

# Preview of the 118th Meeting, AAAS, Philadelphia

## December 26-31, 1951

### General Information

The 118th Meeting of the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE will be one of the best balanced and most significant scientific conventions in the history of the Association, now in its 104th year. Each of the 18 AAAS sections and subsections has programs of from three to seventeen sessions; thus no principal field of science is unrepresented. In addition, 71 affiliated societies and other organizations are participating in this Seventh Philadelphia Meeting. Some—for instance, the zoological societies and the science teaching societies—are holding their annual meetings and have numerous and concurrent sessions; others are holding one or two essentially regional sessions or important annual addresses open to the public; still others are present as cosponsors of the sessions or symposia of AAAS sections. The Association has planned two general symposia: "Soviet Science," two sessions, and "Operation Knowledge," three sessions. The sections have arranged 36 symposia, most of them two to five sessions in length. The list of these appeared in the November 16 issue of SCIENCE. Several of the sections, notably C-Chemistry, E-Geology and Geography, G-Botanical Sciences, H-Anthropology, I-Psychology, Nd-Dentistry, Np-Pharmacy, and Q-Education, also have sessions for contributed papers. The Association's new Section P-Industrial Science will be inaugurated December 28 and will have special programs the following two days. The programs of the participating societies, in addition to papers on recent research, include a number of important symposia and panel discussions. The Conference on Scientific Manpower on three mornings is particularly timely, and Section G's symposium, "Foods and People," will command international attention.

In the Annual Exposition of Science and Industry, which fills the street-level Arena of the Philadelphia Municipal Auditorium, or "Convention Hall," again the 150-booth limit has been attained. On display will be the latest in the tools of science—the products of leading publishers, instrument makers, and manufacturers and distributors of all types of laboratory equipment and supplies. There will also be *technical* exhibits of some of the impressive technological accomplishments of key U. S. industries—chemical, electrical, petroleum, pharmaceutical, steel, and textile. The exposition is an integral feature of the meeting and provides AAAS members and exhibitors exceptional opportunities to become acquainted. A directory of exhibitors, together with descriptions of their exhibits, is appended.

For ten periods of four hours each, the AAAS Science Theatre will present more than 60 of the latest foreign and domestic scientific films, practically all with sound and a great many in color. Most, but not all, of the films will be shown twice in the "Lecture Hall" of the Philadelphia Municipal Auditorium; the details of the programs will be found in this issue, and since the sequence and running time are given, it is possible to plan to see any individual film.

The Seventh Philadelphia Meeting will be a convenient one: Focus of the meeting is the Municipal Auditorium on 34th Street below Spruce, adjacent to the campus of the University of Pennsylvania. Nearly all the sectional programs and certain other sessions will be held in the

meeting rooms of this great building, well designed for conventions. Four additional rooms have been partitioned off in the corners of the Exhibition Floor, one floor below the arena which houses the Annual Exposition of Science and Industry. In the Auditorium, also, are located the Main Registration and Information Center, the Visible Directory of Registrants, the AAAS New Member Service, the Annual International Photography-in-Science Salon, and the Science Theatre. In the Auditorium, in addition to light refreshment stands, there will be an excellent Holland-operated restaurant with table service at moderate prices. During the four days the exposition is open there will be special buses making frequent runs between downtown hotels and the Auditorium; at all times, the trip from Broad Street to the Auditorium requires no more than 10-15 minutes by street car, bus, or taxi.

The General Program of more than 300 pages has gone to press on schedule and is being sent to advance registrants at this time—by first-class mail. (*It is now too late to register for the meeting in advance; plan to register upon arrival.*)

Admission to the Annual Science Exposition is either by complimentary admission tickets (which must be applied for) or by Convention Badge. The following events are *restricted to registrants*: The AAAS Reception, the Science Theatre, and the Biologists' Smoker, at which cigarettes and refreshments are provided.

Reservations for hotel rooms may be made until almost the last day—please see the hotel reservation coupon in this issue, but telegrams and telephone calls are advisable after December 18. Those who do not make advance reservations and who find accommodations exhausted at a particular hotel will be given help—either by the desk clerk or by the Association's Information Center.

*Preconvention Announcements.* In this Preconvention Issue, it is not feasible to repeat in detail the announcements on the 118th Meeting that have already appeared in SCIENCE. These include:

1. A preliminary announcement of the scope of the meeting, with a partial list of the participating societies. (SCIENCE, 635, June 1).
2. The local cooperating institutions and the personnel of the Local Committee, which already has done so much to make the Seventh Philadelphia Meeting memorable. (SCIENCE, 219, Aug. 24).
3. A historical sketch of the beginnings of the Annual Exposition of Science and Industry. (SCIENCE, 372, Oct. 5).
4. The Symposia of the 118th Meeting (SCIENCE, 529, Nov. 16).

### Hotel Headquarters

The Hotel Bellevue-Stratford is the official Headquarters of the AAAS; it is where the Council of the Association will meet and other business sessions will be held. The Press Room—for receipt of authors' abstracts and the only source of press releases—is the Junior Room, near the Ballroom on the first floor, one flight above the lobby.

*Headquarters of the Sections of the AAAS and of the Participating Societies.* Hotel Bellevue-Stratford (750 rooms—Broad & Walnut Sts.): AAAS, Press; AAAS Sections A, H, I, K, L, and Q (in part); AAAS Coopera-

tive Committee; Academy Conference; Biometric Society, Eastern North American Region; Society for American Archaeology, Society for Applied Anthropology; Society for Research in Child Development; American Home Economics Association; American Sociological Society; National Academy of Economics and Political Science, Pi Gamma Mu; Eastern Division of the American Philosophical Association, Philosophy of Science Association; American Association of Scientific Workers, American Library Association, Conference on Scientific Manpower, Honor Society of Phi Kappa Phi, National Association of Science Writers, Research Center for Human Relations, Sigma Delta Epsilon, Special Libraries Association, The Scientific Research Society of America, The Society of the Sigma Xi, The United Chapters of Phi Beta Kappa.

**Hotel Benjamin Franklin** (1200 rooms—9th & Chestnut Sts.): AAAS Sections F, G, N (including Subsections Nm, Nd, and Np), and O; American Society of Protozoologists, American Society of Zoologists, Herpetologists League, Society of Systematic Zoology; American Microscopical Society, American Society of Limnology and Oceanography, Beta Beta Beta, Ecological Society of America, Genetics Society of America; Botanical Society of America, Phycological Society of America; Alpha Epsilon Delta, American Geriatrics Society, American Pharmaceutical Association, Scientific Section, American Society for the Study of Arteriosclerosis, American Society of Hospital Pharmacists, Gerontological Society, Inc.

**Hotel Adelphia** (400 rooms—13th & Chestnut Sts.): National Association of Biology Teachers; National Science Teachers Association; American Nature Study Society, Pennsylvania Academy of Science.

**Hotel John Bartram** (400 rooms—Broad & Locust Sts.): AAAS Sections B, C, D, and E; American Meteorological Society, Oak Ridge Institute of Nuclear Studies, U. S. Atomic Energy Commission, Isotopes Division; Chemical Literature Division, American Chemical Society, The American Academy of Forensic Sciences; Geological Society of America, Middle Atlantic Division, Association of American Geographers, National Geographic Society, National Speleological Society. (Registration at Bellevue-Stratford or Convention Hall.)

**Hotel Sylvania** (400 rooms—Locust St., near Broad): AAAS Sections M and P; New York-Philadelphia Chapter, American Institute of Planners; AAAS Committee for Social Physics, American Society for Quality Control, American Society of Mechanical Engineers, Engineers' Council for Professional Development; American Industrial Hygiene Association, Society for Industrial Microbiology. (Registration at Bellevue-Stratford or Convention Hall.)

**Hotel Ritz-Carlton** (200 rooms—Broad & Walnut Sts.): AAAS Section Q (in part). (Registration at Bellevue-Stratford or Convention Hall.)

The following additional hotels are being used for sleeping rooms:

**Barclay** (600 rooms—Rittenhouse Sq., E.)  
**Drake** (700 rooms—1512 Spruce St.)  
**Essex** (225 rooms—13th & Filbert Sts.)  
**Penn Sheraton** (600 rooms—39th & Chestnut Sts.)  
**Robert Morris** (200 rooms—17th & Arch Sts.)  
**St. James** (125 rooms—13th & Walnut Sts.)  
**Warwick** (900 rooms—17th & Locust Sts.)

Guests in these hotels register at Convention Hall or the Bellevue-Stratford.

## Registration

**Main Registration and Information Center.** The Main

Registration and the Information Center are located in the lobby of the Municipal Auditorium, immediately inside the Curie Avenue, or Main, Entrance. These will be open daily as follows: Wednesday, Dec. 26, 8:30 A. M.—8:30 P. M.; Thursday and Friday, Dec. 27 and 28, 8:30 A. M.—8:30 P. M.; on Saturday, Dec. 29, because of the Biologists' Smoker, which is from 9:00 P. M. till midnight, the hours for Registration will be 8:30 A. M. till 11:30 P. M., to accommodate nonregistrants who wish to attend the smoker. On Sunday, Dec. 30, registration is 9 A. M. till 8 P. M.; on Monday, Dec. 31, at AAAS office, 9:00 A. M. till noon.

Badges and General Programs may also be obtained at the three supplementary registration desks, but the *Main Registration* is the only place to receive supplementary literature, broadcast tickets, and the like. *Advance Registrants* (who have received programs and badges prior to the meeting) are urged to visit the Main Registration, at any convenient time, to receive these items.

**Supplementary Registration Desks.** For the convenience of those attending the 118th Meeting, there are three supplementary registration desks in the hotels as follows:

<b>Hotel Bellevue-Stratford—</b> In Lobby	Dec. 26	NOON 9 P. M.
	Dec. 27	8 A. M.—8 P. M.
	Dec. 28	8 A. M.—8 P. M.
<b>Hotel Benjamin Franklin—</b> On Mezzanine	Dec. 26	4 P. M.—9 P. M.
	Dec. 27	8 A. M.—8 P. M.
	Dec. 28	8 A. M.—8 P. M.
<b>Hotel Adelphia—</b> In Lobby	Dec. 26	1 P. M.—9 P. M.
	Dec. 27	8 A. M.—8 P. M.
	Dec. 28	8 A. M.—8 P. M.

**Registration Fee.** Each person who registers has the satisfaction of knowing that he has paid his personal share of the expenses of the meeting, and, at the same time, with his Badge and his Registration Card posted in the Visible Directory, he has become a definite participant in the 118th Meeting. As a Registrant, he may visit the Exposition and AAAS Science Theatre repeatedly and enjoy refreshments and tobacco at the Biologists' Smoker.

Despite inflation, the AAAS registration fee is still \$2.00 for members, for *bona fide* students, and for a wife or husband of a registrant; it is \$3.00 for all others. Each registrant receives a receipt, a Convention Badge, and the General Program—the only publication containing the programs of all 18 AAAS sections and the 71 participating and cooperating organizations.

**The AAAS Convention Badge.** The AAAS Convention Badge indicates that you have paid your share of the expenses of the meeting and that you are a complete participant in this 118th Convention of the Association. The badge should be worn throughout the meeting because (1) it will encourage others to register; (2) it is needed for admission to the Annual Exposition of Science and Industry, the AAAS Science Theatre, the Biologists' Smoker, and the Reception that follows the Presidential Address; and (3) it helps your friends to find you.

**Visible Directory of Registrants.** The Visible Directory of Registrants is located in the Municipal Auditorium between the Lobby and the exhibit area. It is just on the other side of the wall behind the Main Registration and Information Center. It will be open daily from 8:30 A. M. till 11 P. M. The registration cards of all registrants are placed in the Visible Directory as soon as possible after registration. The arrangement is alphabetical. The cards of advance registrants are *completely* alphabetized since they were posted in Washington prior to the meeting; all other registration cards are filed to the second or

third letter of the surname (Ba, Be, etc.). Members of the press, exhibitor personnel, and guests are included in the Visible Directory—on *blue* cards instead of yellow.

*Mail, Telegrams, and Messages.* Mail and telegrams addressed in care of the AAAS will be held at the AAAS Office near the lobby of the Municipal Auditorium. Every effort will be made to notify addressees listed on the Visible Directory, but the Association assumes no responsibility for the delivery of mail or telegrams. Telephone and personal messages will be filed alphabetically in the AAAS Office.

*Society Meal Function Tickets.* In general, tickets to the dinners, luncheons, or breakfasts of any participating society are obtainable only from representatives of that society and during the preceding sessions of the society. Any society, however, has the privilege of using an AAAS Supplementary Registration desk in its headquarters hotel as a ticket booth, provided that that portion is manned by a representative of the society. Experience has shown that it is much more satisfactory to all concerned for each organized meal function to be the responsibility of the society that sponsors it. *For a list of all meal functions, see "Dinners," etc., in the General Program.*

## Philadelphia Municipal Auditorium

The city-owned Municipal Auditorium of Philadelphia is a large, well-designed convention hall, generally rated as one of the best in the U. S. Situated on Curie Avenue at the south end of 34th Street below Spruce, it adjoins the campus of the University of Pennsylvania and is not more than five minutes' walk from buildings of that institution. Somewhat less than two miles west of Broad Street and the downtown hotels, this "Convention Hall" is not more than a ten- or fifteen-minute bus, street-car, or taxi ride from the Bellevue-Stratford or Benjamin Franklin hotels. And it is less than a ten-minute walk from the 36th Street Station of the Market Street Elevated and Subway or the 30th Street Station of the Pennsylvania Railroad. The excellent and moderate-priced Holland-operated restaurant and the light refreshment stands in the Municipal Auditorium make it quite feasible and convenient to attend a variety of sessions all day under the one roof. The Main Entrance of the Auditorium on Curie Avenue, at the south end of 34th Street, faces the Hospital of the University of Pennsylvania School of Medicine.

### Location of Rooms and Features in Auditorium

AAAS Office .....	Off Lobby, at left, street level
Biologists' Smoker .....	
Main Exhibition Hall (under Arena) ground floor	
Exposition .....	Arena, street level
Information Center .....	Lobby, street level
Light Refreshments ...	Corridors around Arena, street level
Main Registration .....	Lobby, street level
New Member Service .....	Booth 312 in Exposition
Restaurant .....	Under Lobby, ground floor
Science Theatre .....	Center Building, ground floor
Session Rooms	
Ballroom .....	Over Lobby, third floor
Room "A" ..	Left front corner, Exhibition Hall ground floor
Room "B" ..	Right front corner, Exhibition Hall ground floor
Room "C" ..	Left rear corner, Exhibition Hall ground floor
Room "D" ..	Right rear corner, Exhibition Hall ground floor
Room 101 .....	At left, next to Restaurant, ground floor
Room 200 .....	Off Lobby, at right, street level
Room 205 .....	Off Arena, at left, street level
Room 206 .....	Off Arena, at right, street level
Room 300 .....	Off Ballroom, at right, third floor
Room 304 .....	Center of third floor, at right
Room 305 .....	Center of third floor, at left
DR 1 .....	Corner room, left rear, third floor
DR 19 .....	Corner room, right rear, third floor
Visible Directory of Registrants ..	Behind Lobby, street level

*Transportation to the Philadelphia Municipal Auditorium.* From any hotel in downtown Philadelphia, board street cars on Walnut Street marked #13 or #42; get off at 34th Street and walk south one block. Or board bus marked "D" on Sansom Street; get off at 34th Street, and walk south three blocks.

During the four days December 27-30, there will be special buses marked AAAS-Convention Hall which will leave from the Hotels Bellevue-Stratford and Benjamin Franklin and proceed directly to the Municipal Auditorium at frequent intervals, morning, afternoon, and evening.

*From the Philadelphia Municipal Auditorium back to the hotels:* Take street cars on Spruce Street marked #13 and #42. Or take bus marked "D" at 34th Street and Chestnut Street. In each case, get off at the cross street nearest which your hotel is located, e.g., Broad Street. The passenger rate for both bus and street car is 15¢ each way.

Taxicab service should be available at all times both at the hotels and at Convention Hall.

During the four days Dec. 27-30, there will be special buses marked AAAS-Bellevue-Stratford or AAAS-Benjamin Franklin which will leave directly from Convention Hall to the hotels named.

## Press Service of the Association

All persons who will deliver addresses or present papers at the Philadelphia Meeting are asked to provide the Press Service with 100 copies of abstracts of their papers. One hundred copies of *complete* manuscripts are requested of papers presented by (1) officers of the Association; (2) officers and invited speakers that appear on the programs of the participating societies; and (3) any author whose paper has a particular news value. In general, most authors already have sent this material to the Association's Director of Press Relations, Sidney S. Negus, Medical College of Virginia, Richmond. Starting Dec. 15, and throughout the meeting period, abstracts and copies of papers should be delivered to Dr. Negus at the *AAAS Press Office, Junior Room, Hotel Bellevue-Stratford*. This press room is equipped with typewriters, duplicating machines, bulletin boards, extra telephones, standard references, and special files. Dr. Negus invites all who are interested to call. (*But please do not request information or material that is available at the Information Center or the Main Registration in the lobby of the Philadelphia Municipal Auditorium!*)

This year, not only is the Association fortunate in the continued service of Professor Negus, chairman of the Department of Biochemistry, Medical College of Virginia, and past president of the Virginia Academy of Science, but also in its local Subcommittee on Public Information, headed by Steven M. Spencer, associate editor and staff writer, Curtis Publishing Company. This local committee has done considerably more than publicize the meeting throughout the Philadelphia region and handle all arrangements for radio and television.

## AAAS Business Sessions

The *Executive Committee* of the Association will meet for dinner and a business session in the Administrative Secretary's suite at the Hotel Bellevue-Stratford at 6:00 P. M. on Wednesday, Dec. 26. It will meet for luncheon in the same room at noon on Thursday, Dec. 27. Dates and hours of subsequent sessions of the Executive Committee during the meeting will be decided at these first sessions.

The Council of the Association will meet Thursday afternoon, Dec. 27, at 4:00 P. M. in the Ballroom of the Hotel Bellevue-Stratford. A second session of the Council is scheduled for Saturday morning, Dec. 29, at 9:00 A. M. in the Ballroom of the Hotel Bellevue-Stratford. All members of the Council have been notified individually, and it is hoped that all can attend.

Subjects to be considered by the Council (in addition to the prepared agenda) usually are first brought before the Executive Committee through the Administrative Secretary. During the meeting, communications for the Executive Committee should be submitted in writing and left at the Hotel Bellevue-Stratford mail desk, addressed: Dr. Howard A. Meyerhoff.

There will be a Luncheon and Business Meeting of the officers of the AAAS Sections Saturday noon, Dec. 29, in the Pink Room, Hotel Bellevue-Stratford. HOWARD A. MEYERHOFF and RAYMOND L. TAYLOR, *Co-Chairmen*.

### AAAS Awards

The twenty-fourth award of the American Association for the Advancement of Science **Thousand Dollar Prize** will be made at the Philadelphia meeting to the author of a noteworthy paper presented on a regular program of the meeting and representing an outstanding contribution to science. The generous, and previously anonymous, donor of this award was the late Newcomb Cleveland, of New York. He became a life member of the Association in 1923 and established the prize beginning that year. With a fund of \$25,000 left as his bequest, the AAAS will continue to make this award, hereafter under the name **The Newcomb Cleveland Prize**.

It was always the wish of Mr. Cleveland that the prize be awarded each year to one of the younger scientists and that it shall not be divided among two or more scientists whether working independently or in collaboration. The prize is awarded upon the recommendation of a special Prize Committee, whose judgment shall be final. The winner at the Cleveland meeting in 1950 was Carroll M. Williams, for a paper read before a session of the American Society of Zoologists, an affiliated society in AAAS Section F—Zoological Sciences.

The Prize Committee for the Philadelphia meeting consists of JOHN R. DUNNING, dean, School of Engineering, Columbia University, *Chairman*; M. T. GOEBEL, E. I. du Pont de Nemours & Company; W. M. KROGMAN, professor of physical anthropology, University of Pennsylvania, and director, Philadelphia Center for Research in Child Growth; WILLIAM W. RUBEY, U. S. Geological Survey and chairman, National Research Council; PAUL B. SEARS, Conservation Program, Yale University; THOMAS R. WOOD, Stine Laboratories, E. I. du Pont de Nemours Company.

It is not necessary that the prize winner be a member of the Association. All papers listed in the General Program, *except presidential and vice-presidential and invited papers*, are eligible for the AAAS Newcomb Cleveland Prize.

### AAAS-George Westinghouse Science Writing Awards

Now in their sixth year, the AAAS-George Westinghouse Science Writing Awards have come to occupy an important place in American journalism, and, by their recognition and encouragement of distinguished work in the interpretation of science to the layman, have brought to the American public a better understanding of the

development of science in the twentieth century. Sponsored by the Westinghouse Educational Foundation and administered by the American Association for the Advancement of Science, the contest offers two \$1,000 prizes annually for the best news story and the best magazine article on science published during the preceding year.

The nine representatives of the general public, science, and journalism who acted as judges of the entries submitted in the 1951 competition were: HENRY R. ALDRICH, secretary, Geological Society of America; GEOFFREY ED-SALL, director of biologic products, Army Medical Center, Washington, D. C.; NORMAN COUSINS, editor, *Saturday Review of Literature*; JOHN R. DUNNING, dean of the Faculty of Engineering of Columbia University; RUDOLPH FLESCH, readability consultant; CHARLES C. HEMENWAY, former editor, the Hartford (Conn.) *Times*; HILLIER KRIEGHBAUM, professor in the New York University School of Journalism; HOWARD A. MEYERHOFF, administrative secretary of the AAAS; and MORRIS MEISTER (*chairman*), principal of the Bronx (N. Y.) High School of Science and past president of the National Science Teachers Association.

Winners in 1950 were Rachel Carson, editor-in-chief of the U. S. Fish and Wildlife Service, for "The Birth of an Island," published in *The Yale Review*; and Norman M. Howden, a reporter on the Rochester (N. Y.) *Democrat and Chronicle* since 1933 and a science writer since 1945, for his story on cancer research at the University of Rochester.

Presentation of the 1951 awards will be made at a luncheon in the Hotel Bellevue-Stratford, Philadelphia, on Friday, Dec. 28. Kirtley Mather, president of the AAAS, will be the guest speaker. *Admission is by invitation only.*

### Prize in Theoretical Sociology

A new Association prize in Theoretical Sociology will be awarded at the Philadelphia meeting. Through the interest and generosity of an anonymous donor, \$1,000 will be given to the author of an essay considered to be the best by a committee of three judges. Two of the judges are Sidney Ratner, of Rutgers University, and J. R. Kantor, of Indiana University. The third is still to be selected.

### Annual International Photography-in-Science Salon

Prize-winning and other photographs entered in the Fifth Annual International Photography-in-Science Salon, sponsored by THE SCIENTIFIC MONTHLY and the Smithsonian Institution, will be displayed in the Exposition area before going on a tour of important museums and scientific institutions about the country. They will be shown at the U. S. National Museum in June 1952. Established in 1947 to encourage and extend the use of photography as a scientific tool, the contest has aroused wide interest, and photographs from it have been reproduced in scientific journals all over the world. Any scientist actively engaged in research (including photographic), teaching, private practice, or consulting work is eligible to enter this annual competition. All photographs must be taken for scientific purposes. They are judged by a panel of judges chosen to represent photography and the various sciences, particularly those making extensive use of photography in research.

Dates for showing the 1951 Salon may be arranged by writing to the editor of THE SCIENTIFIC MONTHLY.

## AAAS Special Sessions

One of the characteristic and most important features of the annual meetings of the Association is the series of outstanding general lectures and addresses by distinguished authorities. These special events, sponsored by organizations that meet regularly with the AAAS, are joint sessions with the Association. Unless otherwise stated, these special sessions are open to the general public of the city in which the meeting is held.

1. **THE AAAS PRESIDENTIAL ADDRESS.** Friday evening, Dec. 28; Ballroom, Hotel Bellevue-Stratford; at 8:00 P. M. By a custom of long standing, the AAAS Presidential Address is delivered by the retiring president at the annual meeting that marks the conclusion of his third year of service on the Executive Committee of the Association. Thus, at the 118th Meeting, the speaker is ROGER ADAMS, head, Department of Chemistry, University of Illinois, and one hundredth president of the American Association for the Advancement of Science. His subject: "Man's Synthetic Future."

KIRTLEY F. MATHER, President of the Association, will preside. Among those to be introduced and who will welcome the AAAS are EDWARD HOPKINSON, JR., Drexel and Company, and JAMES CREESE, president, Drexel Institute of Technology, who are, respectively, Honorary General Chairman and General Chairman of the Seventh Philadelphia Meeting. THE HONORABLE JOHN S. FINE, Governor of Pennsylvania, and THE HONORABLE JAMES H. DUFF, U. S. Senator, Pennsylvania, may speak briefly. Others seated on the platform will include HIS HONOR, BERNARD SAMUEL, Mayor, City of Philadelphia, the members of the Executive Committee, the Administrative Secretary, the Assistant Administrative Secretary, and four guests of honor who rendered repeated and indispensable service on the local committees of the Association's meeting in Philadelphia of 1904, 1914, and 1926. These are: PHILIP P. CALVERT, emeritus professor of zoology, University of Pennsylvania; EDWIN G. CONKLIN, emeritus professor of biology, Princeton University, president of the AAAS, 1936; SAMUEL F. HOUSTON, life trustee, University of Pennsylvania; and GEORGE E. NITZSCHE, emeritus recorder, University of Pennsylvania.

All registrants and all members of the Local Committee are cordially invited to attend THE PRESIDENTIAL RECEPTION that follows the AAAS Presidential Address. It will occupy all the rooms and foyers on the ballroom floor of the Hotel Bellevue-Stratford. The receiving line will be in the Clover Room.

2. **THE HONOR SOCIETY OF PHI KAPPA PHI.** Sunday evening, Dec. 30; Irvine Auditorium, University of Pennsylvania; at 8:00 P. M. The Honor Society of Phi Kappa Phi meets biennially with the AAAS. This year, in addition to its breakfast and business sessions, the Society will sponsor an evening address. The speaker will be CORNELIUS W. DE KIEWIET, president, The University of Rochester; the title of his address: "Our National Resources of Skill and Wisdom."

3. **THE NATIONAL GEOGRAPHIC SOCIETY ANNUAL LECTURE.** Thursday evening, Dec. 27; Irvine Auditorium, University of Pennsylvania; at 8:15 P. M. The speaker this year is S. DILLON RIPLEY, of the Peabody Museum, Yale University, who recently led an expedition to Nepal that was sponsored jointly by the National Geographic Society, Yale University, and the Smithsonian Institution. The lecture: "An Ornithological Expedition to Nepal."

The accompanying sound film, in color, will include both the scientific aspects of the expedition—rare birds,

fishes, and mammals—and camera shots of the pomp and brilliance of Katmandu, Nepal's capital, and life in the hinterland of this little-known Asiatic country. On the platform to introduce the speakers will be KIRTLEY F. MATHER and LEONARD C. ROY, chief of School Service, National Geographic Society.

4. **THE SCIENTIFIC RESEARCH SOCIETY OF AMERICA.** Thursday evening, Dec. 27; Ballroom, Hotel Bellevue-Stratford; at 8:00 P. M. The Scientific Research Society of America, recently organized by the Society of the Sigma Xi, has arranged an address in the fields of engineering and industrial science. The title of the Third Annual RESA Lecture is: "The Human Element in Industrial Research." The speaker is E. W. ENGSTROM, vice president in charge of research, Radio Corporation of America. There will be accompanying demonstrations. KARL T. COMPTON, chairman of the society, will preside.

5. **THE SOCIETY OF THE SIGMA XI.** Wednesday evening, Dec. 26; Ballroom, Hotel Bellevue-Stratford; at 8:00 P. M. The Sigma Xi Lecturer is E. NEWTON HARVEY, Henry Fairfield Osborn professor, Princeton University, on the subject: "Animal Light." GEORGE B. PEGRAM, president of the society, will preside.

6. **THE UNITED CHAPTERS OF PHI BETA KAPPA.** Saturday evening, Dec. 29; Irvine Auditorium, University of Pennsylvania; at 8:30 P. M. The United Chapters of Phi Beta Kappa have sponsored an address at the mid-winter meetings of the American Association for the Advancement of Science since 1935. The purpose of the series is to emphasize the interdependence of the arts and the sciences in a free society. The 1951 address will be the twelfth in the series. The speaker is ARTHUR H. COMPTON, president of Washington University, currently vice president of AAAS Section B (for the second time), and a past president of the Association. The title of his address: "The Foundation of Freedom." The presiding officer is JOHN W. NASON, president of Swarthmore College. Others on the platform will include DETLEV W. BRONK, president-elect of the AAAS, and five local guests of honor.

## Points of Interest

At the 118th Meeting, there will be no formal tours sponsored by the AAAS, though certain sections and participating societies have planned various tours, and a field trip—to the Pine Barrens of New Jersey. It is anticipated that some of those attending the meeting will wish to visit one or more of the museums, educational institutions, and points of historical interest for which the city is noted:

*Academy of Natural Sciences of Philadelphia*, 19th St. and the Parkway. Founded in 1812, the purpose of the academy is as valid today as it was then. Of special interest to visiting scientists are a new Limnology Laboratory, directed by Ruth Patrick; the study collections of plants, insects, mollusks, and other invertebrates; fishes; birds, mammals, and fossils. W. H. Camp, curator of experimental botany and horticulture, is now in charge of a new greenhouse for his work in living plants. Also of interest is the large library, with hours 9 to 5, Monday through Friday. The Museum of Natural History is open 9 to 5 Monday through Saturday; 1 to 5 on Sunday. Admission is free. Director of the academy is H. Radclyffe Roberts; the president is M. Albert Linton. Reached from center of city by A Bus; Street cars 21 and 33. Five-minute taxicab ride. Telephone, RIttenhouse 6-7622.

*American Swedish Historical Museum*, 19th St. and

Pattison Ave. The museum was founded in 1926 to promote interest in Swedish culture and to safeguard and exhibit archives of Swedish American immigration and activity. The museum building, in the style of a Swedish manor house, stands on land once a part of Sweden's colony in the New World. There are 15 galleries; of particular interest to visiting scientists are the two John Ericsson rooms showing original models of many of his inventions, as well as some articles relating directly to his own life and inventions of recent date. The museum is open weekdays from 10 to 5, Sundays from 1 to 5, when there is an admission charge of 25 cents for non-members. Take bus from the center of the city marked "C—Naval Hospital" or Broad Street subway to the southern end of the line (Snyder Ave.) and then transfer to the "C—Naval Hospital" bus.

*Aquarium*, Schuylkill River above Spring Garden St. Open 9 to 4:30; Sunday 9 to 5. Free.

*Bartram's Garden*, 54th St. and Woodland Ave.; open daily. John Bartram, farmer, became the most famous natural botanist in North America by collecting previously unknown species of trees, shrubs, and other plant material. He brought world fame to Philadelphia because he planted his collections in his garden near the River Schuylkill. Perhaps the *Frankliniana* tree of the tea family, discovered by Bartram in Georgia and transplanted successfully, is the most important plant in the Garden today.

*Betsy Ross House*, 239 Arch St. Open daily without charge.

*Carpenters' Hall*, 320 Chestnut St. Where the first Continental Congress sat.

*City Hall*, at the intersection of Broad and Market Sts.

*The Franklin Institute of the State of Pennsylvania*, 20th St. and the Benjamin Franklin Parkway. A non-profit institution founded in 1824, the institute has consistently devoted itself to the interpretation of science—particularly applied physical science—in terms that the "layman" can understand. Its present activities include: the Benjamin Franklin Memorial; the *Journal*; Lectures; the Library; Medal Awards; and a Museum of Science and Industry, including the *Fels Planetarium*, and Laboratories for Research and Development. Visiting hours of the museum and Fels Planetarium are 12 to 5 daily except Mondays. The Planetarium is open Wednesday, Friday, and Saturday evenings at 8:30 P. M. with special shows on Saturdays and Sundays. During the month of December, the traditional Star of Bethlehem demonstration will be featured in the Planetarium. Admission to both the museum and Planetarium is .60 for adults and .36 for children, which includes the federal tax. Special tours of the Laboratories for Research and Development may be arranged, and group visits to the museum and planetarium are offered at special rates. For further information call LOcust 4-3600.

*The Free Library of Philadelphia*, Logan Square, the Parkway at 19th St. Open 9 to 10, weekdays, 2 to 10, Sundays.

*The Historical Society of Pennsylvania*, 1300 Locust St. Open to the public from Tuesday through Saturday from 9 to 5. Admission free. The Manuscript Department is one of the most important historical depositories in the U. S., consisting of well over four million items. The museum contains historical portraits, furniture, and memorabilia of Penn, Franklin, Washington, Lincoln, etc. The library includes one half million books, pamphlets, and periodicals pertaining primarily to the history of the middle states area. R. N. Williams, 2nd, Director.

*Horticultural Hall*, West Fairmount Park. Open daily and Sunday, 9 to 5, admission free. In 1876, the ground was graded and the foundations laid for the Grand Conservatory of the Centennial Exhibition, to be permanently known as Horticultural Hall. It was the largest conservatory built in the U. S. at that time. In the East End conservatory, three flower shows are held annually e.g., the chrysanthemum display during the fall of the year, and the Christmas holiday show of poinsettias.

*Independence Hall*, 6th and Chestnut Sts. An Independence National Historical Park Project was established by act of Congress in 1948 to provide for federal participation in the preservation and commemoration of Independence Hall, Carpenters' Hall, Christ Church, and surrounding historic sites and buildings in Philadelphia. The most important part of the project is the Independence Hall group of buildings on Independence Square which, since January 1, 1951, has been administered by the National Park Service of the U. S. Department of the Interior. It was the scene of the adoption of the Declaration of Independence, the meeting place of the Continental Congress and of the Constitutional Convention of 1787, and the seat of government of the United States from 1790 to 1800. The Independence Hall group consists of Independence Hall (Old State House), Congress Hall, and Supreme Court building (Old City Hall). There are collections of Colonial and early American portraits including the Peale and Sharples Collections and Relics of Colonial, Revolutionary, and post-Revolutionary periods among which is the famed Liberty Bell. Visiting hours: 9 to 5 daily.

*The Pennsylvania Academy of the Fine Arts*, Broad and Cherry Sts. The museum, founded in 1805, actually dates from 1791 when Charles Wilson Peale first attempted to organize an institution devoted to the fine arts. The effort was not successful, but from it grew the Columbianum, which staged in Independence Hall the first exhibition of paintings ever held in Philadelphia. The Columbianum existed only a few years, but the dedication and inspiration of Peale were chiefly responsible for the formation of the Academy, the nation's first art institution. During its early years, exhibition works of art were brought from Europe, but the academy has consistently encouraged American artists, until now the emphasis both in exhibitions and acquisitions is almost entirely on the American side, its permanent collection ranging from the portraiture of the Revolutionary War period through its current acquisitions. It stages many special exhibitions, and in 1952 will come its 147th Annual Exhibition of Oil and Sculpture. The permanent collection, and paintings by Philadelphia artists William and Rita Wolpé Barnett, are on exhibition through Dec. 30. Galleries open weekdays except Monday, 10 to 5; Sundays and holidays 1 to 5; closed Mondays, Christmas, and New Year's. Free.

*Philadelphia Museum of Art*, at the end of the Benjamin Franklin Parkway, entering Fairmount Park. In the display collection of the museum the order adopted is that of historic and artistic evolution in time and region.

*Philadelphia Bibliographical Center and Union Library Catalogue*, Room 107, Engineering Building, University of Pennsylvania, 33rd and Locust Sts. The Union Library Catalogue consists of an alphabetical file of three and one half million cards recording the descriptions and locations of five million volumes available in 170 college, research, public, and technical libraries in the metropolitan area. The Philadelphia Bibliographical Center is the clearinghouse for bibliographical inquiry for scien-



tists, scholars, students, and all industrial research activity in the vicinity. The center also maintains a union catalogue of the microfilm holdings of two hundred research libraries throughout the U. S. and Canada. The Center is open daily from 9 to 5 and on Saturdays from 9 to 12:30. Eleanor Este Campion is director.

*The Philadelphia Commercial Museum*, 34th St. below Spruce—the building at the right of the Municipal Auditorium. The Commercial Museum has extremely large and varied collections of all kind of raw materials from all parts of the globe—rare and unusual substances, as well as of all the common things. Specimens are supplied for research and for comparison, to chemists, microscopists, and experimental laboratories in many lines. These exhibits cover such groups as foodstuffs, oils, fats and waxes, fibers, woods, tans and dyes, gums and resins, metallic ores, and useful minerals in general. Extensive geographic exhibits show the people and industries of the world. A monthly magazine, *Commercial America*, and *America Commercial* (in Spanish), reaches thousands of foreign business men and commercial organizations throughout the world. Open daily 9 to 5; Sundays 1 to 5. Admission free.

*The Philadelphia Zoological Garden*, in Fairmount Park at 34th St. and Girard Ave. The first institution of its kind in the New World opened its gates to the public on July 1, 1874. The Philadelphia Zoo houses approximately 1,500 animals, including a great many rarities. There are nine major exhibition buildings on the grounds, including the new ultramodern million-dollar Carnivora House, which was opened in April 1951. Other special attractions include unique exhibits in the new Bird House, barless quarters for elephants, hippos, and rhinos in the Elephant House, and the new Tropical Room in the Reptile House. Bamboo, the first gorilla to be reared in captivity successfully and the oldest living gorilla (estimated 25 years old this year), lives in the Monkey House. Among its other functions, the zoo maintains the Penrose Research Laboratory, which has done outstanding work in the study of dietary needs for captive animals and which has completely eliminated tuberculosis from the Monkey House. Open from 10 to 5 daily, including Sunday.

*U. S. Mint*, 16th and Spring Garden Sts. For visiting hours, consult the Information Center.

*The University Museum*, 33rd and Spruce Sts. This part of the University of Pennsylvania is a museum of man: Of ancient man, whose cities its many excavations have unearthed; of primitive man, whose art and life it illustrates with material from little-known areas. A new Hall of Man serves as an introduction to the Museum's varied collections, which range from the spectacular objects recovered from the Royal Tombs of Ur to a fine collection of African Negro art. Babylonian, Egyptian, and Classical galleries illustrate the ancient civilization of the Old World; those of the New are highlighted in the striking new Middle American Gallery and the South American Hall. Ethnological collections from the Indians and Eskimo complete the picture of native America. The East is represented by the arts of China, India, and Persia; the museum's African and Oceanic collections are outstanding. The museum is open daily, except Mondays, from 10 to 5; Sundays, from 1 to 5. Motion pictures and musical programs, free to the public, are presented Sunday afternoons at 3.

*The Wistar Institute of Anatomy & Biology*, 36th St. and Woodland Ave. Founded in 1892, this institution, named for Caspar Wistar, and endowed by Isaac J.

Wistar, was the first biological research institute in this country. The institute was established as a research unit and a museum to serve all organizations and individuals alike in the encouragement of original scientific research in anatomy and biology. The nucleus of the museum (the Wistar and Horner collection) was presented by the University of Pennsylvania. The museum is open to visitors; the famous rat colony and certain laboratories may be visited by special permission. The institute publishes and distributes the *Journal of Morphology*, *Journal of Comparative Neurology*, the *American Journal of Anatomy*, *Anatomical Record*, *Journal of Experimental Zoology*, the *American Journal of Physical Anthropology*, *Journal of Cellular and Comparative Physiology*, and the *Journal of Nutrition*. The Institute also publishes a series known as the *American Anatomical Memoirs*, the *Bulletins of The Wistar Institute*, and the *Bibliographic Service*. The Institute Press, which processes all of its publications, is open to visitors during the meetings of the American Association for the Advancement of Science. Visiting hours are 9 to 4 weekdays; 9 to 12 noon, Saturdays; closed Sundays.

*Colleges, Universities, and Medical Institutions of the Philadelphia Region*: In addition to the University of Pennsylvania, founded by Benjamin Franklin in 1740, where some of the sessions of the meeting will be held—and near-by Drexel Institute of Technology, at 32nd and Chestnut Sts.—the metropolitan area of Philadelphia includes:

Bryn Mawr College, Bryn Mawr; College of Physicians of Philadelphia; Girard College; Hahnemann Medical College; Haverford College, Haverford; Jefferson Medical College; La Salle College; Pennsylvania Military College, Chester; Pennsylvania State College of Optometry; Philadelphia College of Pharmacy & Science; St. Joseph's College; State Teachers College, West Chester; Swarthmore College, Swarthmore; Temple University; Villanova College, Villanova; and Woman's Medical College of Pennsylvania. Those who wish to visit these institutions should consult the Information Center for travel directions.

## SUMMARY OF EVENTS

### Wednesday, December 26

Registration: At Main Registration, Philadelphia Municipal Auditorium, 8:30 A.M. till 8:30 P.M.; at Hotel Bellevue-Stratford, noon till 9:00 P.M.; at Hotel Adelphia, 1:00 P.M. till 9:00 P.M.; and at Hotel Benjamin Franklin, 4:00 P.M. till 9:00 P.M.

The AAAS Annual Exposition of Science and Industry opens Thursday morning. The AAAS Science Theatre opens Thursday morning.

### Wednesday Morning

#### Chemistry

C Section on Chemistry—10:00 A.M.; Session for Contributed Papers; Room 101, Municipal Auditorium.

### Wednesday Afternoon

#### Chemistry

C Section on Chemistry—2:00 P.M.; Symposium: Monomolecular Layers; Room 101, Municipal Auditorium.

#### Engineering

M Section on Engineering—2:30 P.M.; Annual Meeting of Section M Committee; Green Room, Sylvania.

### Wednesday Evening

#### AAAS as a Whole

*AAAS Executive Committee Meeting*—6:00 P.M.; Suite of Administrative Secretary, Bellevue-Stratford.

#### Chemistry

**C** *Section on Chemistry*—7:00 P.M.; Contributed Papers; Room 101, Municipal Auditorium.

#### Science in General

**X16** *The Society of the Sigma Xi*—8:00 P.M.; Annual Address; E. NEWTON HARVEY: Animal Light; Ballroom, Bellevue-Stratford.

### Thursday, December 27

#### Thursday Morning

#### AAAS as a Whole

9:30 A.M.; Symposium: Soviet Science, Part I; Ballroom, Municipal Auditorium.

#### Mathematics

**A** *Section on Mathematics*—9:00 A.M.; Cosponsor of Session: Contributed Papers; Red Room, Bellevue-Stratford. See FG4 and A.

#### Physics

**B** *Section on Physics*—10:00 A.M.; Conference on Physical Research in the Universities; Room D, Municipal Auditorium.

#### Chemistry

**C** *Section on Chemistry*—9:15 A.M.; Symposium: Stream Pollution and Industrial Wastes, Part I; Room 101, Municipal Auditorium.

#### Geology and Geography

**E** and **E1** *Section on Geology and Geography; and Geological Society of America*—9:00 A.M.; Concurrent Session 1; General Geology; Room B, Municipal Auditorium.

**E** and **E2** *Section on Geology and Geography; and Middle Atlantic Division, Association of American Geographers*—9:00 A.M.; Concurrent Session 2; Geography; Room C, Municipal Auditorium.

#### Zoological Sciences

**F1** *American Society of Protozoologists*—9:00 A.M.; Session for Contributed Papers; Franklin Room, Benjamin Franklin.

**F2** *American Society of Zoologists*—9:00 A.M.; Meeting of Executive Committee; Lafayette Room, Benjamin Franklin.

#### Zoological and Botanical Sciences

**FG4** and **A** *Biometric Society, Eastern North American Region; and Section on Mathematics*—9:00 A.M.; Session for Contributed Papers; Red Room, Bellevue-Stratford.

**FG7** *National Association of Biology Teachers*—8:00 A.M.; Meeting of Board of Directors; Coral-Lotus Room, Adelphia.

**FG7**, **Q2**, and **X4** *National Association of Biology Teachers; National Science Teachers Association; and American Nature Study Society*—9:00 A.M.; Preview of Biology Films; Crystal Room, Adelphia. 10:00 A.M.; Meeting the Needs of Pupils through Science; Crystal Room, Adelphia.

#### Psychology

**I** *Section on Psychology*—9:00 A.M.; Session for Con-

tributed Papers; Clover Room, The Bellevue-Stratford.

**I1** *Society for Research in Child Development*—9:30 A.M.; Concurrent Session 1; Contributed Papers; South Garden, Bellevue-Stratford. 9:30 A.M.; Concurrent Session 2; Contributed Papers; North Garden, Bellevue-Stratford.

#### Social and Economic Sciences

**K3**, **K5**, and **K** *National Academy of Economics and Political Science; Pi Gamma Mu; and Section on Social and Economic Sciences*—10:00 A.M.; Economic Mobilization: Problems and Prospects; Oak Room, Bellevue-Stratford.

#### Engineering

**M** and **M3** *Section on Engineering; and American Society of Mechanical Engineers*—9:00 A.M.; Symposium: Prosthetic and Sensory Aids—Engineering, Design, and Uses, Part I; Room 200, Municipal Auditorium.

#### Medical Sciences

**N3**, **N6**, and **N8** *Subsection on Pharmacy, Np; American Pharmaceutical Association, Scientific Section; and American Society of Hospital Pharmacists*—9:30 A.M.; Session for Contributed Papers; Room A, Municipal Auditorium.

#### Agriculture

**O** *Section on Agriculture*—9:00 A.M.; Symposium: Mineral Nutrition of Plants, Animals, and Man, Part I; Room 206, Municipal Auditorium.

#### Industrial Science

**P2** *Society for Industrial Microbiology*—9:30 A.M.; Session for Contributed Papers; Ballroom, Sylvania.

#### Education

**Q2**, **FG7**, and **X4** *National Science Teachers Association; National Association of Biology Teachers; and American Nature Study Society*—9:00 A.M.; Preview of Biology Films; Crystal Room, Adelphia. 10:00 A.M.; Concurrent Session 1; Meeting the Needs of Pupils through Science; Crystal Room, Adelphia.

**Q2** *National Science Teachers Association*—10:00 A.M.; Concurrent Session 2; Annual Business Meeting of Business-Industry Section; North Garden, Adelphia.

#### Science in General

**X4** *American Nature Study Society*—8:00 A.M.; Meeting of ANSS Board of Directors; Junior Room, Adelphia.

**X4**, **FG7**, and **Q2** *American Nature Study Society; National Association of Biology Teachers; and National Science Teachers Association*—9:00 A.M.; Preview of Biology Films; Crystal Room, Adelphia. 10:00 A.M.; Meeting the Needs of Pupils through Science; Crystal Room, Adelphia.

**X13** *Sigma Delta Epsilon*—9:00 A.M.; National Council Meeting; Room 108, Bellevue-Stratford.

### Thursday Noon and Afternoon

#### AAAS as a Whole

*AAAS Executive Committee Meeting*—12:00 noon; Suite of Administrative Secretary, Bellevue-Stratford.

*AAAS Council Meeting*—4:00 P.M.; Ballroom, Bellevue-Stratford.

*AAAS Committee for Social Physics*—2:00 P.M.; Session: Social Physics; Reception Room, Bellevue-Stratford. 2:30 P.M.; Symposium: Soviet Science, Part II; Ballroom, Municipal Auditorium.



## Physics

**B** *Section on Physics*—2:00 P.M.; Conference on Applied Physics; Room D, Municipal Auditorium.

**B1** *American Meteorological Society*—2:00 P.M.; Conference of Eastern Meteorologists; Crystal Room, John Bartram.

## Chemistry

**C** *Section on Chemistry*—1:30 P.M.; Symposium: Stream Pollution and Industrial Wastes, Part II; Room 101, Municipal Auditorium.

## Geology and Geography

**E and E1** *Section on Geology and Geography; and Geological Society of America*—2:00 P.M.; Concurrent Session 1; General Geology; Room 205, Municipal Auditorium. 2:00 P.M.; Concurrent Session 3; Symposium: The Nation's Water: Want, Waste, and Why? Room B, Municipal Auditorium.

**E and E2** *Section on Geology and Geography; and Middle Atlantic Division, Association of American Geographers*—2:00 P.M.; Concurrent Session 2; Geography; Room C, Municipal Auditorium.

## Zoological Sciences

**F and F2** *Section on Zoological Sciences; and American Society of Zoologists*—2:00 P.M.; Symposium: Hormones in Invertebrate Animals; Ballroom, Benjamin Franklin. 4:30 P.M.; Annual Business Meeting; Ballroom, Benjamin Franklin.

**F1** *American Society of Protozoologists*—2:00 P.M.; Session for Contributed Papers; Franklin Room, Benjamin Franklin.

## Zoological and Botanical Sciences

**FG1** *American Microscopical Society*—12:15 P.M.; Executive Committee Luncheon and Business Meeting; Room 210-212, Benjamin Franklin.

**FG3** *Beta Beta Beta*—12:15 P.M.; Luncheon and Convention Address; Betsy Ross Room, Benjamin Franklin. 1:30 P.M.; Business Session; Betsy Ross Room, Benjamin Franklin.

**FG4** *Biometric Society, Eastern North American Region*—2:00 P.M.; Cosponsor of Symposium: Use of Statistical Models to Interpret Data on Human Population Genetics; South Garden, Bellevue-Stratford. See H and FG4.

**FG7** *National Association of Biology Teachers*—2:00 P.M.; Address and Panel Discussion; Continuity of the Biology Programs; Jefferson Room, Adelphia.

## Anthropology

**H and I1** *Section on Anthropology; and Society for Research in Child Development*—2:30 P.M.; Concurrent Session 1; Symposium: Sex Education and Its Relation to the Sexual Behavior of Children and Young Adults; Clover Room, Bellevue-Stratford.

**H and H1** *Section on Anthropology; and Society for American Archaeology*—2:00 P.M.; Concurrent Session 2; American Indian Studies; North Garden, Bellevue-Stratford.

**H and FG4** *Section on Anthropology; and Biometric Society, Eastern North American Region*—2:00 P.M.; Concurrent Session 3; Symposium: Use of Statistical Models to Interpret Data on Human Population Genetics; South Garden, Bellevue-Stratford.

## Psychology

**I and Q** *Section on Psychology; and Section on Education*—2:30 P.M.; Vice-Presidential Addresses of Sections I and Q; Rose Garden, Bellevue-Stratford.

**I1** *Society for Research in Child Development*—2:30 P.M.; Cosponsor of Symposium: Sex Education and Its Relation to the Sexual Behavior of Children and Young Adults; Clover Room, Bellevue-Stratford.

## Social and Economic Sciences

**K5** *Pi Gamma Mu*—12:00 noon; Luncheon; Pink Room, Bellevue-Stratford.

## Engineering

**M and M3** *Section on Engineering; and American Society of Mechanical Engineers*—2:00 P.M.; Symposium: Prosthetic and Sensory Aids—Engineering, Design, and Uses, Part II; Room 202, Municipal Auditorium.

**M1, M, and K** *AAAS Committee for Social Physics; Section on Engineering; and Section on Social and Economic Sciences*—2:00 P.M.; Session on Social Physics; Reception Room, Bellevue-Stratford.

**M2** *American Society for Quality Control*—2:00 P.M.; Session of the Philadelphia Section; Room 300, Municipal Auditorium.

## Medical Sciences

**N3, N6, and N8** *Subsection on Pharmacy, Np; American Pharmaceutical Association, Scientific Section; and American Society of Hospital Pharmacists*—2:00 P.M.; Session for Contributed Papers; Room A, Municipal Auditorium.

## Agriculture

**O** *Section on Agriculture*—2:00 P.M.; Symposium: Mineral Nutrition of Plants, Animals, and Man, Part II; Room 206, Municipal Auditorium.

## Industrial Science

**P2** *Society for Industrial Microbiology*—2:00 P.M.; Symposium: Microbiologic Assay: Microorganisms in Research and Test Procedures, Part I; Ballroom, Sylvania. 4:30 P.M.; Business Meetings of Local Sections of the Society; Ballroom, Sylvania.

## Education

**Q and I** *Section on Education; and Section on Psychology*—2:30 P.M.; Vice-Presidential Addresses of Sections Q and I; Rose Garden, Bellevue-Stratford.

**Q2** *National Science Teachers Association, Business-Industry Section*—12:15 P.M.; Luncheon; North Garden, Adelphia. 2:00 P.M.; Concurrent Session 1; Promising Practices for Elementary School Science; North Garden, Adelphia. 2:00 P.M.; Concurrent Session 2; Promising Practices for Secondary-School Science; South Garden, Adelphia. 2:00 P.M.; *Business-Industry Section of NSTA*; Concurrent Session 3; Symposium: Media and Techniques for Educational Relations Programs of Business and Industry; Coral-Lotus Room, Adelphia.

## Science in General

**X2** *American Association of Scientific Workers*—2:30 P.M.; Forum: Antiscientific Trends in America; Burgundy Room, Bellevue-Stratford.

**X4** *American Nature Study Society*—2:00 P.M.; Session for Contributed Papers; Crystal Room, Adelphia. 4:00 P.M.; Annual Meeting of ANSS; Crystal Room, Adelphia.

**X15** *The Scientific Research Society of America*—4:00 P.M.; Annual Convention of RESA; Oak Room, Bellevue-Stratford.

**X16** *The Society of the Sigma Xi*—2:00 P.M.; Annual Convention of the Society of the Sigma Xi; Oak Room, Bellevue-Stratford.

## Thursday Evening

### AAAS as a Whole

*National Geographic Society*—8:15 P.M.; Annual Lecture, and Sound Film in Color; S. DILLON RIPLEY: Ornithological Explorations in Nepal; Irvine Auditorium, University of Pennsylvania.

*The Scientific Research Society of America*—8:00 P.M.; Annual Address; ELMER W. ENGSTROM: The Human Element in Industrial Research; Ballroom, Bellevue-Stratford.

### Physics

**B** *Section on Physics*—7:00 P.M.; Physicists' Dinner; Ivy Room, Houston Hall, University of Pennsylvania.

### Geology and Geography

**E and E1** *Section on Geology and Geography; and Geological Society of America*—8:00 P.M.; Vice-Presidential Address of Section E; Bryn Mawr College. 9:00 P.M.; Geologists' Smoker; Bryn Mawr College.

### Zoological Sciences

**F4** *Society of Systematic Zoology*—8:00 P.M.; Symposium: Classification of Animals; Ballroom, Benjamin Franklin.

### Zoological and Botanical Sciences

**FG7** *National Association of Biology Teachers*—6:30 P.M.; Buffet Supper of Science Teaching Societies; Crystal Room, Adelphia. 10:00 P.M.; All-Societies Mixer; North Garden, Adelphia.

### Botanical Sciences

**G2** *Philadelphia Botanical Club*—8:00 P.M.; Open Meeting: Characteristic Plants of the Philadelphia Region; Academy of Natural Sciences of Philadelphia.

### Psychology

**I1** *Society for Research in Child Development*—6:00 P.M.; Presidential Address; Business Meeting; and Dutch Treat Cocktail Party; Red Room, Bellevue-Stratford.

### Social and Economic Sciences

**K** *Section on Social and Economic Sciences*—8:00 P.M.; Research Needs and Opportunities and Developmental Programs; Burgundy Room, Bellevue-Stratford.

### Industrial Science

**P2** *Society for Industrial Microbiology*—8:00 P.M.; Symposium: Microbiologic Assay: Microorganisms in Research and Test Procedures, Part II; Ballroom, Sylvaia.

### Education

**Q2** *National Science Teachers Association*—6:30 P.M.; Buffet Supper of Science Teaching Societies; Crystal Room, Adelphia. 10:00 P.M.; All-Societies Mixer; North Garden, Adelphia.

### Science in General

**X4** *American Nature Study Society*—6:30 P.M.; Buffet Supper of Science Teaching Societies; Crystal Room, Adelphia. 8:00 P.M.; Annual Showing of Kodachromes; Crystal Room, Adelphia. 10:00 P.M.; All-Societies Mixer; North Garden, Adelphia.

## Friday, December 28

### Friday Morning

### AAAS as a Whole

9:30 A.M.; Conference on Scientific Manpower, Part I; Burgundy Room, Bellevue-Stratford.

*The Academy Conference; and the Pennsylvania Academy of Science*—9:30 A.M.; Some Phases of Research by Pennsylvania Scientists; Room D, Municipal Auditorium.

### Physics

**B** *Section on Physics*—9:30 A.M.; Symposium: Semiconductors, Part I; Auditorium, Houston Hall, University of Pennsylvania.

**B2 and B3** *Oak Ridge Institute of Nuclear Studies; and U. S. Atomic Energy Commission, Isotopes Division*—9:30 A.M.; Symposium: Cancer Therapy with Radioisotopes, Part I: Internally Administered Radiation; Ballroom, Municipal Auditorium.

### Chemistry

**C** *Section on Chemistry*—8:30 A.M.; Symposium: Recent Advances in Catalysis; Room 101, Municipal Auditorium.

### Geology and Geography

**E and E1** *Section on Geology and Geography; and Geological Society of America*—9:00 A.M.; Concurrent Session 1; Symposium: Crystalline Rocks of the Appalachians, Part I; Room B, Municipal Auditorium. 9:00 A.M.; Concurrent Session 2; Symposium: Foreign Petroleum Geology and Carbon 14; Room C, Municipal Auditorium.

**E4** *National Speleological Society*—9:00 A.M.; Meeting of Executive Committee; Museum, Academy of Natural Sciences of Philadelphia.

### Zoological Sciences

**F1** *American Society of Protozoologists*—9:00 A.M.; Session for Contributed Papers; Rooms 202-204-206, Benjamin Franklin.

**F2** *American Society of Zoologists*—9:00 A.M.; Concurrent Session 1; General Physiology; Ballroom, Benjamin Franklin. 9:00 A.M.; Concurrent Session 2; Embryology; Franklin Room, Benjamin Franklin. 9:00 A.M.; Concurrent Session 3; Endocrinology; Betsy Ross Room, Benjamin Franklin. 9:00 A.M.; Concurrent Session 4; Cytology and General Morphology; Ballroom Foyer, Benjamin Franklin.

**F4** *Society of Systematic Zoology*—8:00 A.M.; Annual Breakfast and Business Meeting; Poor Richard Room, Benjamin Franklin.

### Zoological and Botanical Sciences

**FG4 and A** *Biometric Society, Eastern North American Region; and Section on Mathematics*—9:00 A.M.; Session for Papers; Red Room, Bellevue-Stratford.

**FG7** *National Association of Biology Teachers*—8:00 A.M.; Meeting of NABT Conservation Project Committee; Coral-Lotus Room, Adelphia.

**FG7, Q2, and X4** *National Association of Biology Teachers; National Science Teachers Association; and American Nature Study Society*—9:00 A.M.; Preview of Natural History Films; Crystal Room, Adelphia. 10:00 A.M.; Meeting the Needs of Communities through Science; Crystal Room, Adelphia.

### Botanical Sciences

**G3** *Phycological Society of America*—9:00 A.M.; Session for Contributed Papers in Phycology; Room 252, Benjamin Franklin.

### Anthropology

**H** *Section on Anthropology*—9:30 A.M.; Concurrent Session 1; Papers Illustrating the Present Range of

Physical Anthropology; South Garden, Bellevue-Stratford.

**H and H1** *Section on Anthropology; and Society for American Archaeology*—9:30 A.M.; Concurrent Session 2; Symposium: Prehistoric and Historic Asia: Transpacific contacts with the New World, Session A: Culture History of the Arctic and the Northern Pacific; North Garden, Bellevue-Stratford.

#### Psychology

**I1** *Society for Research in Child Development*—9:30 A.M.; Contributed Papers; Rose Garden, Bellevue-Stratford.

#### Engineering

**M** *Section on Engineering*—9:00 A.M.; Concurrent Session 1; Symposium: Nuclear Engineering, Part I; Room 200, Municipal Auditorium.

#### Medical Sciences

**N3, N6, and N8** *Subsection on Pharmacy, Np; American Pharmaceutical Association, Scientific Section; and American Society of Hospital Pharmacists*—9:30 A.M.; Session for Contributed Papers; Room A, Municipal Auditorium.

#### Agriculture

**O** *Section on Agriculture*—9:00 A.M.; Symposium: Mineral Nutrition of Plants, Animals, and Man, Part III; Room 206, Municipal Auditorium.

#### Industrial Science

**P** *Section on Industrial Science*—10:00 A.M.; Inauguration of Section P; Ballroom, Sylvania.

**P2** *Society for Industrial Microbiology*—Visits to establishments of interest to members of the society.

#### Education

**Q** *Section on Education*—9:30 A.M.; Concurrent Session 1; Contributed Papers; Supper Room 1, Ritz-Carlton. 9:30 A.M.; Concurrent Session 2; Contributed Papers; Junior Room, Ritz-Carlton.

#### Science in General

**X1 and X9** *The Academy Conference; and Pennsylvania Academy of Science*—9:30 A.M.; Some Phases of Research by Pennsylvania Scientists; Room D, Municipal Auditorium.

**X6, I, K, M, M5, M6, and Q1** *Conference on Scientific Manpower; Section on Psychology; Section on Social and Economic Sciences; Section on Engineering; Engineers' Club of Philadelphia; Engineers' Council for Professional Development; and AAAS Cooperative Committee on the Teaching of Science and Mathematics*—9:30 A.M.; Conference on Scientific Manpower, Part I: Supply and Demand; Burgundy Room, Bellevue-Stratford.

**X7** *Honor Society of Phi Kappa Phi*—9:00 A.M.; Meeting of the Executive Council; Blue Room, Bellevue-Stratford.

**X13** *Sigma Delta Epsilon*—7:30 A.M.; Grand Chapter Meeting: Breakfast and Business Meeting; Reception Room, Bellevue-Stratford.

#### Friday Noon and Afternoon

##### Physics

**B** *Section on Physics*—2:00 P.M.; Symposium: Semiconductors, Part II; Auditorium, Houston Hall, University of Pennsylvania.

**B2** *Oak Ridge Institute of Nuclear Studies*—12:00

NOON; Luncheon; Harrison-Smith-Penniman Room, Houston Hall, University of Pennsylvania.

**B2 and B3** *Oak Ridge Institute of Nuclear Studies; and U. S. Atomic Energy Commission, Isotopes Division*—2:00 P.M.; Symposium: Cancer Therapy with Radioisotopes, Part II: New Developments in Teletherapy; Ballroom, Municipal Auditorium.

##### Chemistry

**C** *Section on Chemistry*—12:15 P.M.; Chemists' Luncheon; Ivy Room, Houston Hall, University of Pennsylvania. 1:30 P.M.; Symposium: The Chemistry of Colchicine and Related 7-Membered Carbocyclic Compounds; Room 101, Municipal Auditorium.

##### Geology and Geography

**E and E1** *Section on Geology and Geography; and Geological Society of America*—2:00 P.M.; Concurrent Session 1; Symposium: Crystalline Rocks of the Appalachians, Part II; Room B, Municipal Auditorium. 2:00 P.M.; Concurrent Session 2; Symposium: Foreign Petroleum Geology and Petroleum Economics; Room C, Municipal Auditorium.

**E4** *National Speleological Society*—2:00 P.M.; Contributed Papers and Social Hour; Museum, Academy of Natural Sciences of Philadelphia.

##### Zoological Sciences

**F** *American Society of Protozoologists*—12:30 P.M.; Luncheon and Business Meeting; Poor Richard Room, Benjamin Franklin. 2:30 P.M.; Session for Contributed Papers; Rooms 202-204-206, Benjamin Franklin.

**F2** *American Society of Zoologists*—2:15 P.M.; Concurrent Session 2; Demonstrations; Rooms 120, 264, Histology Laboratory, University of Pennsylvania Medical School. 2:15 P.M.; Concurrent Session 3; Demonstrations by Motion Pictures; Lecture Room A, University of Pennsylvania Medical School. 2:15 P.M.; Concurrent Session 4; Cellular Physiology; Lecture Room B, University of Pennsylvania Medical School. 4:30 P.M.; Session 5; Panel Discussion: Present Trends in the Teaching of the Introductory Laboratory; Lecture Room B, University of Pennsylvania Medical School.

**F3** *Herpetologists League*—3:00 P.M.; Conference of Eastern Herpetologists; Poor Richard Room, Benjamin Franklin.

##### Zoological and Botanical Sciences

**FG1** *American Microscopical Society*—2:00 P.M.; Symposium: Modern Methods for Microscopy II; Betsy Ross Room, Benjamin Franklin.

**FG7** *National Association of Biology Teachers*—12:30 P.M.; Luncheon; Jefferson Room, Adelphia. 2:00 P.M.; Concurrent Session 1; Conservation Education Workshop; Jefferson Room, Adelphia.

##### Botanical Sciences

**G and FG5** *Section on Botanical Sciences; and Ecological Society of America*—2:00 P.M.; Concurrent Session 1; Contributed Papers; Room 205, Municipal Auditorium.

**G3** *Phycological Society of America*—2:00 P.M.; Session for Contributed Papers in Phycology and Business Meeting; Franklin Room, Benjamin Franklin.

##### Anthropology

**H and K2** *Section on Anthropology; and American Sociological Society*—2:30 P.M.; Concurrent Session 1; Symposium: Social Structure; Rose Garden, Bellevue-Stratford.

**H** *Section on Anthropology*—2:30 P.M.; Concurrent Session 2; Symposium: Prehistoric and Historic Asia; North Garden, Bellevue-Stratford.

#### Psychology

**I** *Section on Psychology*—1:30 P.M.; Session for Contributed Papers; Oak Room, Bellevue-Stratford.

#### Social and Economic Sciences

**K** *Section on Social and Economic Sciences*—12:00 NOON; Annual Luncheon of Section K; Blue Room, Bellevue-Stratford. 3:00 P.M.; Concurrent Session 2; Panel Discussion: The Individual Responsibility of the Scientist; Burgundy Room, Bellevue-Stratford.

**K1** *American Home Economics Association*—2:00 P.M.; Family Life and Home Economics; Reception Room, Bellevue-Stratford.

#### History and Philosophy of Science

**L** *Section on History and Philosophy of Science*—2:00 P.M.; Symposium: Rewards of Research; Room 300, Municipal Auditorium.

#### Engineering

**M** *Section on Engineering*—2:00 P.M.; Symposium: Nuclear Engineering, Part II; Room 200, Municipal Auditorium.

#### Medical Sciences

**N2** *Subsection on Dentistry, Nd*—1:30 P.M.; Symposium: Fluoridation as a Public Health Measure; Room D, Municipal Auditorium.

**N3, N6, and N8** *Subsection on Pharmacy, Np; American Pharmaceutical Association, Scientific Section; and American Society of Hospital Pharmacists*—2:00 P.M.; Session for Contributed Papers; Room A, Municipal Auditorium.

**N4** *Alpha Epsilon Delta*—12:30 P.M.; Luncheon; Ballroom, Benjamin Franklin.

**N4, F2, FG3, K, and N1** *Alpha Epsilon Delta; American Society of Zoologists; Beta Beta Beta; Section on Social and Economic Sciences; and Subsection on Medicine, Nm*—2:00 P.M.; Symposium: Premedical Education and Social Health; Ballroom, Benjamin Franklin.

#### Agriculture

**O** *Section on Agriculture*—2:00 P.M.; Symposium: Mineral Nutrition of Plants, Animals and Man, Part IV; Room 206, Municipal Auditorium.

#### Industrial Science

**P and P1** *Section on Industrial Science; and American Industrial Hygiene Association*—2:00 P.M.; Symposium: The Role of Industrial Hygiene in Industrial Science; Ballroom, 'Sylvania.

#### Education

**Q** *Section on Education*—2:00 P.M.; Concurrent Session 1; Panel: Visual Performance as Applied in Industrial and Educational Management; Supper Room 1, Ritz-Carlton. 2:00 P.M.; Concurrent Session 2; Session for Contributed Papers; Junior Room, Ritz-Carlton. 4:00 P.M.; Business Meeting of Section Q; Junior Room, Ritz-Carlton.

**Q2** *National Science Teachers Association*—2:00 P.M.; Concurrent Session 1; Tomorrow's Scientists and Engineers: Today's High School Youth; South Garden, Adelphia. 2:00 P.M.; Concurrent Session 2; Stepping Up the Health-Science Program; North Garden, Adelphia.

#### Science in General

**X4 and FG7** *American Nature Study Society; and National Association of Biology Teachers*—2:00 P.M.; Panel Discussion: The Museum's Contribution to Science Education; Crystal Room, Adelphia.

**X5, K4, X10, and X11** *City Planning Commission, City of Philadelphia; New York-Philadelphia Chapter, American Institute of Planners; Philadelphia Air Pollution Control Board; and Redevelopment Authority of Philadelphia*—2:00 P.M.; Relationship between Air Pollution Control and Industrial Land Use Planning; South Garden, Bellevue-Stratford.

**X7** *Honor Society of Phi Kappa Phi*—1:30 P.M.; Business Meeting; Red Room, Bellevue-Stratford.

#### Friday Evening

##### AAAS as a Whole

*AAAS Presidential Address*—8:00 P.M.; ROGER ADAMS: Man's Synthetic Future; Ballroom, Bellevue-Stratford.

*AAAS Presidential Reception*—9:00 P.M.; Clover Room and adjacent rooms and foyers, Bellevue-Stratford.

#### Physics

**B2 and 3** *Oak Ridge Institute of Nuclear Studies; U. S. Atomic Energy Commission, Isotopes Division*—8:30 P.M.; Symposium: Cancer Therapy with Radioisotopes, Part III: The Impact of Radioisotopes in Cancer Research; Ballroom, Municipal Auditorium.

#### Zoological Sciences

**F4** *Society of Systematic Zoology*—7:30 P.M.; Council Meeting; Room of Secretary of Society, Benjamin Franklin.

#### Zoological and Botanical Sciences

**FG7** *National Association of Biology Teachers*—8:00 P.M.; Meeting of NABT Conservation Committee, Executive Committee, Regional and State Chairmen; Coral-Lotus Room, Adelphia.

#### Science in General

**X4** *American Nature Study Society*—8:00 P.M.; Panel Discussion: Publishing Nature Magazines; Crystal Room, Adelphia.

#### Saturday, December 29

##### Saturday Morning

##### AAAS as a Whole

*AAAS Council Meeting*—9:00 A.M.; Ballroom, Bellevue-Stratford.

*The Academy Conference*—9:30 A.M.; Round-Table Discussion of Academy Problems, Part I; Green Room, Bellevue-Stratford.

#### Chemistry

**C and C2** *Section on Chemistry; and The American Academy of Forensic Sciences*—9:30 A.M.; Concurrent Session 1; Symposium: Scientific Evidence Pertaining to the Time of Death, Part I; Room 101, Municipal Auditorium.

#### Zoological Sciences

**F1** *American Society of Protozoologists*—9:00 A.M.; Session for Contributed Papers; Rooms 202-204-206, Benjamin Franklin.

**F2 and FG5** *American Society of Zoologists; and Ecological Society of America*—9:00 A.M.; Concurrent Session 1; Animal Behavior and Sociobiology; Ballroom, Benjamin Franklin.

**F2 American Society of Zoologists**—9:00 A.M.; Concurrent Session 2; Experimental Biology, Betsy Ross Room, Benjamin Franklin. 9:00 A.M.; Concurrent Session 3; Endocrinology; Franklin Room, Benjamin Franklin. 9:00 A.M.; Concurrent Session 4; Embryology and Ecology; Ballroom Foyer, Benjamin Franklin.

**F4 Society of Systematic Zoology**—9:30 A.M.; Session for Contributed Papers; Poor Richard Room, Benjamin Franklin.

#### **Zoological and Botanical Sciences**

**FG7 National Association of Biology Teachers**—8:00 A.M.; Meeting of NABT Membership Committee, and Meeting of Editorial Board of *The American Biology Teacher*; Junior Room, Adelphia.

**FG7, Q2, and X4 National Association of Biology Teachers; National Science Teachers Association; and American Nature Study Society**—8:00 A.M.; Meeting of the Officers to plan the 1952 Coordinated Program; Coral-Lotus Room, Adelphia. 9:00 A.M.; Preview of Science Films; Crystal Room, Adelphia. 10:00 A.M.; Meeting the Needs of the Nation and the World through Science; Crystal Room, Adelphia.

#### **Botanical Sciences**

**G and G1 Section on Botanical Sciences; and Botanical Society of America, Inc.**—9:00 A.M.; Concurrent Session 1; Symposium: The Use of Isotopes in Botany; Room B, Municipal Auditorium.

**G and FG5 Section on Botanical Sciences; and Ecological Society of America**—9:00 A.M.; Concurrent Session 2; Contributed Papers; Room C, Municipal Auditorium.

#### **Anthropology**

**H Section on Anthropology**—9:30 A.M.; Concurrent Session 1; Social Organization and Anthropological Theory; South Garden, Bellevue-Stratford. 9:30 A.M.; Concurrent Session 2; Symposium: Prehistoric and Historic Asia: Transpacific Contacts with the New World, Session C: Prehistory and History of Asia and the Near East, II; North Garden, Bellevue-Stratford.

#### **History and Philosophy of Science**

**L Section on History and Philosophy of Science**—10:00 A.M.; Vice-Presidential Address of Section L; Oak Room, Bellevue-Stratford.

**L1 American Philosophical Society**—10:00 A.M.; Lecture: Old Philadelphia: Redevelopment and Preservation; Hall of American Philosophical Society.

**L3 Philosophy of Science Association**—9:30 A.M.; Session for Contributed Papers; Junior Room, Ritz-Carlton.

#### **Engineering**

**M and M4 Section on Engineering; and Engineering Colleges of the Philadelphia Region**—9:00 A.M.; Concurrent Session 1; Symposium: The Joint Participation of Engineers and Medical Scientists in the Activities of the Navy Aeronautical Medical Equipment Laboratory; Room 200, Municipal Auditorium.

#### **Medical Sciences**

**N1, N5, N7, and N9 Subsection on Medicine, Nm; American Geriatrics Society; American Society for the Study of Arteriosclerosis; and Gerontological Society, Inc.**—10:00 A.M.; Symposium: Experimental and Clinical Aspects of Lipid Metabolism, Arteriosclerosis, and the Aging Process, Part I; Ballroom, Municipal Auditorium.

**N2 Subsection on Dentistry, Nd**—9:00 A.M.; Session for Contributed Papers; Room D, Municipal Auditorium.

**N3, N6, and N8 Subsection on Pharmacy, Np; American Pharmaceutical Association, Scientific Section; and American Society of Hospital Pharmacists**—9:30 A.M.; Session for Contributed Papers; Room A, Municipal Auditorium.

#### **Agriculture**

**O, C, and G Section on Agriculture; Section on Chemistry; and Section on Botanical Sciences**—9:30 A.M.; Symposium: Improvement of Soil Structure, Part I; Lecture Room A, Medical School, University of Pennsylvania.

#### **Industrial Science**

**P Section on Industrial Science**—9:30 A.M.; Industrial Science Today; Ballroom, Sylvaia.

#### **Education**

**Q Section on Education**—9:00 A.M.; Symposium: The Work of the Science Teacher, Part I; Clover Room, Bellevue-Stratford.

#### **Science in General**

**X1 The Academy Conference**—9:30 A.M.; Round-Table Discussion of Academy Problems, Part I; Green Room, Bellevue-Stratford.

**X6, I, K, M, M5, M6, and Q1 Conference on Scientific Manpower; Section on Psychology; Section on Social and Economic Sciences; Section on Engineering; Engineers' Club of Philadelphia; Engineers' Council for Professional Development; and AAAS Cooperative Committee on the Teaching of Science and Mathematics**—9:30 A.M.; Conference on Scientific Manpower, Part II: Post-baccalaureate Training; Burgundy Room, Bellevue-Stratford.

**X7 Honor Society of Phi Kappa Phi**—8:00 A.M.; Breakfast and Business Meeting; Pink Room, Bellevue-Stratford.

#### **Saturday Noon and Afternoon**

##### **AAAS as a Whole**

*Meeting of all AAAS Section Chairmen and Secretaries*; 12:00 noon; Luncheon and Business Meeting; Pink Room, Bellevue-Stratford.

*The Academy Conference*—2:00 P.M.; Round-Table Discussion of Academy Problems, Part II; Green Room, Bellevue-Stratford.

#### **Chemistry**

**C and C2 Section on Chemistry; and The American Academy of Forensic Sciences**—2:00 P.M.; Concurrent Session 1; Symposium: Scientific Evidence Pertaining to the Time of Death, Part II; Room 101, Municipal Auditorium.

#### **Zoological Sciences**

**F2 and FG5 Committee for the Study of Animal Societies under Natural Conditions, American Society of Zoologists; and Ecological Society of America**—12:00 noon; Luncheon and Business Meeting; Lafayette Room, Benjamin Franklin.

**F2 American Society of Zoologists**—2:00 P.M.; Concurrent Session 1; General Physiology; Ballroom, Benjamin Franklin. 2:00 P.M.; Concurrent Session 2; Experimental Biology and General Evolution; Betsy Ross Room, Benjamin Franklin. 2:00 P.M.; Concurrent Session 3; Protozoology and Parasitology; Franklin Room, Benjamin Franklin.

#### **Zoological and Botanical Sciences**

**FG1 American Microscopical Society**—4:00 P.M.;

Annual Business Meeting; Poor Richard Room, Benjamin Franklin.

**FG7 National Association of Biology Teachers**—2:00 P.M.; Session for Contributed Papers; Jefferson Room, Adelphia.

#### Botanical Sciences

**G Section on Botanical Sciences**—1:30 P.M.; Concurrent Session 1; Contributed Papers; Room C, Municipal Auditorium. 2:00 P.M.; Concurrent Session 3; Contributed Papers; Room A, Municipal Auditorium.

**G and FG5 Section on Botanical Sciences; and Ecological Society of America**—2:00 P.M.; Concurrent Session 2; Symposium: New Jersey Pine Barrens; Room B, Municipal Auditorium.

#### Anthropology

**H Section on Anthropology**—2:30 P.M.; Concurrent Session 2; Symposium: Prehistoric and Historic Asia: Transpacific Contacts with the New World, Session D: Modern Developments in the Culture History of Asia; North Garden, Bellevue-Stratford.

**H and L2 Section on Anthropology; and Eastern Division, American Philosophical Association**—2:30 P.M.; Concurrent Session 1; Symposium: Cultural Relativism; Rose Garden, Bellevue-Stratford.

#### Social and Economic Sciences

**K and X12 Section on Social and Economic Sciences; and Research Center for Human Relations**—2:00 P.M.; Symposium: National Security and Freedom of Thought: A Research Problem; Ballroom, Bellevue-Stratford.

#### History and Philosophy of Science

**L and L2 Section on History and Philosophy of Science; and Eastern Division, American Philosophical Association**—2:30 P.M.; Symposium: Philosophical Postulates of Physics; South Garden, Bellevue-Stratford.

**L3 Philosophy of Science Association**—2:00 P.M.; Session for Contributed Papers; Junior Room, Ritz-Carlton.

#### Engineering

**M and M4 Section on Engineering; and Engineering Colleges of the Philadelphia Region**—2:00 P.M.; Symposium: The Engineer and Scientific Research, Part I; Room 200, Municipal Auditorium.

#### Medical Sciences

**N1, N5, N7, and N9 Subsection on Medicine, Nm; American Geriatrics Society; American Society for the Study of Arteriosclerosis; and Gerontological Society, Inc.**—2:00 P.M.; Symposium: Experimental and Clinical Aspects of Lipid Metabolism, Arteriosclerosis, and the Aging Process, Part II; Ballroom, Municipal Auditorium.

**N2 Subsection on Dentistry, Nd**—2:00 P.M.; Session for Contributed Papers; Room D, Municipal Auditorium.

**N3, N6, and N8 Subsection on Pharmacy, Np; American Pharmaceutical Association, Scientific Section; and American Society of Hospital Pharmacists**—2:00 P.M.; Symposium: A Panel Discussion of the Newer Toxicants of Medical, Economic, and Pharmaceutical Interest; Room 300, Municipal Auditorium.

#### Agriculture

**O, C, and G Section on Agriculture; Section on Chemistry; and Section on Botanical Sciences**—2:00 P.M.; Symposium: Improvement of Soil Structure, Part II; Lecture Room A, Medical School, University of Pennsylvania.

#### Industrial Science

**P Section on Industrial Science**—2:00 P.M.; Industrial Science Tomorrow; Ballroom, Sylvania.

#### Education

**Q Section on Education**—2:00 P.M.; Symposium: The Work of the Science Teacher, Part II; Clover Room, Bellevue-Stratford.

**Q2 National Science Teachers Association**—2:00 P.M.; Methods and Materials for Teaching Science; North Garden, Adelphia.

#### Science in General

**X1 The Academy Conference**—2:00 P.M.; Round-Table Conference on Academy Problems, Part II; Green Room, Bellevue-Stratford.

**X4 American Nature Study Society**—2:00 P.M.; Panel Discussion: Use of Audio Visual Aids in Nature Teaching; Crystal Room, Adelphia.

**X8 National Association of Science Writers**—2:30 P.M.; Symposium: When Science Meets the Press; and Business Meeting; Reception Room, Bellevue-Stratford.

**X13 Sigma Delta Epsilon**—12:15 P.M.; Luncheon for All Women in Science; Red Room, Bellevue-Stratford.

#### Saturday Evening

##### AAAS as a Whole

**The Academy Conference**—6:00 P.M.; Academy Conference Dinner and Address; Pink Room, Bellevue-Stratford. 7:30 P.M.; Sixth Annual Junior Scientists Assembly; Crystal Room, Adelphia.

**The United Chapters of Phi Beta Kappa**—8:30 P.M.; Annual Address; ARTHUR H. COMPTON: The Foundation of Freedom; Irvine Auditorium, University of Pennsylvania.

**AAAS and American Society of Zoologists**—9:00 P.M. till midnight; Biologists' Smoker; Main Exhibition Hall, Municipal Auditorium.

#### Zoological Sciences

**F and F2 Section on Zoological Sciences; and American Society of Zoologists**—6:30 P.M.; Zoologists' Dinner and Vice-Presidential Address of Section F; Main Cafeteria, Houston Hall, University of Pennsylvania. 9:00 P.M. till midnight; Biologists' Smoker; Main Exhibition Hall, Municipal Auditorium.

#### Botanical Sciences

**G Section on Botanical Sciences**—6:30 P.M.; Botanists' Dinner and Vice-Presidential Address of Section G; Auditorium, Houston Hall, University of Pennsylvania.

#### Anthropology

**H Section on Anthropology**—7:00 P.M.; Anthropologists' Dinner and Vice-Presidential Address of Section H; Burgundy Room, Bellevue-Stratford.

#### Engineering

**M and M4 Section on Engineering; and Engineering Colleges of the Philadelphia Region**—7:30 P.M.; Symposium: The Engineer and Scientific Research, Part II; Room 200, Municipal Auditorium.

#### Education

**Q2 National Science Teachers Association**—7:30 P.M.; Junior Scientists Assembly; Crystal Room, Adelphia.

#### Sunday, December 30

##### Sunday Morning

##### AAAS as a Whole

9:30 A.M.; Symposium: Operation Knowledge, Part I; Room 200, Municipal Auditorium.

9:30 A.M.; Conference on Scientific Manpower, Part III; Burgundy Room, Bellevue-Stratford.

#### Chemistry

**C** *Section on Chemistry*—9:00 A.M.; Symposium: Recent Advances in Petroleum and Petroleum Technology, Part I; Room 101, Municipal Auditorium.

#### Zoological Sciences

**F, G, F1, F2, FG6, and G1**—*Section on Zoological Sciences; Section on Botanical Sciences; American Society of Protozoologists; American Society of Zoologists; Genetics Society of America; and Botanical Society of America, Inc.*—9:30 A.M.; Concurrent Session 1; Symposium: Sex in Microorganisms, Part I; Room 10, Zoology Building, University of Pennsylvania.

**F, F2, FG2, and FG5** *Section on Zoological Sciences; American Society of Zoologists; American Society of Limnology and Oceanography; and Ecological Society of America*—9:30 A.M.; Concurrent Session 2; Symposium: Estuarine Ecology, Part I; Room B, Municipal Auditorium.

**FG7 and X4** *National Association of Biology Teachers; and American Nature Study Society*—8:00 A.M.; Departure of Field Trip to New Jersey Pine Barrens; Lobby, Adelphia.

#### Botanical Sciences

**G** *Section on Botanical Sciences*—10:00 A.M.; Concurrent Session 2; Panel Discussion: Foods and People, Part I; Irvine Auditorium, University of Pennsylvania.

#### Anthropology

**H and H2** *Section on Anthropology; and Society for Applied Anthropology*—10:00 A.M.; Concurrent Session 1; What are the Goals of Applied Anthropology in Political and Social Change? Room 300, Municipal Auditorium.

**H and H3** *Section on Anthropology; and University Museum*—10:00 A.M.; Concurrent Session 2; Symposium: Prehistoric and Historic Asia; Auditorium of the University Museum.

**N1, N5, N7, and N9** *Subsection on Medicine, Nm; American Geriatrics Society; American Society for the Study of Arteriosclerosis; and Gerontological Society, Inc.*—10:00 A.M.; Symposium: Experimental and Clinical Aspects of Lipid Metabolism, Arteriosclerosis, and the Aging Process, Part III; Ballroom, Municipal Auditorium.

#### Industrial Science

**P** *Section on Industrial Science*—9:30 A.M.; Public Aspects of Industrial Science; Ballroom, Sylva.

#### Education

**Q2** *National Science Teachers Association*—8:00 A.M. till noon; NSTA Executive Committee Meeting; Junior Room, Adelphia.

#### Science in General

**X6, I, K, M, M5, M6, and Q1** *Conference on Scientific Manpower; Section on Psychology; Section on Social and Economic Sciences; Section on Engineering; Engineers' Club of Philadelphia; Engineers' Council for Professional Development; and AAAS Cooperative Committee on the Teaching of Science and Mathematics*—9:30 A.M.; Conference on Scientific Manpower, Part III: Selection Techniques: Psychological Background; Burgundy Room, Bellevue-Stratford.

#### Sunday Afternoon

##### AAAS as a Whole

2:00 P.M.; Symposium: Operation Knowledge, Part II; Room 200, Municipal Auditorium.

##### Physics

**B** *Section on Physics*—4:00 to 6:00 P.M.; Open House; Department of Physics, University of Pennsylvania.

##### Chemistry

**C** *Section on Chemistry*—2:00 P.M.; Concurrent Session 1; Symposium: Recent Advances in Petroleum and Petroleum Technology, Part II; Room 101, Municipal Auditorium. 4:00 to 6:00 P.M.; Open House; Department of Chemistry, University of Pennsylvania.

##### Zoological Sciences

**F** *Section on Zoological Sciences*—4:00 to 6:00 P.M.; Open House; Department of Zoology, University of Pennsylvania.

**F, G, F1, F2, FG6, and G1** *Section on Zoological Sciences; Section on Botanical Sciences; American Society of Protozoologists; American Society of Zoologists; Genetics Society of America; and Botanical Society of America, Inc.*—2:00 P.M.; Concurrent Session 1; Symposium: Sex in Microorganisms, Part II; Room 10, Zoology Building, University of Pennsylvania.

**F, F2, FG2, and FG5** *Section on Zoological Sciences; American Society of Zoologists; American Society of Limnology and Oceanography; and Ecological Society of America*—2:00 P.M.; Concurrent Session 2; Symposium: Estuarine Ecology, Part II; Room B, Municipal Auditorium.

##### Botanical Sciences

**G** *Section on Botanical Sciences*—3:00 P.M.; Concurrent Session 2; Panel Discussion: Foods and People, Part II; Irvine Auditorium, University of Pennsylvania. 4:00 to 6:00 P.M.; Open House; Department of Botany, University of Pennsylvania.

##### History and Philosophy of Science

**L** *Section on History and Philosophy of Science*—2:00 P.M.; Symposium: History of Science; Room 300, Municipal Auditorium.

##### Medical Sciences

**N1, N5, N7, and N9** *Subsection on Medicine, Nm; American Geriatrics Society; American Society for the Study of Arteriosclerosis; and Gerontological Society, Inc.*—2:00 P.M.; Symposium: Experimental and Clinical Aspects of Lipid Metabolism, Arteriosclerosis, and the Aging Process, Part IV; Ballroom, Municipal Auditorium.

##### Science in General

**X13** *Sigma Delta Epsilon*—5:00 P.M.; Thirtieth Anniversary Tea; Red Room, Bellevue-Stratford.

#### Sunday Evening

##### AAAS as a Whole

7:30 P.M.; Symposium: Operation Knowledge, Part III; Ballroom, Municipal Auditorium. See AAAS Symposium, General, for speakers.

*Honor Society of Phi Kappa Phi*—8:00 P.M.; Biennial Address; C. W. DE KIEWIET: Our National Resources of Skill and Wisdom; Irvine Auditorium, University of Pennsylvania.



## Astronomy

D Section on Astronomy—8:30 P.M.; Concurrent Session 2; Address of Retiring Vice President of Section D; Lecture Hall, Franklin Institute.

Monday, December 31

### Monday Morning

## Astronomy

D, D1, and D2 Section on Astronomy; Amateur Astronomers of the Franklin Institute; and Rittenhouse Astronomical Society—9:00 A.M.; Symposium: Astronomical Photoelectric Photometry: Recent Developments in Techniques and Instrumentation; Planetarium Chamber, Fels Planetarium of the Franklin Institute.

## Engineering

M Section on Engineering—9:00 A.M.; Inspection of the Laboratories and Museum of the Franklin Institute.

### Monday Afternoon

## Engineering

M and M7 Section on Engineering; and the Franklin Institute—2:00 P.M.; Technical Session; Lecture Hall, The Franklin Institute.

## AAAS Science Theatre

The AAAS Science Theatre, a permanent feature of the Association's annual meetings, presents showings of the latest domestic and foreign scientific films—nearly all with sound—almost continuously throughout the meeting period. Please note, in the following schedule, that programs are both repeated and transposed to increase the opportunities to see particular films. Most titles—but not all—will be shown twice. The Association is greatly indebted to all those who made these pictures and lent them for showing.

Location. The AAAS Science Theatre is in the Lecture Hall of the Philadelphia Municipal Auditorium. Since the capacity of this room, which is particularly designed for projection, is 450, there should be no congestion. The Science Theatre is entered from the Main Exhibition Hall, one floor beneath the exhibit area of the Exposition. It may also be entered through the building at the right of the Municipal Auditorium.

Admission. The Science Theatre is a feature for the pleasure and information of all registrants attending the Annual Meeting. Admission is restricted to those who wear the AAAS Convention Badge—or who show an Association registration receipt.

### Hours

Thursday, Dec. 27—10:00 A.M. to 2:00 P.M.; 2:00 P.M. to 6:00 P.M.; and 6:00 P.M. to 10:00 P.M.

Friday, Dec. 28—10:00 A.M. to 2:00 P.M.; 2:00 P.M. to 6:00 P.M.; and 6:00 P.M. to 10:00 P.M.

Saturday, Dec. 29—10:00 A.M. to 2:00 P.M.; 2:00 P.M. to 6:00 P.M.; and 6:00 P.M. to 10:00 P.M.

Sunday, Dec. 30—2:00 P.M. to 6:00 P.M.

### PROGRAM 1

Thursday Morning, December 27, 10:00 A.M.—2:00 P.M.

1. REPORT ON THE LIVING. U. S. Public Health Service. Black-and-white, 25 minutes.
2. PIPELINE TO THE CLOUDS. General Electric Company. Color, 25 minutes.
3. THE ONION. British Information Services. Black-and-white, 11 minutes.

4. MARVELS IN MINIATURE. Australian National Film Board. Color, 20 minutes.
5. SCHIZOPHRENIA: SIMPLE TYPE DETERIORATED. Mental Health Division, National Health and Welfare, Canada. Black-and-white, 11 minutes.
6. SCHIZOPHRENIA: CATATONIC TYPE. Mental Health Division, National Health and Welfare, Canada. Black-and-white, 12 minutes.
7. WEST VIRGINIA AND ITS NATURAL RESOURCES. U. S. Bureau of Mines. Color, 32 minutes.
8. USE OF ARTIFICIAL KIDNEY. Davis & Geck, Inc. Color, 15 minutes.
9. TERRE DE GLACES. Paul Emile Victor. Black-and-white, 20 minutes.
10. REPRODUCTIVE BEHAVIOR IN THE AFRICAN MOUTH-BREEDING FISH, *Tilapia Macrocephala* (BLEEKER). Lester R. Aronson and A. Marie Holz-Tucker, American Museum of Natural History. Color, silent, 32 minutes.
11. BIKINI—RADIOLOGICAL LABORATORY. U. S. Atomic Energy Commission. Color, 22 minutes.

### \* PROGRAM 2

Thursday Afternoon, December 27, 2:00 P.M.—6:00 P.M.

1. EMBRYOLOGY OF HUMAN BEHAVIOR. Medical Film Institute, AMA. Color, 28 minutes.
2. PIN MOLD. British Information Services. Black-and-white, 10 minutes.
3. FEATHERED FISHERS. Australian National Film Board. Color, 20 minutes.
4. NAVAL PHOTOGRAPHY IN SCIENCE. U. S. Department of Defense. Color, 28 minutes.
5. THE STORY OF MENHADEN. Fish and Wildlife Service. Color, 20 minutes.
6. SHINING RAILS. General Electric Company. Color, 20 minutes.
7. SCHIZOPHRENIA: HEBEPHRENIC TYPE. Mental Health Division, National Health and Welfare, Canada. Black-and-white, 12 minutes.
8. PARANOID CONDITIONS. Mental Health Division, National Health and Welfare, Canada. Black-and-white, 13 minutes.
9. ORGANIC REACTION-TYPE—SENILE. Mental Health Division, National Health and Welfare, Canada. Black-and-white, 13 minutes.
10. POND LIFE. Encyclopaedia Britannica Films Inc. Black-and-white, 11 minutes.
11. SEASHORE LIFE. Encyclopaedia Britannica Films Inc. Color, 11 minutes.
12. MELTING AND REFINING OF STAINLESS STEEL. U. S. Bureau of Mines. Color, 32 minutes.

### PROGRAM 3

Thursday Evening, December 27, 6:00 P.M.—10:00 P.M.

1. PREFRONTAL LOBOTOMY. Dr. Fred W. Geib, and Dr. Benjamin Pollack, Rochester State Hospital. Color, silent, 35 minutes.
2. OPERATION SANDSTONE. U. S. Atomic Energy Commission. Color, 18 minutes.
3. CORAL WONDERLAND. Australian National Film Board. Color, 30 minutes.
4. THE BEAVER. Encyclopaedia Britannica Films Inc. Color, 11 minutes.
5. EXPLOSIONS ON THE SUN. High Altitude Observatory, Harvard University and University of Colorado. Black-and-white, silent, 15 minutes.
6. DEPRESSIVE STATES: I. Mental Health Division,

National Health and Welfare, Canada. Black-and-white, 15 minutes.

7. **DEPRESSIVE STATES: II.** Mental Health Division, National Health and Welfare, Canada. Black-and-white, 12 minutes.
8. **IRON: PRODUCT OF THE BLAST FURNACE.** Academy Films. Color, 11 minutes.
9. **THEN IT HAPPENED.** U. S. Department of Agriculture. Color, 10 minutes.
10. **THE RABBIT'S DEVELOPMENT.** British Information Services. Black-and-white, 29 minutes.
11. **CHICK EMBRYO TECHNIQUES.** Communicable Disease Center, U. S. Public Health Service. Black-and-white, 15 minutes.
12. **NAVY AND SCIENCE.** U. S. Department of Defense. Black-and-white, 12 minutes.
13. **LEARNING ABOUT THE PAST.** Indiana University. Color, 10 minutes.

#### PROGRAM 4

**Friday Morning, December 28, 10:00 A. M.—2:00 P. M.**

1. **CONTROL OF FILARIASIS IN TAHITI.** University of Southern California. Color, 15 minutes.
2. **THE DIAGNOSIS OF POLIOMYELITIS.** The National Foundation for Infantile Paralysis. Black-and-white, 20 minutes.
3. **BROWNIAN MOVEMENT WITHIN CRYSTALS.** Army Chemical Center. Black-and-white, silent, 10 minutes.
4. **YELLOW MAGIC.** Freeport Sulphur Company. Color, 33 minutes.
5. **YOUR ENEMY—GRASSHOPPER.** U. S. Department of Agriculture. Color, 23 minutes.
6. **IMITATION IN A HOME-RAISED CHIMPANZEE.** Keith J. Hayes and Catherine Hayes, Yerkes Laboratories of Primate Biology. Black-and-white, silent, 15 minutes.
7. **MANIC STATE.** Mental Health Division, National Health and Welfare, Canada. Black-and-white, 15 minutes.
8. **FOLIE A DEUX.** Mental Health Division, National Health and Welfare, Canada. Black-and-white, 15 minutes.
9. **NOL STORY.** U. S. Naval Ordnance Laboratory. Color, 30 minutes.
10. **RIVER RUN.** U. S. Forest Service. Color, 15 minutes.
11. **TREASURE FROM THE SEA.** U. S. Bureau of Mines. Color, 11 minutes.
12. **INVISIBLE RAMPART.** Department of the Army. Black-and-white, 16 minutes.
13. **PEN POINT PERCUSSION.** National Film Board of Canada. Black-and-white, 7 minutes.

#### PROGRAM 5

**Friday Afternoon, December 28, 2:00 P. M.—6:00 P. M.**

Essentially the same as Program 1.

#### PROGRAM 6

**Friday Evening, December 28, 6:00 P. M.—10:00 P. M.**

1. **THE TRIPLE THREAT OF BRUCELLOSIS.** U. S. Department of Agriculture. Color, 30 minutes.
2. **THE FUNCTIONAL ANATOMY OF THE HAND.** Dr. J. E. Markee and Dr. John L. Eyler, National Foundation for Infantile Paralysis. Color, 32 minutes.
3. **MOUNTAIN WATER.** U. S. Forest Service. Color, 17 minutes.

4. **CANADA'S AWAKENING NORTH.** Department of Resources and Development, Canada. Black-and-white, 32 minutes.
5. **THE RADIOISOTOPE, PART IV, METHODOLOGY.** Department of the Army. Black-and-white, 40 minutes.
6. **INTRAVENOUS ANESTHESIA AND TRACHEAL INTUBATION.** Dr. Glenn J. Potter, and Billy Burke Productions of Hollywood. Color, 45 minutes.
7. **TRYPTAR (HIGHLY PURIFIED CRYSTALLINE TRYPSIN) SELECTIVE PHYSIOLOGIC DEBRIDEMENT.** The Armour Laboratories. Color, 30 minutes.

#### PROGRAM 7

**Saturday Morning, December 29, 10:00 A. M.—2:00 P. M.**

Essentially the same as Program 3.

#### PROGRAM 8

**Saturday Afternoon, December 29, 2:00 P. M.—6:00 P. M.**

Essentially the same as Program 4.

#### PROGRAM 9

**Saturday Evening, December 29, 6:00 P. M.—10:00 P. M.**

- 1-5. Same as Program 6.
6. **NEW ENGLAND STORMS AS SEEN BY RADAR.** MIT. Black-and-white, silent, 20 minutes.
7. **PARADE OF THE RELAYS.** Bell Telephone System. Black-and-white, 10 minutes.
8. **WORLD GARDEN.** British Information Services. Color, 11 minutes.
9. **STRUGGLE FOR OIL.** British Information Services. Black-and-white, 20 minutes.

#### PROGRAM 10

**Sunday Afternoon, December 30, 2:00 P. M.—6:00 P. M.**

Essentially the same as Program 2.

## ANNUAL EXPOSITION OF SCIENCE AND INDUSTRY

The AAAS Annual Exposition of Science and Industry fills the entire Arena of the Philadelphia Municipal Auditorium. The exhibit area, which is on the street level, is reached through the Curie Avenue entrances.

**Admission to the Exposition.** The Exposition is open to:

1. All registrants attending the 118th Meeting.
2. Members of the professions who have applied for, and received, complimentary tickets of admission.

The regulations of the Auditorium provide for a metering of the attendance by doormen in uniform. Since admission is restricted to registrants and those who present tickets, **PLEASE WEAR YOUR BADGE.**

#### Hours of the Annual Exposition of Science and Industry

Thursday, Dec. 27 .....	10:00 A. M. to 8:00 P. M.
Friday, Dec. 28 .....	10:00 A. M. to 8:00 P. M.
Saturday, Dec. 29 .....	10:00 A. M. to 9:30 P. M.
Sunday, Dec. 30 .....	1:00 P. M. to 8:00 P. M.

#### Directory of Exhibitors

(Descriptive material prepared by individual exhibitors)

**AAAS New Member Service—SCIENCE—THE SCIENTIFIC MONTHLY.** (Booth 312). There are personal advantages in joining the Association. Every person in attendance at the 118th Meeting who is not a member of the AAAS is cordially invited to visit the New Member Service for information concerning the Association. Since

its founding, in 1848, the Association has admitted to membership not only professional scientists but also other men and women who have a general interest in science, who wish to keep informed of the progress of science, and who would like to support the high purposes of the one organization that represents *all* science.

Included in the annual dues of \$6.50 (for 1952), each member has a choice of a year of *SCIENCE*, the scientists' newsweekly, or *THE SCIENTIFIC MONTHLY* (or *both*, for an additional \$3.50). Free sample copies of these two publications will be distributed, and all not familiar with both magazines are invited to visit this booth. *Prospective advertisers* may obtain sample copies of the magazines and rate cards. Members of the AAAS are requested to nominate fellow-scientists for membership.

**Academic Press Inc. (Booth 106).** Visitors are most cordially invited to browse at the Academic Press exhibit to inspect new and forthcoming publications. Chemists will not want to miss Venkataraman's first volume of *The Chemistry of Synthetic Dyes*, Hägglund's *Chemistry of Wood*, Brauns' *The Chemistry of Lignin*, and Jost's *Diffusion in Solids, Liquids, Gases*. *Bacterial Physiology, Modern Trends in Physiology and Biochemistry*, and *International Review of Cytology* are new titles of special interest to the biochemist. Other additions to the Academic Press list are represented by *Combustion, Flames and Explosions of Gases*, by Lewis and von Elbe, *Linear Algebra and Projective Geometry*, by Baer, the first volume of Sommerfeld's *Lectures on Theoretical Physics, Mechanics*, and, in the field of agronomy, a monograph dealing with *Soil, Physical Conditions and Plant Growth*. Virtually all of the series of *Advances* will also show a new volume, thus helping the scientist to keep abreast of developments in his particular field of endeavor. A schedule of publishing activities planned for 1952, covering chemistry, biochemistry, biophysics, and mathematics, will be available. The display of the Press' affiliated firm, Johnson Reprint Corporation, will clearly indicate the program and future projects of this firm.

**Ace Glass Incorporated (Booth 213).** Ace Glass intends to exhibit apparatus for use in research and development as follows: Ace Reaction Flasks listing units available in capacities from 500 ml to 72,000 ml with a large flanged interchangeable neck opening, principal advantage being that one type of head can be used with many capacities merely by changing the lower section. All component parts are completely interchangeable. Trubore Stirrers fabricated from Ace Trubore Tubing allow the use of an all-glass stirrer for vacuum work and any type of general laboratory stirring. Accurate tests show that an average leak rate of 6.4 mm/Hg/min (unlubricated) at 760 mm/Hg differential pressure, and lubricated it is less than 0.05 mm/Hg/min. "Mini-Lab" is a trademarked name for apparatus constructed on a reduced scale for process, analytical and research. The basic units are constructed from completely interchangeable component parts. Eight assemblies will be exhibited and a complete list of interchangeable component parts.

**Aero Service Corporation (Booth 108).** Plastic relief maps for teaching purposes will be featured by Aero Service Corporation in its AAAS exhibit this year. Among the maps to be shown are a Vinylite relief map of the United States printed in 11 vivid colors to emphasize the relief features; 64×40 inches in size, the map weighs a little more than 2 pounds. Horizontal scale is 1 inch equals 20 miles; vertical exaggeration, 5 to 1. . . . A map of the Continental Shelf and Northeastern United

States—38 inches square—completes the exhibit of larger plastic relief maps. . . . At the Aero exhibit also will be a portfolio of 12 U. S. Geological Survey quadrangles, formed in Vinylite. Some of the quads featured in this series are: Soda Canyon, Col., Point Reyes, Calif., Mount Rainier, Wash., Kaaterskill, N. Y., and Harrisburg, Pa. The portfolio of quads is in wide use in college geography and geology classes; the other, newer Aero plastic maps are being enthusiastically received in these fields and by map enthusiasts in all fields of science.

**General Chemical Division, Allied Chemical & Dye Corporation (Booth 205).** General Chemical Division, Allied Chemical & Dye Corporation, will exhibit Baker & Adamson laboratory reagents and fine chemicals. This exhibit will consist of a display of reagents, the quality of which is outstanding, as well as a display of some of our most modern packages developed to make the use of laboratory and fine chemicals easier and safer.

**American Cancer Society (Booths 311 and 313).** The American Cancer Society will have an exhibit containing four main panels, one each on Statistics, Epidemiology, Diagnosis and Treatment of Cancer of the Lung, a left and right panel containing, respectively, pertinent questions and summary on this topic. *Statistics:* Comparative statistics on relationship of lung cancer to all sites prior to 1900 to the present death rates of cancer of the lung in U. S. A. compared by sex and by site. *Epidemiology:* Analysis of endogenous and exogenous factors and their causal relationship to cancer of the lung. *Diagnosis:* An outline of all current diagnostic procedures for cancer of the lung with notes on their varying efficacy. *Treatment:* Indication for surgery—survival rates. (The indication for surgery, curative measures showing survival rates for pneumonectomy, and an outline of several palliative procedures.)

**American Electronic Laboratories, Inc. (Booth 136).** Since its founding, AEL in all its divisions has been mainly concerned with providing the researcher with specialized—often "one-time"—research tools involving electronics. From the experience gained by our staff in satisfying the demand for such devices has evolved standard equipment that has absorbed all the best features of such "custom" laboratory research apparatus. The main display will be that of the Medical Division, which will exhibit its standard laboratory research equipment, student laboratory equipment, and clinical and operating room instruments. The standard research equipment on display will include our Laboratory type Direct-Coupled Amplifier, an A C Amplifier, and a highly stable Regulated Power Supply designed especially for these amplifiers but suitable for general use as well. In addition will be shown a special laboratory Stimulator and our new Dual-Beam Oscilloscope, which has special features that make it of particular value in recording physiological phenomena. Student or general laboratory equipment will include the Model 751 Stimulator and Model 851 battery operated A C Amplifier. The clinical equipment display will be highlighted by a recently developed explosion-resistant Defibrillator.

**American Optical Company (Booth 439).** The latest scientific developments in microscopy will be displayed by the American Optical Company. Representatives W. F. Butler, A. R. Silberg, and G. W. Frid will be present to demonstrate and discuss the many improvements and outstanding features of American Optical Company's instruments, which will include "Autofocus," Fingertip location of all adjustments, Dual-Cone Revolving Nosepiece, positive centering of objectives, accurate and re-

sponsive micrometer screw-type fine adjustment, and new mechanical stages with "pinch-grip" action. The new P-45 Polarizing Microscope, a low-priced instrument designed for educational and industrial use, will be the interesting highlight among the instruments displayed. Other precision instruments to be shown will include Phase, Medical, and Laboratory Microscopes, the low-cost Scholar's Microscope, Stereoscopic Microscopes—which give erect three-dimensional images—Metallurgical Microscopes, a Table Microtome, the newest Photomicrographic Camera, Delineascopes, and many other scientific instruments. Make Booth No. 439 your first stop. See for yourself why so many scientists make AO Spencer instruments their first choice.

**The American Tobacco Company, Incorporated** (Booths 216 and 218). The Research Laboratory of The American Tobacco Company will demonstrate a newly developed recording automatic cigarette weighing balance which utilizes a servomechanism. This instrument eliminates the human factor in the determination of cigarette weights on a laboratory scale. Original application of well-known principles such as this, results in closer control of quality of manufacture. The exhibit will also include samples of cigarette tobaccos, suitably labeled and described, and a display showing steps in the manufacture of cigarette paper from virgin flax.

**Animal Welfare Institute** (Booth 126). The immediate aims of the Animal Welfare Institute, a newly established, nonprofit, membership organization, are threefold: (1) The encouragement of medical research techniques of the highest possible quality, to reduce both the pain and the number of animals required in laboratories; (2) to discover, through surveys, the most suitable methods of procurement of laboratory animals without jeopardizing constructive animal welfare work; (3) the establishment of a standard code of ethics for the use of laboratory animals. Present standards for the use of these animals vary among individuals and institutions. The Institute advocates practical standards of care for their comfort. It believes that science and humanitarianism should complement each other. The Institute will act as a clearing-house for information on welfare of laboratory animals. President of the Institute is Christine Stevens, and headquarters are at 730 Fifth Ave., New York.

**The Annual International Photography-in-Science Salon** (Booths 418, 420, 422, 424, 426, and 428). The Annual International Photography-in-Science Salon is sponsored by THE SCIENTIFIC MONTHLY and the Smithsonian Institution. The prize-winning entries and other photographs of the Fifth Annual International Photography-in-Science Salon—both color and black-and-white prints—are on exhibition for the first time before going on a tour of museums and scientific institutions throughout the country.

**Armour and Company** (Booth 220). In keeping with its policy of serving science and medicine the Research Division of Armour and Company will present the following specialty items for experimental use: Purified hormones and enzymes of animal origin, liver and plasma fractions, enzyme substrates, cofactors, and inhibitors, animal lipids, reference compounds, and other fine biochemicals. A research investigator will answer your questions concerning the chemical, physical, and biologic properties of such compounds.

**Association of American University Presses** (Booth 116). New books published by American University Presses of special interest to AAAS members include: *The Rise of Scientific Philosophy*, by Hans Reichenbach,

\$3.75 (California); *The Origin of the Earth*, by W. M. Smart, \$2.75 (Cambridge); *A Dictionary of Antibiosis* compiled by Leonard Karel and Elizabeth Spencer Roach, \$8.50 (Columbia); *Bees: Their Vision, Chemical Senses, and Language*, by Karl von Frisch, \$3.00 (Cornell); *Diseases in Old Age: A Clinical and Pathological Study of 7941 Individuals over 61 Years of Age*, by Robert T. Monroe, \$5.00 (Harvard); *Space Medicine: The Human Factor in Flights Beyond the Earth*, edited by John P. Marbarger, paperbound \$2.00, clothbound \$3.00 (Illinois); *The Background of Plant Ecology*, by Henry S. Conard, \$5.00 (Iowa State); *Puffballs and their Allies in Michigan*, by Alexander H. Smith, \$3.00 (Michigan); *The Integument of Arthropods*, by A. Glenn Richards, \$6.00 (Minnesota); *Yuman Indian Agriculture*, by Edward F. Castetter and Willis H. Bell, \$6.00 (New Mexico); *Time's Arrow and Evolution*, by H. F. Blum, \$4.00 (Princeton); *The Engineering Method*, by John C. L. Fish, \$3.00 (Stanford); *Waterfowl and their Food Plants in Washington*, by Charles F. Yocom, \$5.00 (Washington); *Mineral Nutrition of Plants*, edited by Emil Truog, \$6.00 (Wisconsin). These books, as well as other recent titles, may be examined and ordered at Booth 116.

**The Atlantic Refining Company** (Booths 212 and 214). The Atlantic Refining Company will have a promotional and educational exhibit featuring chemical products. The various uses of petroleum chemicals and the finished products in which they play an important part will be exhibited. We hope to portray the use of isotopes in studying detergency, possibly based on the use of detergents in motor oils, including a demonstration of Atlantic's radioactive wear test. We hope to include motion wherever possible and feel sure our exhibit will prove of great interest to the members of the Association.

**Atlas Powder Company** (Booths 111 and 113). Atlas will feature a display of the story of sorbitol—the hexahydric alcohol which was a laboratory curiosity in the 1920s but which today offers polyol users a large and increasing supply at low and stable prices. Although sorbitol is related to glycerine and the glycols, it is a natural ingredient of many common fruits. Atlas, however, makes it from corn sugar, and therefore has an abundant source of raw materials. Sorbitol has become the main source of today's Vitamin C, and has also become an important raw material in resin and emulsifier manufacturing. It serves as a moisture-conditioner and sweetener in foods and pharmaceuticals and is used chiefly for its humectant properties in tobacco, cosmetics, cork, adhesives, cellophane, etc.

**Bausch & Lomb Optical Co.** (Booths 417 and 419). New speed; new accuracy; new convenience; those are the key features of the *Labrosopes*, the brand-new Bausch & Lomb laboratory microscopes which will be the feature attraction in a display of scientific optical instruments. No other microscopes ever have received the immediate acclaim that has been awarded the *Labrosopes*. With their straight-line controls, low position, fine adjustment, ball-bearing nosepiece, new mechanical stage, lighter weight, improved slide bearings, and the finest optics than can be made, the *Labrosopes* are truly the world's finest laboratory microscopes. You are invited to see and use the *Labrosopes* at the Bausch & Lomb exhibit. In addition to the *Labrosopes*, demonstrations will be made of the new *Opti-Lume*, an integral microscope illuminator, the wide field stereoscopic microscopes, the "L" photomicrographic camera, microprojector, phase contrast accessories and other optical in-

struments used in medicine, botany, physics, chemistry, biology, zoology, and general science. To assist you in your interests the Bausch & Lomb exhibit will be attended by J. I. Wexlin, G. C. Crebbin, J. A. Robbins, G. T. Hammond, and W. Williams.

**The Bell Telephone Company of Pennsylvania (Booths 328 and 330).** Exhibit consists of a working model of the new coast-to-coast relay system for the transmission of telephone messages and telephone calls. The microwave radio relay system was first used for coast-to-coast television on September 4 when facilities were provided temporarily at the request of the State Department to permit transcontinental telecasting of President Truman's opening address to the Japanese Peace Treaty Conference in San Francisco. The exhibit shows two model towers such as those placed at 30 to 50 mile intervals across the country. The properties of microwaves will be demonstrated at the exhibit, such as their ability to penetrate glass, wood, and paper, and their inability to penetrate materials which conduct electricity, such as various metals, water, and the human body. The use of this latest means for transmitting hundreds of telephone calls simultaneously will also be explained.

**James A. Biddle Co. (Booth 403).** This company will display those products which it supplies to the scientific and research field, including such well-known names as Frahm Resonant Reed Tachometers, Frequency Meters, and Relays; Jagabi Rheostats; Pointolite Lamps; Apiezon Oils, Waxes, and Greases for high vacuum work, and the well-known Kipp & Zonen line of precision laboratory instruments. Also included will be the popular Megger Electrical Resistance Measuring Instruments.

**Biological Abstracts (Booth 110).** A cooperative, non-profit abstracting and indexing service published by biologists for biologists. Leaders in the field are agreed that it is an essential tool of biologists both in teaching and in research. Currently abstracting more than 3,000 journals, the coverage has been expanded by upward of 30% and includes many European, Scandinavian, and Asiatic publications that are not available to the scientists of this country. As well as the complete edition covering all fields of biology, *Biological Abstracts* also is published in nine low-priced sectional editions that were specially designed for individual biologists who are interested only in one or more closely related fields. These editions, and the complete edition, will be on display at Booth No. 110. Members of the editorial staff and business office will be in attendance to welcome visitors and furnish information.

**Biophysical Instruments, Inc. (Booth 407).** This firm was formed by a group of physicists, engineers, machinists, and technicians, experienced in the field of biophysical research instrumentation, who felt the need for an organization capable of cooperating closely with the biological research worker, understanding his problems, and, in addition, possessing the knowledge and facilities to create the electronic and mechanical apparatus needed to help solve these problems. Although Biophysical is a comparative newcomer to the field, the men making up the organization are all well-qualified specialists, experienced in handling the complex instrumentation needs of biological and related research fields. By the very nature of the problems, most of the products of Biophysical Instruments, Inc., are custom-built equipment, each designed for a specific purpose. Should the need arise, however, facilities are available to mass produce any of these instruments that have wider applications. Biophysical Instruments, Inc., has done extensive instrumentation work in the following fields: industrial and medical elec-

tronics; x-ray accessories; biochemical instrumentation; applied optics; electrical recording and amplification; psychological testing devices. And here are a few typical examples of specific instruments designed and built by this organization: paper electrophoresis apparatus; x-ray sequence timer; respiratory CO<sub>2</sub> sampler; impedance plethysmograph; cardiochron; tiny thermocouples; thermistors; photomultiplier photometer. The Biophysical Instrument booth at the AAAS show will feature working models of the most outstanding of the aforementioned instruments. The booth will be manned by experienced staff members who will answer all questions concerning the equipment and who will be in a position to handle direct inquiries or to deal with any specific instrumentation problems presented to them.

**The Blakiston Company (Booth 316).** The Blakiston Company welcomes all members of the American Association for the Advancement of Science to Philadelphia and cordially invites them to its exhibit of scientific and technical books in Booth No. 316. We have a number of outstanding titles to call to your attention: *Quantitative Organic Microanalysis*, by Al Steyermark, head of the Microchemical Department at Hoffman-LaRoche; *Biological Antagonism and Theory of Biological Relativity*, by Gus Martin, director of research, National Drug Company; Peter Gray's *Handbook of Micro-Technique*; Dibble's *Recent Advances in Bacteriology*; Davson's *General Physiology*; Imms' *Insect Natural History*; and Ciba Symposium on *Liver Disease*. Jim Lackey, science editor, will be on hand to discuss each of these and other standard Blakiston works. New material will also be available for the following books which are now on press: Parks and Steinbach's *Inorganic Chemistry*; Nelson's *Comparative Vertebrate Embryology*; Thomas and Granger's *Bacteria*; and Furry, Street and Purcell's *Physics*.

**C. A. Brinkmann & Co. (Booth 128).** Our exhibit will feature various new developments. Foremost among them is the Gamma Inverted Microscope for micro-dissection and similar operations. Also on display will be the new "Selecta" Analytical Balance with built-in weights up to 200 grams and automatic indication of the end result. Furthermore, new models of the Gamma Low Power Manipulators and the latest type Gamma Chambers Micro Manipulators will be exhibited. In the line of photomicrographic equipment, the exhibit will feature a complete setup of the Gamma "Universal" Photomicrographic Camera, the new Zeiss-Winkel Attachment Camera, and Photoelectric Exposure Meters. In connection with the Gamma Camera, the new Gamma Attachment for Pollister Micro Spectrophotometric work will also be on display. In the microscope field, we will show the Zeiss-Opton Stereoscopic Microscope with 5 built-in Objectives, and the revolutionary Zeiss-Winkel Standard Microscope with built-in illumination.

**Cambridge Instrument Company, Inc. (Booth 119).** The exhibit of the Cambridge Instrument Company, Inc., will be of interest to scientists in many fields, a number of the instruments being of comparatively recent development. In the medical field are shown this Company's Simpli-Trol (photographic) and Simpli-Scribe (direct-writing) portable electrocardiographs and a direct-reading Helium Analyzer for the determination of lung capacity. For measuring radioactive emission, Cambridge shows the Precision Ionization Meter, Chang and Eng Fast Neutron Monitor, and Pocket Gamma Dosimeter, as well as the Lindemann-Ryerson and Compton Electrometers. The exhibit also includes the Electron Ray Research pH Meter, a multi-purpose Surface Pyrometer and the

remarkable Flik Galvanometer, having a period of one tenth second. Of interest to microscopists is the Rocking Microtome for cutting sections as thin as 0.2  $\mu$ .

**Carolina Biological Supply Company (Booth 402).** The Carolina Biological Supply Company, of Elon College, North Carolina, and Waubun Laboratories, of Schriever, Louisiana, will be represented by an attractive and interesting exhibit. The exhibit will include biological materials from the Culture, Slide, Preserved Materials, and other departments to illustrate the most up-to-date methods of cultivation of microorganisms, the preparation of microscope slides, and the preservation and injection of microscopic specimens. A staff of professional biologists will be in charge of the exhibit and will offer a complete biological materials information service. Literature including teaching aids will be available free of charge to those viewing the exhibit.

**Fred S. Carver Inc. (Booth 434).** We will exhibit the latest edition of the Standard 10-ton Carver Laboratory Press. The press will be shown with its standard interchangeable accessories available for numerous pressing tests in the biological, chemical, physical and mechanical fields—wherever pressing is required. The accessories for the press provide for handling numerous materials for some 60 general applications of small-scale pressing test. We will also have on display a small museum collection of interesting work done on the press, illustrating a few of the many general applications for this equipment. Samples will include plastic molded items, laminations, pressed oils and liquids, extracts, briquetted items, metallographic mountings, crushing and breaking test specimens, shear test specimens and the like. The press is standard for laboratory development and research work in colleges, universities, industrial and research laboratories throughout this country and abroad. It was used in the personal laboratories of Thomas A. Edison and Henry Ford in the early work on many of the new plastics. The press was also used in atomic research during the war and is used increasingly in that field today. We will also have complete information available on the Carver Laminating Press, recently developed for the production of plastic laminated tamper-proof identification cards and badges. This latter equipment has also been adapted for many interesting applications in scientific fields.

**The Chemstrand Corporation (At right of Lounge Area).** "Acrilan," an acrylic fiber developed by The Chemstrand Corporation, was formally introduced to the trade at exhibitions in October and November. This will be its first general showing. The company is engaged in construction of facilities to produce Acrilan staple fiber at Decatur, Ala., and Chemstrand nylon filament yarn at Pensacola, Fla. The display features an illustration showing the architect's conception of the finished Chemstrand facilities in Decatur. On the center background is a flow chart indicating the steps in Acrilan production. Situated at the end of the flow chart is a revolving bowl of give-away sample Acrilan. Flanking the chart are samples of Acrilan in various end uses to illustrate its properties of dyeability, unlimited blends with all known fibers, warmth and warm-to-the-touch factors, high recovery of fibers when distorted, semipermanent heat-set creases, fabric stability, and bulk without weight. The company has prepared a three-color give-away booklet describing the corporation, its production facilities and the properties ascribed to Acrilan staple fiber.

**Children's Hospital of Philadelphia (Booth 410).** (Exhibit space for the Children's Hospital of Philadelphia

has been purchased by Smith, Kline & French Laboratories.) The exhibit of the Children's Hospital will show some of the research activities of the hospital.

**The Coca-Cola Company, Inc. (Lounge Area).** During the time the Annual Exposition of Science and Industry is open, ice-cold Coca-Cola will be served to those attending the 118th Meeting of the AAAS, through the courtesy and cooperation of the Coca-Cola Bottling Company of Philadelphia and the Coca-Cola Company.

**Cooperative Bureau for Teachers (Booth 124).** The Cooperative Bureau for Teachers is a membership organization numbering education associations, colleges, schools, and individual teachers as its members. Since 1924 it has worked in the private school field; in 1947 its services were extended to colleges, at the request of a number of liberal arts institutions. The Governing Board is now composed of 73 school and college educators. The purposes of the organization are: To facilitate appropriate placement by affording to school and college administrators an extensive registry of successful and prospective teachers; to study college requirements so thoroughly that placements are made only on the basis of an intelligent understanding of all the factors involved; and to place the right teacher in the right job. Chairman of the Governing Board is Dr. Rosemary Park, President of Connecticut College. Director of the Bureau is Miss Mary A. Watson. At present the individual membership of the Bureau numbers about 2,500 teachers.

**Custom Scientific Instruments, Inc. (Booth 102).** Custom Scientific Instruments, Inc., manufacturers of scientific laboratory equipment and instrumentation in the electromechanical field, will display the following items: *CSI-Stoll Quartermaster Universal Wear Tester*—A multi-purpose precision instrument for measuring resistance to surface and edge abrasion, flexing and folding of such materials as woven, nonwoven, knitted, napped and pile fabrics, hosiery, felt, coated fabrics, etc. *CSI-Stoll Flex Tester* is an outgrowth of the Universal Wear Tester for flex abrasion for quality control. *SPI Flammability Tester*—Developed by the Society of Plastics Industry to measure the relative flammability hazard of various sheet materials from 0.001 to 0.250 inches thick or more including plastics, textile fabrics, rubber, paper, etc. *CSI High Speed Angle Centrifuge*—A continuous operating High Speed Centrifuge (13,000–14,000 rpm). *CSI Dry Ice Storage Cabinets*—Cabinets designed for storing vaccines, viruses, drugs, and other biologicals and pharmaceuticals requiring very low temperature for preservation.

**Difco Laboratories Incorporated (Booth 114).** Microbiological Media and Clinical Laboratory Reagents will be on display at the Difco booth. Culture media will include those of the official formulae for control of dairy products, food products, water and sewage, as well as those used for the testing of antibiotics, production and control of biologicals, microbiological determination of vitamins and amino acids and in routine bacteriological procedures such as isolation, cultivation, and differentiation of microorganisms. Clinical laboratory reagents include antigens for the serology of syphilis, Bacto-Thromboplastin for prothrombin determinations, reagents for liver function tests, Bacto-Sensitivity Disks and Bacto-Concentration Disks to determine the sensitivity of microorganisms to therapeutic agents or the presence of such therapeutic agents in serum, body fluids, dairy products, and other materials. There will also be included reagents recently developed for tissue culture procedures.

**Dodge Steel Co. (Booth 329).** The Dodge Steel Company will show miscellaneous machined and rough cast-

ings, wooden patterns, and photographs of plant processes.

**E. I. du Pont de Nemours & Company, Inc. (Booth 310).** E. I. du Pont will feature a tribute to the technically trained personnel who make up Du Pont's research team. "Ideas formed in a man's mind, which has been trained and sharpened by education and experience, are the basis of successful research. Without the creative brain of the scientist and his associates, all other research investment is worthless. Realizing that these men and women are its greatest research assets, Du Pont painstakingly selects its scientists. Company-wide, Du Pont now has more than 1,900 technically trained men and women in research, including almost 1,000 Ph.D.s. The diversity of their university training, combined with additional years of practical research experience, is tremendously important. For advances in the laboratory are the result of teamwork by cross sections of these research workers. By establishing this balanced research team, a large firm like Du Pont makes one of its most significant contributions to the nation's welfare and progress, both in time of peace and crisis."

**Edmund Scientific Corporation (Booths 411 and 413).** An interesting assortment of war surplus optical items will be displayed by the Edmund Scientific Corporation. A prism exhibit will be shown of such types as right-angle, porro, Amici, Penta, Leman, Rhomboidal, Dove, etc. Various types and sizes of lenses will be available for inspection, as well as binoculars, magnifiers, filters, telescopes, mirrors, bubble sextants, and other optical items.

**Encyclopaedia Britannica, Inc. (Booth 138).** The first Encyclopaedia Britannica was published in 1768. George Washington bought the Third Edition (printed in the U. S.) and liked it so well he urged Alexander Hamilton to buy one, which he did—shortly before Burr killed him. Encyclopaedia Britannica has always been regarded as an educational institution rather than a business venture; therefore, it is fitting that today the University of Chicago owns Encyclopaedia Britannica. Encyclopaedia Britannica will exhibit the new prepublication of the 1951 Encyclopaedia Britannica.

**Ercon Corporation—Carl Zeiss, Jena Products (Booths 132 and 134).** Exclusive American representatives for the entire line of Carl Zeiss Jena Scientific Instruments. The display will include the latest and most modern Zeiss Microscopes such as the *Lumipan* with built-in illuminator, Triple Condenser Turret, Paneratic Condenser System and Phase Contrast Equipment, the new Binocular Stereoscopic Dissecting Microscope *Citoplast*, with novel quintuple magnification changer, and the Zeiss Sliding Micromanipulator, which permits it to operate on cells, bacteria, colloid particles, etc., under the highest magnifications. In addition there will be on exhibit the *Abbe Comparator*, Precision Measuring Instruments, Surface Finish Testers, Astronomical Telescopes, Surveying Instruments, Polarimeters, Refractometers, Photometers, Spectroscopes, Interferometers, Photomicrographic Equipment, Luminescence Microscope, the new revolutionary eyelevel automatic reflex camera *Contax-S*, Prism Binoculars, and many others. Latest developments in the Carl Zeiss Jena Scientific Instrument Line will be discussed, such as the new Interference Comparator, U. V. Spectrograph, U. V. Quartz Optics, Reflecting Optics, new Epi Condenser for incident light, Micro Projectors, and others.

**The R. Y. Ferner Company, Inc. (Booth 431).** As American agents for the English optical manufacturers Cooke, Troughton & Simms, Ltd. of York, the Ferner

Company will exhibit at the Philadelphia meeting some outstanding Cooke products, including the Cooke Universal Polarizing Microscope, the Cooke Student Metallurgical and Polarizing Microscopes, the Cooke Textile Stereoscopic Microscope, Cooke Photomicrographic Equipment, Cooke Quartz Monochromatic Objectives, for use on the Ultra-Violet Microscope. Also exhibited will be routine models of biological and stereoscopic microscopes.

**Folkways Records & Service Corp. (Booth 423).** Folkways Records and Service Corp. specializes in the issuance of records, filmstrips, and other audio-visual material designed for general appeal, as well as meeting educational standards in many fields. Each album, accompanied by a comprehensive manual of background data, is prepared by an accredited specialist. The Ethnic Folkways Library series presents the indigenous music of many countries (recorded on location), with native performers and instruments. The accompanying illustrated manuals provide the social and cultural backgrounds of the music. No people has ever been discovered to be without music of some form. Underscoring this theory, the Ethnic Folkways Library has issued recordings of the music of the American Indians, the Africans, Haiti, Ethiopia, Indonesia, Palestine, India, Cuba, Spain, Peru, the Falashas; music that reflects the personality of a people. The catalogue has been highly praised by experts. The selections range from work and play songs to ceremonial and ritual chants. Each 4-10" nonbreakable record album, accompanied by an illustrated manual of background notes, is designed for general and professional levels (musicologists, anthropologists, sociologists, students of the dance, etc.) of interest.

**General Electric Company (Booth 309).** A plastic operating model of a huge 230-kv impulse breaker will be featured at the General Electric booth. The model breaker has transparent sections and uses varicolored lights to demonstrate how 10 million kva of power can be interrupted in less than five hundredths second.

**The Graf-Apsco Company (Booth 427).** To learn what can be done with old or obsolete microscopes, be sure to visit the exhibit of The Graf-Apsco Company. As America's leading microscope repair house, they are displaying a large assortment of rebuilt microscopes—from the simplest to the most elaborate research models. Other items of interest to scientists, and particularly the teaching profession, are microtomes, dissecting instruments and sets, microslides and cover glasses, magnifiers of all types, etc. Stop at this booth for the answer to your micro repair and rebuilding problems.

**Harford Metal Products, Inc. (Booth 421).** The exhibit will include animal cages for research laboratories made of stainless steel with argon arc method of fabrication; regular type animal cages of galvanized metal and wire; workbenches especially designed for electronic research. The wiring on these benches is equipped with magnetic circuit breakers to the customer's specification. There will be refrigerated boxes for shipment of perishable items, such as human blood or serums, and special items of metal for the use of blood centers. The company has been established in the sheet-metal field for 15 years, during which time it has developed many new items for research work. Building special equipment in large or small quantities is a specialty of the corporation.

**D. C. Heath and Company (Booth 437).** On display will be both secondary-school and college books in science, mathematics, and related subjects. Among the college texts you will want to examine are: Fieser and Fieser's *Organic Chemistry*, Second Edition; Fieser and Fieser's



*Textbook of Organic Chemistry*; McBain's *Colloid Science*, the most recent text in this subject; Boyd's *Genetics and the Races of Man*, an anthropology based on known gene frequencies; Oelke's *Semimicro Qualitative Analysis*, a new book with outstanding features; Mendenhall, Eve, Keys, and Sutton's *College Physics*, Third Edition, featuring a distinctive practical format; Dicken's *A Regional Economic Geography*, chosen as one of the fifty best designed textbooks of 1949; the W. L. Hart *mathematics texts*; Snyder's *The Principles of Heredity* in a new Fourth Edition; Hopkins and Bailar's *General Chemistry for Colleges*, in a new Fourth Edition; Duvall and Hill, and Becker and Hill *texts on marriage and the family*. Among the secondary-school books you will find in this exhibit are: Harris and Henderson's *Foods, Their Nutritive, Economic, and Social Values*, in a new Second Edition, called by some reviewers a miniature encyclopedia on foods; Brown and Schwachtgen's *Physics—The Story of Energy*, distinguished by its clarity of text and new organization; the W. W. Hart *mathematics texts*.

**Heitz & Lightburn—Training Films, Inc. (Booth 210).** Heitz & Lightburn, distributors of Swiss precision photo equipment, will exhibit: *Alpa-Reflex and Alpa-Prism-Reflex*, most complete and versatile 35 mm cameras, especially designed and precision-built for scientific photography. Exclusive Alpa features are: Ground glass focusing *plus* individual rangefinder, complete set of interchangeable lenses from 3.5 to 200 cm (with no parallax problem), continuous focusing from infinity to ultra close-ups (3 times magnification), photomicrography with aid of single adapter ring, lightweight close-up stand for indoor and outdoor photography with adjustable object table and annular illumination. *Rebikoff*, the color temperature meter for perfect balance of blues and reds in color photographs. *Swiss Lux 2*, a lightweight, sturdy pocket exposure meter. *Hilba Color Lux*, an extremely accurate and sensitive exposure meter with exceptional range, for incident, reflected light and greyscale contrasts. *Color slides and stripfilms for scientific and industrial use* produced by Training Films, Inc., an affiliate of Heitz & Lightburn.

**Hercules Powder Company (Booth 433).** Hercules' exhibit at the AAAS Annual Exposition of Science and Industry will feature, in general, the various phases of research entering into the development and production of a new product. The product selected is toxaphene, chlorinated camphene, which was developed by Hercules as a base for insecticides effective against many insect pests, particularly those affecting cotton and forage crops. The exhibit outlines the cooperation required with industry, the Department of Agriculture, and universities in actual field tests before marketing toxaphene.

**Houghton Mifflin Company (Booth 215).** Houghton Mifflin Company will exhibit its extensive list of college texts in the fields of Biology, Chemistry, Economics, Mathematics, Physics, Sociology, Psychology, and General Science. Included with these college texts will be several trade books of general interest to science teachers.

**The Human Resources Research Center (Booth 104).** This exhibit depicts graphically the psychological research being conducted by the U. S. Air Force in the fields of personnel and training. Catching the eye immediately as one looks over the booth is a large teeter-like affair, simulating an apothecary's scale. It is moving slightly, as though just coming to balance. On one end of the scale are three small models of men who are outweighing a total of ten such men on the opposite end. A sign explains: "Raw Manpower vs. Personnel scientific-

ally selected, classified, trained," indicating that fewer men may outclass greater numbers when the few have benefit of psychological research. The rear panel of the booth carries a large map of the USA showing locations of some fifteen operating units of HRRC. Front panels depict the three primary research efforts of the organization: Aptitude Measurement, Training Research, and Proficiency Measurement. Tables at front carry flat displays of research bulletins, photographs, tests, and examinations. Illustrated brochures describing HRRC in detail are available for the visitor.

**Interscience Publishers, Inc. (Booth 429).** All the new and standard books of Interscience will be on display in Booth No. 429, and a number of selected titles will also form a part of the Science Library. An outstanding new publication is the first volume of *The Lipids: Their Chemistry and Biochemistry*, by Harry J. Deuel, Jr. The two most recent volumes of the series on "Technique of Organic Chemistry," will be of interest: *Distillation* (Vol. IV), a comprehensive review by ten collaborating authors, and *Adsorption and Chromatography* (Vol. V), by Harold G. Cassidy. The ambitious undertaking of the "Chemistry of Heterocyclic Compounds" series to review the entire field in about 30 monographs will be represented by the first two volumes published, *The Heterocyclic Derivatives of Phosphorus, Arsenic, Antimony, Bismuth, and Silicon*, by Frederick George Mann, and *Six-Membered Heterocyclic Nitrogen Compounds with Four Condensed Rings*, by C. F. H. Allen, as well as by advance proofs of *Thiophene and its Derivatives*, by Howard D. Hartough. Also in the display: *The Chemistry and Technology of Food and Food Products*, the new and completely revised edition in three volumes of the well-known collaborative work under the editorship of Morris B. Jacobs; *The Pectic Substances*, by Z. I. Kertesz, a complete survey of the field; the two volumes of Alfred Burger's *Medicinal Chemistry*, which cover the chemistry, biochemistry, therapeutic, and pharmacological action of natural and synthetic drugs; the long-awaited *Photosynthesis and Related Processes*, Vol. II, Part I, by E. I. Rabinowitch; the seven volumes published to date of *Encyclopedia of Chemical Technology*; and numerous works in the fields of chemistry, biochemistry, physics, mathematics, etc.

**Jarrell-Ash Company (Booth 414).** The Jarrell-Ash Company will exhibit the new *Jaco Spec-Lab* which is a low-cost, complete unit for spectrochemical analysis. It is intended primarily for use by foundries in specification checking and by educational institutions. Also on exhibit will be the new Jarrell-Ash film- and plate-processing unit designed for uniform development of spectrographic and x-ray plates and films. Of considerable interest to the educational field will be the exhibit of the new Hilger Micro-focus X-ray tube.

**Keystone Plastics Company (Booth 112).** This company will exhibit a complete line of cages, including the Keystone rust-resistant vermin-proof, transparent "Mouse House," on racks specially designed to hold these cages, using a minimum of floor space. Samples of their new disinfectant and sanitizer, "Hytron," for use in sterilizing not only plastic cages but also glassware, metal cages, and other equipment, will be available.

**Koppers Company, Inc. (Booth 131).** Aptly described as the "Industry that Serves All Industry," Koppers Company, Inc., Pittsburgh, Pa., serves business and the public through metallurgical design and construction, and by producing chemicals, plastics, pressure-treated wood, road paving materials, roofing, bituminous coatings, creos-

sote, coke, and allied products. By means of a moving belt that emerges from a replica of a lump of coal, the Koppers exhibit will show models or samples of many products derived from coal. Examples include cosmetics, sulfa drugs, tar roads, moth preventives, plastics, and insect repellents. Since the invention of Koppers chemical recovery coke ovens, entire new industries have sprung up to bring the public benefits of secrets formerly locked up in nature's "black diamonds." The Koppers display, therefore, will tell the story, not of one company, but of the entire coal carbonization industry.

**Lea & Febiger (Booth 120).** Lea & Febiger will welcome your visit to their exhibit. All their latest publications in the fields of bacteriology, biology, horticulture, pathology, physiology, zoology, and many other specialties are included. You will find many books on medicine, dentistry, and pharmacy. Don't miss the new third edition of *Clinical Hematology* by Wintrobe. Make this a must on your list. Ask to see the recently published *Diseases of the Endocrine Glands* by Soffer and the new *Musser-Whol Internal Medicine*. Three fine physiology books that will be well worth your consideration are *Human Physiology* by Starling, *Elements of Human Physiology* by Lucas, and *Physiology in Health and Disease* by Wiggers. Be sure to look over *Pharmacology and Therapeutics* by Grollman. Many other fine books are included for your inspection.

**Leeds & Northrup Company (Booths 404 and 406).** Leeds & Northrup Company will exhibit several working demonstrations of new instruments for research, teaching, and testing. One of these exhibits will consist of manual and automatic equipment for polarographic analysis. The automatic equipment will be the L&N Electro-Chemograph, now offered as a single console complete with Speedomax Recorder. The manual equipment will be a typical student's apparatus, consisting of a Students' Potentiometer, Decade Resistance Box, Galvanometer, and the new Students' Calibrating Unit, which makes the galvanometer direct-reading for the current determinations. Both the manual and the automatic equipment will operate with a Dropping Mercury Electrode Assembly, for a group of typical polarographic determinations. Also on exhibit will be the new L&N pH Indicator, a highly stable a-c operated instrument with both pH and voltage ranges. This indicator will be set up for measurements using standard L&N buffer solutions. A demonstration of the L&N line of D-C Amplifiers will complete the exhibit. The Micromicroamperé Amplifier will be used as a pre-amplifier for a Speedomax Recorder. The combination will record the discharging and parasitic currents of a capacitor, as a demonstration of the extremely minute currents which can be measured by this method. A Microvolt Amplifier will be set up to indicate thermocouple voltages in the microvolt region, showing how small temperature changes can be measured with accuracy.

**E. Leitz, Inc. (Booths 331 and 333).** E. Leitz will exhibit and demonstrate microscopes, photoelectric colorimeters, and other scientific instruments, including the Ortholux research microscope with the newly designed Aristophot arrangement for photomicrographic and photomacrographic accessories for film sizes from 33 mm to 3¼" x 4¼". The Panphot universal camera microscope with combination illumination system which may be adapted for biological, metallurgical and polarized light, either transmitted or reflected, will also be demonstrated. A complete line of Leica camera equipment, including the new Leica bellows focusing device, and various other arrangements, close-up and photomicrography, will also

be shown. In attendance at the Leitz exhibit booth will be Mr. Emil G. Keller, Mr. John F. Lubben, and Mr. Harold H. Zander.

**The Linguaphone Institute (Booth 140).** Scientists the world over, without a knowledge of one another's languages, are at a great disadvantage in effective communication. Yet the need in this field is greater than it is in foreign trade, tourist travel, or even in cultural associations. *Linguaphone* has served scientists and the linguistic needs of scientists consistently for the past 25 years. *Linguaphone* aims to keep its Language Courses up to date. The courses that meet the scientist's needs most are the German and Russian, which have just undergone a complete revision, so that the latest edition of these courses should be most welcome to the progressive scientist who feels that in this multilingual world, he must be at least a bilingual person, if not a multilingual one.

**The Macmillan Company (Booth 401).** The Macmillan Company extends a cordial invitation to the members of the AAAS to visit booth No. 401, where outstanding texts and reference books in the fields of biology, chemistry, and physics are on display. Boyd T. Harris, science editor, together with other members of the College Department, will represent The Macmillan Company at this exhibit.

**Josiah Macy, Jr. Foundation (Booth 130).** The Transactions of the Conferences sponsored by the Josiah Macy, Jr. Foundation will be displayed in order to acquaint interested persons with a new approach in medical literature. These publications are verbatim reports of meetings in which representatives from all professions and specialties relevant to the topic participated. The material published is unobtainable elsewhere and is the most advanced information available to investigators and practicing physicians concerning research progress, new methods and theories. The Transactions offer, as well, interesting insight into the broad problem of communication and integration between disciplines, a question of importance to the advancement of the whole of science. The topics covered by the Transactions are: Adrenal Cortex, Aging, Biological Antioxidants, Blood Clotting, Blood Pressure, Connective Tissues, Cybernetics, Infancy and Childhood, Liver Injury, Metabolic Aspects of Convalescence, Metabolic Interrelations, Nerve Impulse, Problems of Consciousness, Renal Function, Clinical Psychology.

**McGraw-Hill Book Company, Inc. (Booths 201 and 203).** As always the McGraw-Hill Company will exhibit its large list of textbooks and reference works in all fields of science. Among the publications to be featured will be the 1951 edition of Storer's *General Zoology* and such new volumes in the National Nuclear Energy Series as Katz and Rabinowitch's *The Chemistry of Uranium*. Other outstanding new science books will include *The Quantum Theory of Matter*, by John C. Slater, *Principles of Quantum Mechanics*, by W. V. Houston, and *Anatomy of the Chordates*, by C. K. Weichert. Hugh W. Handsfield, science editor, and members of the College Department Staff will be in attendance at the exhibit.

**G. & C. Merriam Company (Booth 415).** Exhibit will display copies of the Merriam-Webster publications listed as follows: *Webster's New International Dictionary*, Second Edition. The unabridged work containing 600,000 entries, including thousands of encyclopedic articles, many of them recording a wealth of information in the field of science. *Webster's New Collegiate Dictionary*. Our largest abridged work, completely up to date—copyright 1951. *Webster's Dictionary of Synonyms*. Listing Synonyms, Antonyms, and Analogous and Contrasted Words, explain-

ing the difference in their shades of meaning and illustrating their use. *Webster's Biographical Dictionary*. Entering 40,000 biographies of noted men and women of all countries, with name pronunciations. *Webster's Geographical Dictionary*. Records information on all the world's important places, with name pronunciations. There will also be shown pamphlet material illustrating and explaining the use of the above publications.

**Miles Laboratories, Inc. (Booth 122).** Miles Laboratories, Inc., is a pharmaceutical manufacturer of products of research for home medication, medical and allied professions, and the pharmaceutical manufacturer. The exhibit of Miles Laboratories will display our newest product, and will trace its development. *Bactine*, an antiseptic, cleanser-deodorant, bactericide, fungicide, and detergent, is the result of years of scientific research, experimentation, and clinical testing. *Bactine* relieves the pain of burns but contains no iodine, mercury, or phenol.

**Monsanto Chemical Company (Booths 318, 320, 322, and 324).** Monsanto will exhibit a series of displays to illustrate company products and the uses made of these products by major industries. The displays will give a broad general picture of Monsanto's service to industry showing the diversity of Monsanto products and their uses. Included in the displays will be Monsanto chemicals and products, applications in the fields of agriculture, aviation, petroleum products, wood-treating, plastics manufacturing, pharmaceuticals, and plywood glues. At the Saturday afternoon part of the Symposium on *Improvement of Soil Structure*, Lecture Room A, University of Pennsylvania School of Medicine, representatives of Monsanto's Research Department will announce a new product development that promises to provide a new chemical tool for agriculture, highway maintenance, erosion control, and home gardening.

**Philip Morris & Co. Ltd., Inc. (Booths 332 and 334).** Physiologic and pharmacologic methods are used for the evaluation of the irritants in cigarette smoke.

**The C. V. Mosby Company (Booth 233).** The C. V. Mosby Company welcomes the opportunity of again displaying its publications at an AAAS convention. A cordial invitation to visit the Mosby booth is extended to all scientists attending this year's meeting. A wide selection of books for teaching and reference purposes will be available for examination. Stop by and let our representatives go over book needs with you.

**National Geographic Society (Booths 204 and 206).** The exhibit of the National Geographic Society will feature the display of a selection of natural color slides by automatic projector. The slides cover National Geographic expeditions and were selected from illustrations by staff photographers of the *National Geographic Magazine*.

**New Brunswick Scientific Company (Booth 425).** *Rotary Action Flask Shaker*: A versatile shaking apparatus built to impart superior performance in general laboratory work where thorough shaking and agitation are required. It is particularly useful in research on the production of antibiotics in deep culture and in all types of fermentation work where vigorous aeration is desired, or where pellicle formation is to be avoided. The flasks are shaken in a rotary motion so that splashing and resultant wetting of the plugs is avoided, thus eliminating the use of complicated aerating systems such as air filters and spargers. This apparatus cuts short the time required to dissolve chemicals, to effect the mixing of liquids, and to bring about reactions that require shaking. Model C operates at a constant speed of 240 oscillations/minute, and Model V with variable speed control has a range of

160-400 oscillations/minute. *Erlenmeyer Flask Clamps*: These clamps are very practical for holding flasks securely when they are to be shaken on an agitator or a shaking apparatus. They are easily installed and come in the following sizes: 50 ml, 125 ml, 250 ml, 500 ml, 1000 ml, and 2000 ml. Clamps are highly resilient, corrosion-resistant, noiseless, and vibration-free in operation.

**Norwich Wire Works, Inc. (Booth 412).** Founded in 1909, the Norwich Wire Works, Inc., of Norwich, N. Y., is one of the pioneer manufacturers of animal cages for research. Long experience in designing cages is invaluable in knowing what to do as well as what not to do in housing animals. Norwich is recognized as the leader in developing new equipment. The problems of the individual laboratory are analyzed and new designs developed if no previous pattern is adequate. Strong welded construction and hot-tip galvanizing are features of the equipment. Included are test-tube racks, portable tables, hand trucks, bins, tanks, and all kinds of baskets.

**Nuclear Instrument & Chemical Corporation (Booth 208).** Nuclear's display will include a complete line of radiation detection and measuring equipment. Specialized instruments will be shown for application in the various fields of science where isotope tracer, inspection, diagnostic, and therapeutic research methods are being used. Special instrument combinations will be demonstrated for use in medical and biological work. The new scintillation counter and other specialized counting techniques will provide a means of demonstrating increased efficiency with already existing equipment. Complete monitoring and health protection instruments will be exhibited, along with instruments designed exclusively for Civil Defense. Technical personnel will be in the booth for discussion of your needs for special labeled chemical compounds, or to consult on your requirements for equipment, laboratory layouts, and counting techniques.

**Nuclear Research Corporation (Booth 435).** Nuclear Research Corporation, 2563 Grays Ferry Ave., Philadelphia, manufacturers of and researchers in nuclear radiation detection equipment, will have the following products on demonstration in their booth: *Regulated High Voltage Supply*, VS-2A, which has been designed as a precision instrument for applications where high voltage-low current power is required. *Radioactivity Demonstration Units*, DU-1A and DU-2A. Inexpensive, lightweight, modern instruments, they are used in demonstrating nuclear radiation processes—i.e., detection of cosmic rays and Alpha, Beta and Gamma particles; and demonstration of the inverse square law of a point source of radiation. *Alpha Scintillation GM Tubes*—thoroughly tested under varying conditions for efficiency in detecting Alpha radiation. The current series of tubes is designed to be compatible with scalers and survey meters of all types now in use. *Geiger-Mueller Tubes* for all radiation detection applications. Their special features include spectroscopic pure fill gases, all-glass construction with special internal construction to minimize spurious counts, long pumping time with thorough outgassing at 400° C, 6 months' shelf life. *Phosphor crystals* for scintillation counters. *Scintillation Probe* with a crystal, RCA No. 5819 Photomultiplier Tube, and all necessary circuitry. Excellent for radiation detection for industry and hospitals.

**Oxford University Press, Inc. (Booth 409).** Oxford University Press cordially invites you to visit the exhibit of its publications. Scientific monographs from the Clarendon Press, Oxford, will be featured with leading reference works and texts in the fields of engineering and

mathematics. Also on display will be Oxford Medical Publications, including some of the latest works in the field of medical research. For their quality of format and editing, and for their contributions to scientific and medical progress, these books have set a high standard of leadership in their fields. Members of the staff of the Oxford University Press will be on hand to answer any questions you may have.

**Philadelphia Electric Company (Booth 408).** The Philadelphia Electric Company will show a shadow box display of a Port of Philadelphia sign, in three dimensions, which will be the central theme of the exhibit. The exhibit will be augmented by a supply of literature and maps for distribution. A representative will be on hand to answer inquiries.

**Philco Corporation (Booths 101, 103, and 105).** Display demonstrates how Philco research and engineering contributed to the advancement of the electronics industry. Various parts of a television chassis are displayed to show how Philco laboratories have achieved superior picture quality and the power to receive television signals at great distances from the broadcasting station. Cross sections of Philco refrigerators and electric ranges show manner in which superior service and dependability are achieved in the finished product. A unique demonstration of the manner in which Philco engineers met the problem of the adverse effects of humidity on performance and fidelity of tone in record players is evidenced by having the record player and its piezoelectric reproducer completely submerged in water while playing records satisfactorily. Background murals depict additional activities in Philco's research and engineering laboratories, where a distinguished corps of scientists and engineers are continuing to make vital contributions to the security, well-being, and progress of the American public, American industry, and the armed forces.

**Philosophical Library (Booth 314).** The Philosophical Library will exhibit a number of its recent scientific publications, among which are: *The New Physics*, by Sir C. V. Raman; *Three Essays*, by P. W. Bridgman; *Geography in the Twentieth Century*, by Griffith Taylor; *Spinoza Dictionary*, by Dagobert D. Runes, editor, with a Foreword by Albert Einstein; *Dictionary of Human Conduct*, by Bertrand Russell; *Internal Ballistics*, by Col. F. R. W. Hunt; *Nuclear Physics*, by Werner Heisenberg.

**Phipps & Bird, Inc. (Booth 118).** Phipps & Bird will feature two new instruments that have been long awaited by pharmacologists. Our new Perfusion Pump, which is used to circulate blood to isolated organisms, is built so that the volume may be varied from  $\frac{1}{2}$  to 50 cc's. Also available will be a selection of set speeds. Another big feature of this pump is the fact that it completely empties itself on each stroke. Following close behind in this dual billing is the new Infusion Pump. This is used for the infusion of drugs or other chemicals and is manufactured so these drugs may be introduced at variable rates. A complete line of kymographs, levers, and other tools of great interest to the biophysicist will also be shown.

**Polaroid Corporation (Booths 304, 306, and 308).** Polaroid One-Minute Camera with its accessories for one-minute photomicroscopy, oscilloscope trace photography, document and photocopying, polarizing filters for visible and infrared and polarizing instruments making use of linearly and circularly polarized light.

**Prentice-Hall, Inc. (Booth 202).** Some of the books on display will be the following new titles and revisions: *Projective Techniques*, by Anderson and Anderson; *Com-*

*parative Psychology*, by Stone; *Mental Hygiene*, 2nd edition, by Carroll; *World Geography*, edited by George Kish; *Chemistry of the Metal Chelate Compounds*, by Martell and Calvin; *Economic Botany*, by Schery; *Structural Carbohydrate Chemistry*, by Percival; *Chemical Thermodynamics*, by Klotz; and *Problems in Physical Chemistry*, by Sillen.

**Proctor & Schwartz Inc. (Booth 226).** Proctor & Schwartz will have an animated display high-lighting research, engineering, and manufacturing facilities.

**Radio Corporation of America (Booths 228, 230, 232, and 234).** Radio Corporation of America will present a comprehensive display of various equipment manufactured for the use of scientists and educators in government, industry, medical institutions and schools. On display will be RCA Scientific Instruments, Audio Visual Equipment, and Industrial Television. Scientific Instruments display will include a presentation of electron microscope and electron diffraction equipment, including a comprehensive shadow box portrayal of electron micrographs and electron diffraction patterns, showing industrial, medical, and metallurgical applications of the instruments. The Audio Visual Display will center around a new 16 mm Recorder-Projector providing the first means of directly recording commentary on musical background magnetically on the edge of 16 mm motion picture film. The working demonstration of this major advance of 16 mm sound will show how easy it is for nonprofessional users to obtain excellent results with a magnetic recording: (1) To record, it is only necessary for the visitor to turn a switch and talk or play music into a plug-in microphone; (2) After the recording is completed, another control may be set for immediate playback; (3) If revisions are needed or if re-recording is desired, an electronic eraser head is brought into operation by another simple control. The RCA Laboratories will demonstrate the latest advances in industrial television for research, teaching, and industrial applications. In one part of its display, Industrial Television Cameras will be focused through regular light and ultraviolet microscopes on living specimens. Movements of microscopic bodies such as paramecia will be projected on large home-type television receivers in magnifications from 4 to 20,000 diameters.

**The Rayoscope Co. (Booth 430).** The improved Rayoscope Microprojector will be demonstrated. Various specimens and phenomena which teachers would like to make visible to an entire class will be strikingly demonstrated on a screen so that large groups can view the projection with ease and clarity. It is now actually possible to project a "Cell Mitosis" as well as other specimens which up to now have been impossible to demonstrate to groups. It will be well worth your while to visit us at the convention.

**Rohm & Haas Company (Booths 305 and 307).** Walnut ribs will separate the exhibit into five or six sections, in each of which will be displayed end-use products such as, in the case of the Leather Department: shoes, traveling bag, gloves, jacket, etc., made of leather with Rohm & Haas Company chemicals. Other fields of application would be textiles, plastics, synthetic resins, A. & S. C., and specialties. In each case end-use products will be displayed for each category.

**The Ronald Press Company (Booth 405).** The Ronald Press Company will present a display of text and reference books. These are largely in the fields of the Biological Sciences, Chemistry, Education, Mathematics, Physics, Sociology, Engineering, and Popular Science. Features will be the new *Embryology of the Viviparous*

*Insects*, by Harold R. Hagan, *Diseases of Cereals and Grasses in North America*, by Roderick Sprague, *The Smut Fungi*, by George W. Fischer, *200 Miles Up*, by J. Gordon Vaeth, *Recovery from Aphasia*, by Joseph M. Wepman, *A Primer for Psychotherapists*, by Kenneth M. Colby, and *Medical Psychology*, by G. K. Yacorzynski. Mr. George W. Farnham, science editor, together with other members of the College Department, will be on hand to represent Ronald Press at this exhibit.

**Sanborn Company (Booth 416).** The Sanborn Company will exhibit and demonstrate the latest models of Sanborn single-, two-, and four-channel Direct-Writing Recording Systems for biophysical and industrial research, and for a wide variety of measurement and recording problems. Company executives and engineers will be available to explain and discuss the many potential applications of these systems, made possible by a choice of interchangeable amplifiers and preamplifiers of A-C, ECG, D-C, Strain Gage, and other types, by selection of paper travel speeds, through permanent recording in true rectangular coordinates, and without the use of ink—and by other features of the Sanborn recorders. Interested personnel in the industrial, biophysical, medical, and other fields are cordially invited to attend.

**W. B. Saunders Company (Booth 302).** You are cordially invited to visit our exhibit, where you will find on display our publications in the fields of the Biological Sciences, Chemistry, Hygiene and Health, and Medicine. These include *Comparative Animal Physiology*, by Prosser, Bishop, Brown, Jahn and Wulff; *Biology: The Human Approach*, by Claude A. Villee; *Functional Anatomy of the Limbs and Back*, by W. Henry Hollinshead; *The Vertebrate Body*, by Alfred S. Romer; *Principles of Animal Ecology*, by Allee, Emerson, O. Park, T. Park, and Schmidt; Anson's *Atlas of Human Anatomy*; the new revised edition of *Human Anatomy and Physiology*, by Millard and King; *College Zoology*, by Hunter and Hunter; *Principles of Organic Chemistry*, by John Leo Abernethy; *Chemistry of Organic Compounds*, by Carl R. Noller; *Textbook of Organic Chemistry*, by Noller; *Quantitative Chemical Analysis*, by Clark, Nash, and Fischer; *A Textbook of Biochemistry*, by Benjamin Harrow; the new revised edition of Dorland's *American Illustrated Medical Dictionary*—and many other titles. Saunders' representatives will be Tyler Buchenau, James B. Finn, Jr., James P. Hughes, Paul K. Schneider, and E. R. Zieber.

**Schering Corporation (Booth 326).** *Medical Vagotomy with Prantal—a new advance in the management of peptic ulcer.* The exhibit will present laboratory and clinical findings on Prantal, (N,N-dimethyl-4-piperidylidene-1,1-diphenylmethane methyl sulfate). Prantal is of considerable promise in the medical management of peptic ulcer showing desirable activity with minimal side effects. This compound has parasympathetic blocking properties which distinguish it from other compounds known to antagonize acetylcholine, such as atropine, methantheline bromide, and others. In animals and in man, dosages of Prantal which reduce gastric motility and secretion have little or no action on the eye, the salivary glands or the small or large intestine. In addition, clinical studies indicate that Prantal does not cause spasm of the esophagus or urinary retention. Other autonomic blocking agents used heretofore in the treatment of peptic ulcer have been limited in their therapeutic value by the high incidence of various side reactions. The pharmacodynamic activity and specificity, as well as evidence of the safety of Prantal, will be presented.

**The Science Library (Booths 207, 209, and 211).** The Science Library is administered by the AAAS as an additional service to publishers of books, both exhibitors and nonexhibitors. It has become an integral part of each year's Annual Exposition of Science and Industry. In the Science Library, books of all publishers participating are *grouped by fields of science*—a convenience both to the visitor who is restricting his inspection of books to a single category, and to the one who wishes to browse. Among the publishers represented in the Science Library are:

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

ADDISON-WESLEY PRESS, INC.  
AMERICAN BOOK COMPANY  
AMERICAN LIBRARY ASSOCIATION  
ANNUAL REVIEWS, INC.  
APPLETON-CENTURY-CROFTS, INC.  
THE BLAKISTON COMPANY  
COLUMBIA UNIVERSITY PRESS  
COMSTOCK PUBLISHING CO., INC.  
CORNELL UNIVERSITY PRESS  
CRANBROOK INSTITUTE OF SCIENCE  
THOMAS Y. CROWELL COMPANY  
CROWN PUBLISHERS  
E. P. DUTTON & Co., INC.  
ELSEVIER PRESS INC.  
EMERSON BOOKS, INC.  
EXPOSITION PRESS INC.  
W. H. FREEMAN AND COMPANY  
HARVARD UNIVERSITY PRESS  
D. C. HEATH AND COMPANY  
HOLIDAY HOUSE, INC.  
HENRY HOLT AND COMPANY, INC.  
INTERSCIENCE PUBLISHERS, INC.  
ISLAND PRESS CO-OPERATIVE, INC.  
LEA & FEBIGER  
J. B. LIPPINCOTT COMPANY  
LONGMANS, GREEN & Co., INC.  
LOTHROP, LEE & SHEPARD  
PITMAN PUBLISHING CORPORATION  
REINHOLD PUBLISHING CORPORATION  
SILVER BURDETT COMPANY  
CHARLES C THOMAS, PUBLISHER  
UNIVERSITY OF ILLINOIS PRESS  
JOHN WILEY & SONS, INC.  
THE YEAR BOOK PUBLISHERS, INC.

**Sharp & Dohme, Inc. (Booths 229 and 231).** The  $\beta$ -phenylethylamine nucleus has been known since the report of Barger and Dale (*J. Physiol.*, 41, 19, [1910]) to be optimal for sympathomimetic activity. Since then the systematic addition of certain biologically active chemical groups has been shown to modify both quantitatively and qualitatively the pharmacodynamic characteristics of the resulting compounds. This exhibit has been designed to illustrate the relationship of chemical structure to the pharmacologic attributes of a number of these agents. On the basis of such studies a single compound has been selected which encompasses in large measure the most desirable characteristics of a sympathomimetic pressor amine, Aramine.

**Socony-Vacuum Oil Company, Inc. (Booths 115 and 117).** Socony-Vacuum will exhibit a glass operating model of a Thermoform Catalytic Cracking unit for manufacturing high octane number gasoline. The operation shows the flow of catalyst and oil (a noninflammable liquid is used for safety) through the unit. A scientific

test instrument for analyzing the mechanical and fuel behavior of automotive engines will be shown. This may include a direct demonstration or a short motion picture of a demonstration test. There will be a scientific test device for investigating lubricants and principles of lubrication, which may include a direct demonstration or a short motion picture of a demonstration test.

**Specialized Instruments Corporation (Booth 217).** Equipment on display: 1. An operating Model L Spinco Preparative Ultracentrifuge—a compact machine designed to concentrate, purify, and classify macromolecules and colloidal materials such as proteins, viruses, enzymes; featuring interchangeable rotors, vacuum chamber, refrigeration, and automatic electronic controls for 40,000-rpm electric drive. 2. New developments in ultracentrifuge rotors—both preparative and analytical types. In addition, data and information will be available covering the Spinco Model E Analytical Ultracentrifuge, as well as the company's newly developed Electrophoresis Instrument.

**Sugar Research Foundation, Inc. (Booth 133).** Sugar Research Foundation booth will feature a display of photosynthesis and the history of sugar through the ages, illustrated teaching aids, strip films, booklets for elementary and secondary school instruction. In addition, special studies on sugar, its products and industrial uses, will be available without charge.

**Arthur H. Thomas Company (Booths 315 and 317).** Arthur H. Thomas Company, Philadelphia, will exhibit in booths 315 and 317 the Boehnke Universal Kymograph, which offers an unusually wide range of speeds with instantaneous stepless regulation, and a variety of accessories, including their Electric Stylus Input Control for recording on electrosensitive paper; several other physiological specialties; Wiley Laboratory Mill with an adapter for delivering directly into a glass jar; Stormer Viscosimeter with Stroboscopic Attachment, which eliminates timing, dial reading, calculations, or interpolations; Spring-Grip Micro Clamps; Clamps for ball-and-socket glass joints; new models of International Electric Centrifuges, Bausch & Lomb Microscopes (Dynoptic Laboratories), new Beckman Model N pH Meter, Beckman Titrator, etc.

**W. M. Welch Scientific Company (Booths 301 and 303).** Display will include:

Two new devices to teach the structure of atoms, and the arrangement of component particles, one static, the other dynamic; the Densichron for accurate and stable measurement of light intensity; a demonstration Triode Tube making variation of electron flow visible by fluorescence; kodachrome slides of atomic properties of each atom in the periodic table; the Bainbridge design of a visual method of measuring  $e/m$ ; a new design of Singerman Color Mixer; silent Duo-Seal Vacuum Pumps of outstanding ultimate vacuum and various free air capacities; a new low price spectrometer permitting very rapid

work; demonstration and student electrical meters; Physiology, Health and Hygiene Charts especially suitable for nurses' training courses; Physics, Chemistry, Biology, and Aeronautics Charts; Biological Models and Preserved Material; and accessory instruments including rheostats, resistance boxes, and balances and calipers.

**Westinghouse Electric Corporation (At left of Lounge Area).** The Westinghouse Electric Corporation display will feature a "theme center" exhibit especially designed to tell the story of the company's research, engineering, and production. Measuring 13 feet in height and 6 feet in diameter, the exhibit consists of a revolving base, a central illuminated post, and a symbolic atomic nucleus mounted on top. Spiral-wound around the central post are six illuminated plaques, each of which recounts various phases of Westinghouse achievements in research, engineering, and production. The wall display consists of four large plaques which illustrate the Westinghouse program for the advancement of science and science education. The first tells the story of the company's advertising program in educational and scientific magazines aimed at the recruitment of young people into science fields. The second illustrates how Westinghouse recruits and trains graduate student engineers. The story of the Science Talent Search, company-sponsored quest for talented high-school students, is told in the third plaque. The fourth describes the numerous teaching aids produced by the company's School Service Department and distributed to elementary and high schools all over the nation.

**Henry Wild Surveying Instruments Supply Co. of America, Inc. (Booth 432).** *The Wild T-2 Universal Theodolite* on display embodies the latest achievements in applied optics which greatly increase speed and accuracy in surveying. This instrument is also frequently used for precise angular measurements in industry. The image of the graduations etched on the glass circles is carried to the reading microscope alongside the telescope eyepiece through an ingenious optical system, including an optical micrometer. An optical plummet greatly facilitates centering of the theodolite over a bench mark, particularly on windy days. The new *Wild Microscopes* are justly renowned for the following modern features, apart from their outstanding optical performance: convenience and comfort of operation achieved by rational arrangements of controls (low-placed coarse and fine motions); horizontal stage; revolving, inclined tube; great versatility. Two basic models, the M-9 and the M-10, come with a variety of stages and accessories, including phase contrast equipment and a photomicrographic camera, which has a reflex system for critical focusing. The new *Fluotar* Objectives give outstanding brilliance over the entire field and have a high resolving power. Detailed information on Wild Aerial Cameras, Stereo-Autographs, Optical Laboratory Instruments, and Drafting Instruments furnished upon request.

