.

TABLE 2

SUBJECT FIELDS OF ATTENDANCE AT THE SEVENTH PHILADELPHIA MEETING

Physical sciences		22%
Physics	345	
Chemistry	484	
Geology	176	
Engineering	413	9%
Biological sciences		27%
Botany	235	
Zoology	545	
Other Biology	448	
Medical sciences		21%
Dentistry	140	
Pharmacy	102	
Other Medicine	739	
Social sciences and Education	436	9%
General	530	12%

Whether these proportions are typical of all AAAS meetings is a natural question, which cannot be answered definitely for want of sufficient data over a period of years under varying conditions. It is believed, however, that, within the broad classifications used, and for the next few years, these percentages will not vary greatly. Since the Association meets in large cities that contain one or more large institutions of higher learning, medical schools, experiment stations, and industrial laboratories, a good-sized local and regional attendance is assured at the outset. Under normal conditions, therefore, a AAAS meeting can be expected to have 2500-4500 registrants, plus an additional number of local professional people totaling 1.6 times the number of registrants—or a minimum attendance of 4000 and a potential maximum of 12,000.

For section secretaries and other program chairmen who want their programs and symposia to be well attended, there is a simple formula for success: (1) Invite the advice of the entire section committee (and perhaps others) regarding the subject about which those in that field would most like to hear; (2) very early in the year (before other engagements may have been made) invite the recognized authorities to participate, indicating at the outset the scope of the symposium and the names of the others who are being asked; (3) secure firm commitments by June 1, in time for appropriate scientific journals to announce the program; (4) send mimeographed or other announcements to every department or laboratory that has faculty, researchers, and students who should hear the symposium (rather than read it), meet the speakers, perhaps contribute to the discussion at the session.

Significance of the meeting. The 118th meeting was important on more than one count. The two general Association symposia were out of the ordinary in their significance. The symposium on "Soviet Science" was concerned with an objective appraisal of the quality of science in the Soviet Union today. The widely sponsored three-session symposium, "Operation Knowledge," near the end of the meeting, focused attention upon deficiencies in the communication of concepts, in all media, in today's complex society. It will be reported on separately by Dr. Hewitt, who arranged it. The general excellence and large number of the sectional symposia have been mentioned; reports of the secretaries will be found on succeeding pages.

The special sessions—outstanding general addresses and evening lectures by eminent authorities, sponsored

jointly by the Association and organizations that meet regularly with the AAAS—met the high standard of previous years. In chronological order, these were: The annual address of the Society of the Sigma Xi, on “Animal Light,” given by E. Newton Harvey, Henry Fairfield Osborn professor of biology, Princeton University; the annual address of the Scientific Research Society of America, “The Human Element in Industrial Research,” given by E. W. Engstrom, vice president in charge of research, Radio Corporation of America; the annual illustrated lecture of the National Geographic Society, “An Ornithological Expedition to Nepal,” delivered by S. Dillon Ripley, Peabody Museum, Yale University; the one hundredth AAAS Presidential Address, “Man’s Synthetic Future,” given by Retiring President Roger Adams; and the annual address of the United Chapters of Phi Beta Kappa, “Science and Man’s Destiny” (a change from the title printed in the program), by Arthur H. Compton, president of Washington University. The final special session was the revival of an annual address by the Honor Society of Phi Kappa Phi. Cornelius W. de Kiewiet, president of the University of Rochester, spoke on “Our Human Resources of Skill and Wisdom” before a small but enthusiastic audience.

In 103 years, the American Association for the Advancement of Science has grown from two sections, Natural History, Geology, etc., and General Physics, etc., to 15—one of which, N, Medical Sciences, has three sub-sections: Nd, Dentistry; Np, Pharmacy; and Nm, Medicine. At the 1951 meeting, for the first time in many years, a new section was established. Section P, Industrial Science, was formally inaugurated Friday morning, December 28, with President-elect Detlev W. Bronk presiding. The launching of this new section, which already has two affiliated societies—the American Industrial Hygiene Association and the Society for Industrial Microbiology—would itself make the 118th meeting a memorable one.

AAAS Science Theatre. Some 61 foreign and domestic scientific films, from almost as many sources, were shown during four days of the meeting in 10 four-hour programs, and were most appreciatively received. At all times observed, the attendance ranged from 100 to 350. The Association again expresses its appreciation to those who so kindly lent such excellent films.

Annual Exposition of Science and Industry. The AAAS Annual Exposition of Science and Industry has become an important and integral part of the association’s annual meeting and provides an outstanding opportunity for those who use the tools and materials of science, and those who produce and distribute them, to meet each other. The 1951 exposition, with some 155 booths, filled the entire arena of the Philadelphia’s Municipal Auditorium. Exhibits included the latest and best in scientific books, instruments, and materials. In addition to the “core exhibitors,” there were technical exhibits by large firms representative of the basic industries of the nation. Table 3 gives the final list of exhibitors.

TABLE 3

Books, Maps, and Publications

AAAS: SCIENCE, THE SCIENTIFIC MONTHLY
Academic Press Inc.
Aero Service Corporation
Association of American University Presses
Biological Abstracts
The Blakiston Company
Encyclopaedia Britannica, Inc.
Folkways Records & Service Corporation

Gerontological Society, Inc.: *Journal*
D. C. Heath and Company
Houghton Mifflin Company
Interscience Publishers, Inc.
Lea & Febiger
The Macmillan Company
Josiah Macy, Jr. Foundation
McGraw-Hill Book Company, Inc.
G. & C. Merriam Company
The C. V. Mosby Company
National Geographic Society
Oxford University Press, Inc.
Philosophical Library
Prentice-Hall, Inc.
The Ronald Press Company
W. B. Saunders Company
Science Library

Medical

American Cancer Society
Armour and Company
Children’s Hospital of Philadelphia (space endowed by Smith, Kline & French Laboratories)
Difco Laboratories, Inc.
Jefferson Medical Hospital (space endowed by SKF Industries, Inc.)
National Cancer Institute, USPHS, Dr. Heuper (space endowed by the Warner Company and the Link-Belt Company)
National Society for Medical Research
Sanborn Company
Schering Corporation
Sharp & Dohme, Inc.
Sugar Research Foundation, Inc.

Instruments, Laboratory Equipment, and Scientific Supplies

Ace Glass Incorporated
American Electronic Laboratories, Inc.
James A. Biddle Co.
Biophysical Instruments, Inc.
C. A. Brinkmann & Co.
Cambridge Instrument Company, Inc.
Carolina Biological Supply Company
Fred S. Carver, Inc.
Custom Scientific Instruments, Inc.
El-tronics Inc.
General Chemical Division, Allied Chemical & Dye Corporation
Harford Metal Products, Inc.
Heitz & Lighburn—Training Films, Inc.
Jarrell-Ash Company
Keystone Plastics Company
Leeds & Northrup Company
Linguaphone Institute
New Brunswick Scientific Company
Norwich Wire Works, Inc.
Nuclear Instrument & Chemical Corporation
Nuclear Research Foundation
Phipps & Bird, Inc.
RCA Victor Division, Radio Corporation of America
Specialized Instruments Corporation
Arthur H. Thomas Company
W. M. Welch Manufacturing Company
Henry Wild Surveying Instruments Supply Co. of America, Inc.

Microscopes and Accessories

American Optical Company
Bausch & Lomb Optical Co.
Edmund Scientific Corporation
Ereona Corporation—Carl Zeiss, Jena Products
R. Y. Ferner Co., Inc.

The Graf-Apsco Co.
E. Leitz, Inc.
The Rayoscope Company

Special Exhibits

AAAS Annual International Photography-in-Science Salon
American Documentation Institute
Animal Welfare Institute
City Planning Commission of Philadelphia
The Coca-Cola Company
Community Chest of Philadelphia (space endowed by Publicker Industries, Inc.)
Cooperative Bureau for Teachers
The Franklin Institute (space endowed, in part, by The Midvale Company)
The Human Resources Research Center
Library of Congress, Navy Research Section
National Bureau of Standards
Naval Research Laboratory and Naval Ordnance Laboratory

Technical Exhibits of Industries

The American Tobacco Company
The Atlantic Refining Company
Atlas Powder Co.
The Bell Telephone Company of Pennsylvania
The Chemstrand Corporation
Dodge Steel Co.
E. I. du Pont de Nemours & Co., Inc.
General Electric Company
Hercules Powder Company
Koppers Company, Inc.
The Kuljian Corp.
Monsanto Chemical Company
Philip Morris & Co. Ltd., Inc.
Philadelphia Electric Company
Philco Corporation
Polaroid Corporation
Proctor & Schwartz, Inc.
Rohm & Haas Company
Socony-Vacuum Oil Company, Inc.
Westinghouse Electric Corporation



Reports of Sections and Societies¹

THE Association sponsored two general symposia, "Soviet Science" and "Operation Knowledge." The two sessions devoted to a critical but dispassionate survey of the genetics, physiology, pathology, psychology and psychiatry, mathematics, physics, chemistry, soil science, and social science in the USSR drew capacity audiences and attracted such widespread interest that plans are being evolved for early publication of all the papers presented. Conway Zirkle, of the University of Pennsylvania, vice president of the AAAS and chairman of the Section on the History and Philosophy of Science (L), arranged the program and is assembling the material for publication.

William F. Hewitt, Jr., of Howard University, who organized the symposium on "Operation Knowledge," reports that the three sessions of this general AAAS symposium were attended by 50-100 persons on December 30 at Convention Hall. The 14 papers covered several aspects of science communications: primary publication, abstracting services, hindrances to and promotion of international movement of scientists, an international language for Western science, cooperative intramural communications groups in colleges, universities, and professional schools, a proposed society of communications scientists, the scientific education of laymen, the nature of documentation in general and its advancement by libraries, by the American Chemical Society, and by the American Documentation Institute. Academic, industrial, and governmental speakers took part. Luther Evans, librarian of Congress, presided in the afternoon when Detlev Bronk was unexpectedly called away. Returns are still coming in from the questionnaire distributed by Samuel Miles, inquiring about interest in a com-

prehensive organization of scientists concerned with communications. Members of the audience expressed their conviction that communications constitute a fundamentally appropriate and extremely important area for general AAAS discussion and activity, and their hope that future programs will include integrative discussions of specific aspects of communications.

Section on Physics (B)

Three meetings were held on December 27. In the morning a conference was devoted to the problems of maintaining "Physical Research in the Universities." Urner Liddel discussed the "Forces Affecting the Research Trends in Physics." This was a forthright analysis of the problems of government support and the preservation of individual imagination and initiative in basic research. Norman F. Ramsey spoke on "University Physics in a Continuing National Emergency." On the basis of his experience with governmental enterprises in research and development, contrasted with the university to which he has returned, he discussed the role of the university in education and research, stressing the long-term importance of the universities' contribution to the strength of our nation. Lyman J. Briggs presided at an afternoon conference concerned with "Applied Physics," chiefly the activities in government organizations. Hugh L. Dryden gave a most interesting picture of the advances in aeronautical science under the title "The Role of Physics in Aeronautical Development." Thomas H. Johnson discussed the scope and nature of research in the field of "Physics in the Atomic Energy Program." Philip M. Morse described the concepts, methods, and growing importance of operational analysis under the title "Physics and Operations Research." He analyzed the role and contribution of physical thinking.

The affairs and the future of Section B were considered at a dinner meeting, at which Arthur H. Compton presided.

FREDERICK S. BRACKETT, *Secretary*

¹ Key symbols correspond to those in the General Program.