Preview of the 120th Meeting, AAAS, Boston December 26-31, 1953

FROM advance registrations and Boston hotel reservation data, it is already evident that the 120th meeting of the American Association for the Advancement of Science will be both diversified and well attended—in the latter, quite possibly second only to the record-breaking New York meeting of 1949. Not only will all parts of the continent be represented, but a larger than usual number of distinguished foreign scientists will participate. A particularly fortunate occasion will be the address of A. V. Hill, recent past president of the British Association for the Advancement of Science, jointly sponsored by the AAAS and the Society of the Sigma Xi.

In the scope and quality of the programs, in the business to be transacted, and in the demonstrated concern for the state of science and of the nation, this seventh Boston meeting will be one of the most significant of the annual meetings of the AAAS, now in its 106th year of service to science, to scientists, and to society. No principal field of science will be unrepresented. There will be both short papers and specialized symposia in the major sciences and there will be the important interdisciplinary programs, so characteristic of AAAS meetings, which uniquely bring together scientists of diverse specialties. Fundamental matters in education and in society will also be considered. The theme of the 120th Meeting is "Scientific Resources for Freedom" and, appropriately, many of the symposia and one of the conferences will be devoted to the current status of scientific manpower, materials, and methods.

An inspection of the General Program-Directory, which is being sent advance registrants by first class mail at this time, shows that the 120th meeting of the Association will combine many traditional aspects and will also have several new features. Included are:

1. Contributed Papers. Among the 63 participating organizations, the national meetings of such societies as the American Meteorological Society, the American Society of Human Genetics, the American Society of Zoologists, the Genetics Society of America, and the Society of Systematic Zoology—and the regional meetings of such organizations as the American Geophysical Union, the American Industrial Hygiene Association, the Society for the Study of Evolution, and the Society of Exploration Geophysicists—ensure a considerable number of sessions for short reports of current research. In addition, 8 AAAS sections (C-Chemistry, E-Geology and Geography, G-Botanical Sciences, H-Anthropology, I-Psychology, L-History and Philosophy of Science, Np-Pharmacy, and Q-Education) will have sessions for contributed papers.

2. Symposia. The 2 general symposia, "Species Which Feed Mankind" and "The Sea Frontier," some 41 sectional symposia, with a total of 65 sessions, and 12 societal symposia were outlined in SCIENCE, **118**, 524. Two more in the societal category are "Science and the Public," sponsored by the National Association of Science Writers, and "Identification of the Dead," arranged by Richard Ford for the Academy of Forensic Sciences.

3. Vice Presidential Addresses. With four exceptions (K, M, O, P) the remaining sections of the Association have arranged vice presidential addresses by current or recent vice presidents for their 12 sections.

4. Conferences. There are 3 recurrent conferences at anual meetings of the Association. The Academy Conference, now representing 42 academies of science affiliated with the AAAS, the Conference on Scientific Editorial Problems II, and the Conference on Scientific Manpower III will continue with their consideration of the problems of their respective areas.

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

I. Sunday evening, Dec. 27, Ballroom, Hotel Statler; 8:00 p.m. American Association for the Advancement of Science and the Society of the Sigma Xi.

Speaker: A. V. HILL, Foulerton Research Professor of the Royal Society, University College, London, London, England; past president, British Association for the Advancement of Science.

Subject: The Design and Mechanism of Muscle (Illustrated).

DETLEV W. BRONK, president, Rockefeller Institute for Medical Research, and chairman of the Board of Directors of the Association; and LEWIS J. STADLER, professor of field crops, University of Missouri, president of the Society, will serve as cochairmen.

II. Sunday evening, Dec. 27, Grand Hall, Mechanics Building; 8:30 p.m. National Geographic Society.

Speaker: LUIS MARDEN, member, Foreign Editorial Staff, National Geographic Society.

Subject: Sicily, the Forgotten Island (Illustrated).

MEREDITH F. BURRILL, vice president for AAAS Section E, will preside.

III. Monday evening, Dec. 28, Ballroom, Hotel Statler; 8:00 p.m. AAAS Presidential Address.

Speaker: DETLEV W. BRONK, president, Rockefeller Institute for Medical Research, and retiring president of the Association.

Subject: The Role of Scientists in the Furtherance of Science.

EDWARD U. CONDON, director of research, Corning Glass Works, and president of the Association, will preside.

Preceding the address, EARL P. STEVENSON, president, Arthur D. Little, Inc., and general chairman, seventh Boston meeting, will speak briefly.

Following the address there will be an informal AAAS Presidential Reception in the adjacent Ballroom Assembly. All registrants and members of local committees are cordially invited to attend.

IV. Tuesday evening, Dec. 29, Ballroom, Hotel Statler; 8:00 p.m. Scientific Research Society of America.

JOSEPH W. BARKER, Research Corporation, president of the Society will preside.

Speaker: DAVID B. STEINMAN, consulting engineer, New York, New York.

Subject: Suspension Bridges—The Aerodynamic Problem and Its Solution (Illustrated).

V. Wednesday evening, Dec. 30, Georgian Room, Hotel Statler; 8:30 p.m. United Chapters of Phi Beta Kappa.

Speaker: LEONARD CARMICHAEL, secretary, Smithsonian Institution.

Subject: Science and Social Conservatism.

KIRTLEY F. MATHER, professor of geology, Harvard University, will preside. WARREN WEAVER, president elect, will represent the Association.

6. The Scientist in American Society. Early in the year, a committee of Section K and the AAAS Symposium Committee, without knowledge of each other's plans, both decided that there should be a program on some of the social and political problems confronting American scientists at the present time. The following 2 sessions, combined by mutual consent, are sponsored by the Association as a whole:

Sunday Afternoon, December 27

2:30 p.m.; Talbot Hall, Mechanics Building; *Symposium: The Scientist in American Society, Part I: Freedom for Scientific Inquiry.* Arranged by a committee of Section K-Social and Economic Sciences, CONRAD TAEUBER, assistant director, Bureau of the Census, secretary.

DETLEV W. BRONK, *presiding*

1. The Beliefs and Expectations of the Public. CLYDE W. HART, HERBERT HYMAN, PAUL B. SHEATSLEY, and SHIRLEY A. STAR, National Opinion Research Center, Chicago, Ill.
2. The Social Psychology of Political Loyalty in Liberal and Totalitarian Societies. RAYMOND A. BAUER, lecturer on social psychology and research associate, Russian Research Center, Harvard University.

Tuesday Evening, December 29

8:00 p.m.; Paul Revere Hall, Mechanics Building; *Symposium: The Scientist in American Society, Part II.* Arranged by a subcommittee of the AAAS Symposium Committee: CHARLES D. CORYELL, professor of chemistry, Massachusetts Institute of Technology, chairman, P. M. MORSE, and V. F. WEISSKOPF, professors of physics, Massachusetts Institute of Technology, and BART J. BOK, associate director, Harvard Observatory.

EDWARD U. CONDON, *presiding*

1. The Need for and the Production of Scientists. HAROLD C. UREY, distinguished service professor of chemistry, University of Chicago.
2. Scientists and Other Citizens. GERARD PIEL, publisher, *The Scientific American.*
3. The Legal Basis for Intellectual Freedom. MARK DE WOLFE HOWE, professor of law, Harvard University.
4. Scientists and Political Action. EDWIN C. KEMBLE, professor of physics, Harvard University.
5. Discussion, led by EDWARD U. CONDON, director of research, Corning Glass Works.

7. AAAS Business Sessions:

The *Board of Directors* of the Association will meet for dinner and a business session in the administrative secretary's suite at the Hotel Statler at 8:00 P.M. on Saturday, Dec. 26. Dates and hours of subsequent sessions of the Board of Directors during the meeting will be decided at this first session.

The *Council* of the Association will meet Sunday afternoon, Dec. 27, at 4:00 P.M. in Parlor A, Hotel Statler. A second session of the Council is scheduled for Wednesday morning, Dec. 30, at 9:00 A.M. in the same room. 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 agenda prepared) usually are first brought before the Board of Directors through the administrative secretary. During the meeting, communications for the Board of Directors should be submitted in writing and left at the Hotel Statler mail desk, addressed to Dr. Detlev W. Bronk.

8. AAAS Science Theatre Programs:

The AAAS Science Theatre, a permanent feature of the Association's annual meeting, presents showings of the latest domestic and foreign scientific films—nearly all with sound—throughout the meeting period. Please note, in the following schedule, that programs are both repeated and transposed to increase the opportunities for those attending the sessions of the 120th meeting 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.

The AAAS Science Theatre is on the second floor of the Mechanics Building, in a room which seats 225 comfortably. The Science Theatre is reached by passing through a portion of the exhibit area of the Annual Exposition of Science and Industry and ascending the first stairs on the left.

The Science Theatre is a feature for the pleasure and information of all registrants attending the annual meeting; it is deemed well worth the considerable cost of projection. It cannot be for the casual passerby; thus **admission is restricted to those who wear the AAAS convention badge,** or who show an Association registration receipt.

Hours

Sun.,	Dec. 27	2:00 P.M.–6:00 P.M.
Mon.,	Dec. 28	9:00 A.M.–1:00 P.M.; 2:00 P.M.–6:00 P.M.
Tues.,	Dec. 29	9:00 A.M.–1:00 P.M.; 2:00 P.M.–6:00 P.M.
Wed.,	Dec. 30	8:00 A.M.–noon; noon–4:00 P.M.

PROGRAM 1

Sunday Afternoon, Dec. 27, 2:00 p.m.–6:00 p.m.

1. CHEMICAL BRUSH CONTROL. American Museum of Natural History. Color. Sound. 23 min.
2. DEMONSTRATIONS IN PERCEPTION. United States Navy. Black-and-white. Sound. 30 min.
3. DECISION FOR CHEMISTRY. Monsanto Chemical Company. Black-and-white. Sound. 35 min.
4. LOCOMOTION OF SNAKES. New York Zoological Society. Color. Sound. 11 min.
5. GENETICS AND BEHAVIOR. Joseph J. Antonitis and J. P. Scott. Color. Silent. 16 min.
6. RADIOISOTOPES: THEIR APPLICATIONS TO HUMANS. Medical Film Guild, Ltd. Color. Sound. 32 min.
7. THE CHAIN OF LIFE. Pictura Films Corporation. Color. Sound. 11 min.
8. PROMINENCE ACTIVITY. Sacramento Peak Station of Harvard College Observatory, Sunspot, N. M. Black-and-white. Silent. 15 min.
9. LIVES OF THEIR OWN. Pictura Films Corporation. Color. Sound. 11 min.
10. MAN TO MAN. Mental Health Film Board. Black-and-white. Sound. 30 min.
11. BETTER AND SAFER HIGHWAYS. The Firestone Tire and Rubber Company. Black-and-white. Sound. 7 min.

PROGRAM 2

Monday Morning, Dec. 28, 9:00 a.m.–1:00 p.m.

1. WARNING SHADOW. National Cancer Institute and American Cancer Society. Color. Sound. 21 min.
2. LEONARDO DA VINCI. Pictura Films Corporation. Color. Sound. 68 min.
3. ANTARCTIC VIGIL. Australian News and Information Bureau. Color. Sound. 10 min.
4. SEE HOW THEY SWIM. Pictura Films Corporation. Color. Sound. 11 min.
5. TARGET NEVADA. Department of Defense. Color. Sound. 14 min.
6. WHICH FATE. National Society for Medical Research. Color. Sound. 28 min.
7. WATERS OF COWEETA. Forest Service, U.S.D.A. Color. Sound. 20 min.
8. WHITE SPLENDOR. Pictura Films Corporation. Color. Sound. 11 min.
9. HIGH QUALITY SPICULES AND CHROMOSPHERE. Sacramento Peak Station of Harvard College Observatory, Sunspot, N. M. Black-and-white. Silent. 15 min.
10. PROJECT TINKERTOY. National Bureau of Standards. Black-and-white. Sound. 27 min.

PROGRAM 3

Monday Afternoon, Dec. 28, 2:00 p.m.–6:00 p.m.

1. THIS IS MAGNESIUM. Bureau of Mines. Black-and-white. Sound. 15 min.
2. AUTONOMIC NERVOUS SYSTEM, PARTS III AND IV. J. E. Markee and R. F. Becker, Duke University. Color. Sound. 42 min.
3. SEE HOW THEY FLY. Pictura Films Corporation. Color. Sound. 11 min.
4. OAK WILT. National Oak Wilt Research Committee. Color. Sound. 22 min.
5. VOICES UNDER THE SEA. British Information Services. Black-and-white. Sound. 19 min.
6. THE EFFECT OF ELECTRO-CONVULSIVE SHOCK ON "CONDITIONED ANXIETY." H. F. Hunt and J. V. Brady. Color. Silent. 14 min.
7. BIRTH OF AN OIL FIELD. Shell Oil Company. Color. Sound. 11 min.
8. KING OF THE RIVER. Pictura Films Corporation. Color. Sound. 11 min.
9. LIFE STORY OF A WATER MOLD. Arthur T. Brice-Phase Films. Black-and-white. Sound. 11 min.
10. "A" IS FOR ATOM. General Electric Company. Color. Sound. 16 min.
11. NEW FRONTIERS IN SPACE. McGraw-Hill Book Co., Text-Film Dept. Black-and-white. Sound. 25 min.

PROGRAM 4

Tuesday Morning, Dec. 29, 9:00 a.m.–1:00 p.m.
Same as **Program 1.**

PROGRAM 5

Tuesday Afternoon, Dec. 29, 2:00 p.m.–6:00 p.m.
Same as **Program 2.**

PROGRAM 6

Wednesday Morning, Dec. 30, 8:00 a.m.–noon.
Same as **Program 3.**

PROGRAM 7

Wednesday Afternoon, Dec. 30, noon–4:00 p.m.

1. LIVING WATER SERIES, PART I: NATURE'S PLAN. Conservation Foundation. Color. Sound. 30 min.
2. RADIOISOTOPES, PART XII: AGRICULTURAL RESEARCH. Department of the Army. Black-and-white. Sound. 40 min.
3. THE SEA LAMPREY. Fish and Wildlife Service. Color. Sound. 13 min.
4. BATTLE OF THE BEETLES. Forest Service, U.S.D.A. Color. Sound. 16 min.
5. SAND AND FLAME. General Motors Corporation. Black-and-white. Sound. 20 min.
6. FLYING DOCTOR. Australian News and Information Bureau. Black-and-white. Sound. 11 min.
7. THE MECHANICAL INTEREST AND ABILITY OF A HOME-RAISED CHIMPANZEE. Keith J. Hayes and Catherine Hayes, Yerkes Laboratories of Primate Biology. Black-and-white. Silent. 60 min.
8. THE QUESTING MIND. General Motors Corporation. Color. Sound. 20 min.
9. WOODCOCK. Fish and Wildlife Service. Color. Sound. 14 min.

BOSTON MEETING INFORMATION

Hotel Headquarters

The Hotel Statler is the official headquarters of the AAAS; it is where the Council of the Association will meet and where other business sessions will be held. The Press Room, for receipt of authors' abstracts and the only source of press releases, is in Parlor D-E on the mezzanine floor, one flight above the lobby.

The Main Registration-Information Center, the Visible Directory of Registrants, the AAAS Office, the AAAS Science Theatre, and the Annual Exposition of Science and Industry are all in Mechanics Building, 111 Huntington Avenue, near Copley Square.

Downtown Zone

Statler: (1300 rooms) Park Square	AAAS; Press; AAAS Sections C, F, I, Nm, Nd, and Np; Alpha Chi Sigma; American Society of Zoologists, Herpetologists League, Massachusetts Zoological Society, Society for the Study of Evolution, and Society of Systematic Zoology; Alpha Epsilon Delta, American Academy of Forensic Sciences, American Association of Hospital Consultants, American Institute of Nutrition, and American Psychiatric Association; International Association for Dental Research, North American Division; American Association of Colleges of Pharmacy, American College of Apothecaries, American Drug Manufacturers Association, American Pharmaceutical Association, American Pharmaceutical Manufacturers Association, and American Society of Hospital Pharmacists; American Book Publishers Council, American Textbook Publishers Institute, Conference on Scientific Editorial Problems, Honor Society of Phi Kappa Phi, National Association of Science Writers, Scientific Research Society of America, Society of the Sigma Xi, and United Chapters of Phi Beta Kappa.
Bradford: (400 rooms) 275 Tremont St.	Academy Conference; AAAS Cooperative Committee on the Teaching of Science and Mathematics; AAAS Section Q; National Speleological Society; American Nature Study Society; National Association of Biology

	Teachers, National Science Teachers Association, and American Educational Research Association.
Touraine: (200 rooms) 62 Boylston St.	
Parker House: (700 rooms) 60 School St.	

Copley Square Zone

Sheraton Plaza: (500 rooms) Copley Square	AAAS Sections G, H, L, and O; American Eugenics Society, American Society of Human Genetics, American Society of Naturalists, Beta Beta Beta, Ecological Society of America, Genetics Society of America; American Society of Plant Physiologists, New England Section; History of Science Society, Institute for the Unity of Science, Philosophy of Science Association; American Academy of Arts and Sciences.
Copley Square: (124 rooms) 47 Huntington Ave.	
Lenox: (175 rooms) 61 Exeter St.	
Vendome: (300 rooms) 160 Commonwealth Ave.	

Back Bay Zone

Somerset: (500 rooms) 400 Commonwealth Ave.	AAAS Sections A, B, D, E, K, M, and P; American Meteorological Society and Sigma Pi Sigma; Association of American Geographers, Geological Society of America, National Geographic Society, and Society of Exploration Geophysicists; Committee for Social Physics, National Academy of Economics and Political Science, Pi Gamma Mu, and Society for the Advancement of Criminology; Engineering Manpower Commission; American Industrial Hygiene Association; American Geophysical Union, Committee of New England, Conference on Scientific Manpower, National Research Council, National Science Foundation, and Scientific Manpower Comission.
Kenmore: (400 rooms 490 Commonwealth Ave.	

Registration

Main Registration-Information Center. The Main Registration-Information Center is located in the Mechanics Building, 111 Huntington Avenue, the entrance to which is the door nearest Copley Square. It will be open daily, Saturday, Dec. 26, through Thursday, Dec. 31, 8 A.M. to 6 P.M., except on Sunday, Dec. 27, when it is open until 9 P.M., and Tuesday evening, Dec. 29, when it will remain open till 11 P.M. to accommodate those nonregistrants who wish to attend the Biologists' Smoker.

Badges and General Programs may also be obtained at the supplementary registration desks, but the *Main Registration* is the only place to receive a map of the city, guide books, and other complimentary literature. *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 120th meeting, there are four supplementary registration desks as follows:

Hotel Statler		
	Dec. 26	Noon–9 P.M.
	Dec. 27	9 A.M.–9 P.M.
	Dec. 28	8 A.M.–8 P.M.
	Dec. 29	8 A.M.–8 P.M.
Hotel Sheraton Plaza		
	Dec. 26	4 P.M.–9 P.M.
	Dec. 27	9 A.M.–9 P.M.
	Dec. 28	8 A.M.–8 P.M.
	Dec. 29	8 A.M.–Noon
Hotel Bradford		
	Dec. 26	1 P.M.–9 P.M.
	Dec. 27	9 A.M.–9 P.M.
	Dec. 28	8 A.M.–8 P.M.
Hotel Somerset		
	Dec. 26	1 P.M.–9 P.M.
	Dec. 27	9 A.M.–9 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 convention badge and with his registration card posted in the Visible Directory, he has become a definite participant in the 120th meeting. As a registrant, he may visit the AAAS Science Theatre repeatedly and enjoy refreshments and tobacco at the Biologists' Smoker.

The AAAS registration fee for all persons is $2.50. Each registrant receives a receipt, a convention badge, and the General Program-Directory, the only publication with the programs of all 18 AAAS Sections and of the 63 participating organizations. Any person who purchased an advance copy of the General Program-Directory but did not register in advance and who then attends the Meeting has agreed to complete his registration and is expected to do so, at *the Main Registration only*, after which he receives his convention badge and the privileges that go with it.

It is essential that each person who attends the Meeting support it by paying the registration fee of $2.50, which, intentionally, has been kept at a minimum. When the costs of the program and badge are deducted, the net contribution toward general expenses is less than one dollar per registrant.

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 120th convention of the Association. The badge should be worn throughout because: (1) it reminds others to register; (2) it is needed for admission to 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 much-consulted Visible Directory of Registrants, for the maximum convenience of all, is located between the Main Registration and the Annual Exposition of Science and Industry. The hours it will be open correspond exactly with the hours that the Main Registration is open—daily, 8 A.M. to 6 P.M.,

except Sunday and Tuesday evenings, when it is open 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 *competely* alphabetized and typed as 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. Registrants will find the Visible Directory invaluable in determining the convention addresses of friends attending.

Mail, Telegrams, and Messages. Mail and telegrams addressed in care of the AAAS will be held at the AAAS Office in Mechanics Building. Every effort will be made to notify addressees listed in the Visible Directory but the Association assumes no responsibility for the delivery of mail or of telegrams.

Telephone and personal messages will be filed alphabetically in the AAAS Office and the names for whom they are intended will be posted on a bulletin board.

Society Meal Function Tickets. Tickets to the dinners or luncheons of any participating society are obtainable only from representatives of that society, usually during preceding sessions of that society. *A list of all meal functions will be printed in the General Program Directory.*

Mechanics Building

The large red brick Mechanics Building, owned and operated by the Massachusetts Charitable Mechanic Association, is well known to New Englanders and to those who have met in Boston because it has long been the site of all large conventions and expositions. Located at 111 Huntington Avenue, two blocks west of Copley Square, it is also relatively close to the downtown hotels and those of Back Bay. **Only one entrance will be used, the one nearest Copley Square,** at the east end of the building. Immediately inside this entrance is the Main Registration-Information Center and, next, in order, the Visible Directory of Registrants and the Exposition. The session rooms and the Science Theatre on the second floor are reached by passing *halfway* through the exhibit area and ascending the stairs on the left. Session rooms on the basement level are reached by passing through the *entire* exhibit area and descending stairs on the left.

Detailed Location of Rooms and Features in Mechanics Building

Feature	*Location*
AAAS Office	Main floor, just inside of entrance.
Biologists' Smoker	Main floor, Grand Hall.
Exposition	Main floor, through Visible Directory.
Luncheon Facilities	Main floor, through Exposition.
Main Registration-Information Center	Main floor, just inside entrance.
New Member Service	Main floor, booth in Exposition.
Science Theatre	Second floor, use stairs on left.
Visible Directory of Registrants	Main floor, past Main Registration.

Session Rooms	*Location*
Grand Hall	Main floor, through Exposition
Paul Revere Hall	Second floor
Talbot Hall	Second floor
Room A	Second floor
Room B	Second floor
Room C	Basement floor, under exhibits, southeast corner.
Room D	Basement floor, under exhibits, northwest corner.
Room E	Basement floor, under Grand Hall, south wall.
Room F	Basement floor, under Grand Hall, north wall.

Local Travel Directions

In general, taxis are recommended. Boston taxis are convenient and the fares are moderate in price, particularly when three or four persons who are together ride for one fare.

Between the Copley Square Hotels and Mechanics Building:

Since the Sheraton Plaza, Copley Square, and Lenox hotels are but two or three blocks from the entrance at the east end of Mechanics Building, and the Vendome not much further, normally, no transportation of any sort is required.

From the Downtown Hotels to Mechanics Building:

Parker House—Enter Park Street subway station (at corner of Boston Common, one block away); take *westbound* underground trolley marked HEATH STREET, ARBORWAY, or HUNTINGTON AVENUE; pass through stations, BOYLSTON, ARLINGTON, COPLEY; get off at MECHANICS.

Bradford and Touraine—Enter Boylston Street subway station (at intersection with Tremont St.); take same line to MECHANICS.

Statler—Enter Arlington Street subway station (½ block north of hotel); take same line to MECHANICS.

To Return to the Downtown Hotels:

Reverse the route described, via any *eastbound* car.

From the Back Bay Hotels to Mechanics Building:

Kenmore Hotel—Enter Kenmore subway station and take any *eastbound* underground trolley through MASSACHUSETTS and COPLEY to ARLINGTON; transfer via stairway to *westbound* underground trolley marked HEATH STREET, ARBORWAY, or HUNTINGTON AVENUE; pass through COPLEY to MECHANICS.

Somerset Hotel—Same as for Kenmore Hotel but enter subway at MASSACHUSETTS.

To Return to the Back Bay Hotels from Mechanics:

Take any *eastbound* car to ARLINGTON cross to *westbound* track by stairway, take any car marked COMMONWEALTH AVENUE, LAKE STREET, or BOSTON COLLEGE; get off at MASSACHUSETTS for Somerset or KENMORE for Kenmore Hotel.

Points of Interest

At this meeting, there will be no formal tours sponsored by the AAAS as a whole, although certain sections and participating societies have planned various tours and a field trip. It is anticipated, however, that a number of those attending this seventh Boston meeting will wish to visit one or more of the museums, educational institutions, or other points of interest for which this metropolis, more than three centuries in age, is justly famous.

These landmarks and historic shrines are too numerous to describe here in detail. Several booklets will be distributed to all registrants at the Main Registration-Information Center in the Mechanics Building. Advance registrants should call for their copies. The principal points of interest include:

Historic Landmarks

Boston Common
Boston Massacre site ..... State and Congress Streets
Boston Tea Party site ..... Atlantic Avenue and Pearl Street
Bunker Hill Monument ..... Charlestown
Concord Bridge and Minute Man Statue ..... Concord
Faneuil Hall ..... Faneuil Hall Square
Frigate "Constitution" ..... Navy Yard, Charlestown
Granary Burying Ground and Park Street Church
Tremont and Park Streets
House of Seven Gables ..... Salem
Kings Chapel and Burying Ground
Tremont and School Streets
Longfellow House ..... 105 Brattle Street, Cambridge
Lowell House ..... Elmwood Avenue, Cambridge
Old North Church ..... 187 Salem Street
Old South Meeting House
Washington and Milk Streets
Old State House ..... Washington and State Streets
Paul Revere House ..... 19 North Square
State House ..... Beacon Hill
Wayside Inn and Old Mill ..... Sudbury

Museums, Gardens, and Libraries

American Academy of Arts and Sciences
28 Newbury Street
Arnold Arboretum ..... Jamaica Plain
Boston Public Library ..... Copley Square
Botanical Museum, Harvard (Ware Collection of Blaschka Glass Models) ..... Cambridge
Fogg Art Museum, Harvard ..... Cambridge
Franklin Park Zoo and Botanical Gardens ..... Dorchester
Gray Herbarium, Harvard
Garden and Linnaean Streets, Cambridge
Horticultural Hall, Massachusetts Horticultural Society
Huntington and Massachusetts Avenues
Isabella Stewart Gardner Museum ..... Fenway Court
Massachusetts Historical Society
Boylston Street and The Fenway
Massachusetts State Library ..... State House, Beacon Hill
Museum of Comparative Zoology, Harvard ..... Cambridge
Museum of Fine Arts
Huntington Avenue and The Fenway
Museum of Science (and Planetarium)
Science Park, near North Station
Peabody Museum of Archaeology and Ethnology, Harvard ..... Cambridge

Educational Institutions

Boston College ..... Chestnut Hill, Newton
Boston University ..... Commonwealth Avenue
Harvard University ..... Cambridge
Harvard University Medical and Dental Schools
Longwood Avenue, off Huntington Avenue
Massachusetts College of Pharmacy
179 Longwood Avenue
Massachusetts Institute of Technology ..... Cambridge
New England Conservatory of Music
294 Huntington Avenue
Northeastern University ..... 360 Huntington Avenue
Radcliffe College ..... Cambridge
Simmons College ..... 300 The Fenway
Tufts College ..... Medford
Tufts College Medical and Dental School
136 Harrison Avenue
Wellesley College ..... Wellesley

AAAS Public Information Service

Each person who will deliver an address or present a paper at the Boston meeting is requested to provide the Association's Public Information Service with 100 copies of a nontechnical abstract of his paper. One hundred copies of *complete* manuscripts are also required of papers presented by: (1) officers of the Association; (2) officers and invited speakers who appear on the programs of the participating societies; and (3) authors whose papers are particularly newsworthy. Most authors already have recognized the necessity of this procedure and have sent their material to the Association's director of public information, Sidney S. Negus, Medical College of Virginia, Richmond. If you are an author of an address or a paper and have not done this, please send to Dr. Negus, *to arrive in Richmond on or before Dec. 15th,* 100 copies of your nontechnical abstract and 100 copies of your full paper (or significant portions of it, if it is unusually long). If it is impossible for you to send this material to Richmond to arrive by Dec. 15 (*and mails are much slower in the pre-Christmas period*), then mail all of your material to Dr. Negus at the Hotel Statler, Boston, or deliver it to him in person in the AAAS Press Room, Parlor D-E, mezzanine, Hotel Statler, before or during the convention. Please be sure, as an aid to the Association's Public Information Service, to send copies of your paper to your local newspapers with the time indicated when it is to be presented in Boston.

The necessity for the general public to be kept informed of the results of the scientific research which it supports, directly and indirectly, is quite evident. Organized science and the individual scientist must have the understanding and support of all. It is, of course, equally important that the advances of science be publicized with accuracy and clarity without sensationalism. Progress in this direction in recent years has been most gratifying thanks largely to members of the National Association of Science Writers, other accredited science reporters, managing editors of American newspapers, and program managers of radio and television stations.

It is in the interest of accuracy and completeness that science writers frequently wish to discuss various research results with investigators. If you are asked to cooperate in this respect or to participate in a press conference, please do so, not only for your own protection but for the benefit of science in general. Scores of science writers will be covering this meeting. News stories filed by the representatives of all the wire services will be published and broadcast throughout the entire civilized world. At no other scientific meeting are the facilities for the dissemination of the most recent findings in all branches of science so complete as they are at the great diversified meetings of the AAAS.

This year, not only is the Association fortunate in the continued services of Dr. Negus, chairman of the department of biochemistry, Medical College of Virginia, Richmond, and past president of the Virginia Academy of Science, but also in its local subcommittee on public information, headed by Wallace Dickson, director of public relations, The New England Council.

The Boston Committees

As members of the Association realize, it would be quite impossible to arrange successfully a large and complex meeting and to carry it through to a conclusion, successful in all respects, if it were not for the substantial services of many local scientists and other members and friends of the Association. They merit the unstinted appreciation of all who attend. It is noteworthy that Earl P. Stevenson accepted the general chairmanship of the seventh Boston meeting in the fall of 1952, attended and studied the operations of the St. Louis meeting, appointed the local committees early in the year, and has kept in

close touch with all phases of this year's meeting. In making the 120th meeting a memorable one, those whose names follow have advanced science.

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SUMMARY OF EVENTS

The AAAS Annual Exposition of Science and Industry and the AAAS Science Theatre, both in the Mechanics Building, open Sunday afternoon and close Wednesday afternoon. The Visible Directory of Registrants, also in the Mechanics Building, is open daily throughout the

meeting period from 8:00 A.M. to 6:00 P.M., except Sunday and Tuesday when it will remain open until 11:00 P.M.

Saturday, December 26

Saturday Morning

Education

X5 *American Nature Study Society*—10:00 A.M.; Meeting of Board of Directors; Conference Room, Bradford.

Saturday Afternoon

Astronomy

D, B *Section on Astronomy*; and *Section on Physics*—2:15 P.M.; Symposium: Radio Astronomy, Part I: General Survey; Lecture Hall, American Academy of Arts and Sciences.

Geology and Geography

E4 *National Speleological Society*—2:00 P.M.; General Session; Oval Room, Bradford.

Anthropology

H *Section on Anthropology*—2:00 P.M.; Symposium: Theoretical Models for the Study of Culture Change; State Suite, Sheraton Plaza.

Education

X5 *American Nature Study Society*—2:00 P.M.; Panel: New Techniques in Nature Photography; Governor Bradford Room, Bradford.

Saturday Evening

AAAS as a Whole

AAAS Board of Directors Meeting—8:00 P.M.; Suite of Administrative Secretary, Statler.

Astronomy

D, B *Section on Astronomy*; and *Section on Physics*—8:15 P.M.; Symposium: Radio Astronomy, Part II: Radio Sources; Lecture Hall, American Academy of Arts and Sciences.

Anthropology

H *Section on Anthropology*—8:00 P.M.; Symposium: The Indians of New England: Their Archaeology and Ethnology; State Suite, Sheraton Plaza.

Education

X5 *American Nature Study Society*—8:00 P.M.; Annual Meeting of the ANSS; Lobby Salon, Bradford. 8:30 P.M.; Annual Showing of Kodachromes; Lobby Salon, Bradford.

Sunday, December 27

Sunday Morning

AAAS as a Whole

AAAS General Symposium—9:30 A.M.; Species Which Feed Mankind, Part I: Plant Species; Paul Revere Hall, Mechanics Building.

X3, X6, M *American Book Publishers Council; American Textbook Publishers Institute*; and *Section on Engineering*—10:00 A.M.; Symposium: Transmission of Ideas, Part I; Room A, Mechanics Building.

Zoological Sciences

F4 *Society of Systematic Zoology*—10:00 A.M.; Council Meeting I; Room of Secretary, Statler.

Anthropology

H, I *Section on Anthropology*; and *Section on Psychology*—9:30 A.M.; Symposium: Non-human Primates and the Problems of Human Evolution, Part I; Ballroom Foyer, Sheraton Plaza.

History and Philosophy of Science

L1 *History of Science Society*—10:00 A.M.; Papers on the History of Physics and Chemistry; Back Bay Room, Sheraton Plaza.

Education

FG7 *National Association of Biology Teachers*—9:30 A.M.; Outstanding Techniques and Programs in Conservation Education; Oval Room, Bradford.

X5 *American Nature Study Society*—10:00 A.M.; Session; Governor Bradford Room, Bradford.

Sunday Afternoon

AAAS as a Whole

AAAS General Symposium—2:00 P.M.; Species Which Feed Mankind, Part II: Animal Species; Paul Revere Hall, Mechanics Building.

K *AAAS Section on Social and Economic Sciences*; and *AAAS Symposium Committee*—2:30 P.M.; The Scientist in American Society, Part I; Talbot Hall, Mechanics Building.

X3, X6, M *American Book Publishers Council; American Textbook Publishers Institute*; and *Section on Engineering*—2:00 P.M.; Symposium: Transmission of Ideas, Part II; Room A, Mechanics Building.

AAAS Council Meeting I—4:00 P.M. Parlor A, Statler.

Chemistry

C *Section on Chemistry*—2:00 P.M.; Contributed Papers; Room C, Mechanics Building.

Astronomy

D *Section on Astronomy*—2:30 P.M.; Vice Presidential Address; Lecture Hall, American Academy of Arts and Sciences.

D, B *Section on Astronomy*; and *Section on Physics*—3:30 P.M.; Symposium: Radio Astronomy, Part III: A Selection of Current Research Projects at Home and Abroad; Lecture Hall, American Academy of Arts and Sciences.

Zoological Sciences

F4 *Society of Systematic Zoology*—2:00 P.M.; Symposium: The Phoronidea, Bryozoa and Entoprocta, and Brachiopoda: Their Status as Phyla and Their Relationships; Ballroom Assembly, Statler.

Anthropology

H, I *Section on Anthropology*; and *Section on Psychology*—2:00 P.M.; Symposium: Non-human Primates and the Problems of Human Evolution, Part II; Ballroom Foyer, Sheraton Plaza.

Social and Economic Sciences

K, E *Section on Social and Economic Sciences*; and *Section on Geology and Geography*—2:30 P.M.; Symposium: Regional Analysis; Room D, Mechanics Building.

History and Philosophy of Science

L, L3, L2, X13, X2 *Section on History and Philosophy of Science; Philosophy of Science Association; Institute for the Unity of Science; National Science Foundation*; and *American Academy of Arts and Sciences*—2:00 P.M.; Symposium: Validation of Scientific Theories; Hub Room, Sheraton Plaza.

L3 *Philosophy of Science Association*—4:30 P.M.; Business Meeting; Hub Room, Sheraton Plaza.

Education

Q1, Q *AAAS Cooperative Committee on the Teaching of Science and Mathematics*; and *Section on Education*—1:30 P.M.; Symposium: The Next Generation of Young Scientists and Their Teachers; Lobby Salon, Bradford.

X5 *American Nature Study Society*—2:00 P.M.; Reaching the Larger Public with Nature Study; Governor Bradford Room, Bradford.

Sunday Evening

AAAS as a Whole

AAAS, X17 *American Association for the Advancement of Science*; and *Society of the Sigma Xi*—8:00 P.M.; **Invited Address by A. V. Hill, British Association for the Advancement of Science;** Ballroom, Statler.

E3 *National Geographic Society*—8:30 P.M.; Annual Illustrated Lecture; Grand Hall, Mechanics Building.

X8 *Conference on Scientific Editorial Problems II*—8:00 P.M.; Conference on Scientific Editorial Problems; Room A, Mechanics Building.

Zoological Sciences

F4, FG8 *Society of Systematic Zoology*; and *Society for the Study of Evolution*—8:00 P.M.; Open House and Smoker; Director's Room, Museum of Comparative Zoology, Harvard.

Biological Sciences

FG2 *American Society of Human Genetics*—8:00 P.M.; Board of Directors Meeting; Copley Room, Sheraton Plaza.

Anthropology

H *Section on Anthropology*—6:00 P.M.; Anthropologists' Dinner and Vice Presidential Address; Hub Room, Sheraton Plaza.

History and Philosophy of Science

L1 *History of Science Society*—8:00 P.M.; Council Meeting; Room 131, Sheraton Plaza.

Education

FG7, Q3, X5 *National Association of Biology Teachers; National Science Teachers Association*; and *American Nature Study Society*—6:00 P.M.; Banquet of the Science Teaching Societies; Lobby Salon, Bradford. 9:30 P.M.; All Societies Mixer; Lobby Salon, Bradford.

X5 *American Nature Study Society*—8:00 P.M.; Presidential Program: Bering Sea Adventure (new film); Governor Bradford Room, Bradford.

Monday, December 28

Monday Morning

AAAS as a Whole

X1 *Academy Conference*—9:00 A.M.; Business Meeting; Parlor A, Bradford. 10:15 A.M.; Round Table Discussion; Parlor A, Bradford.

X9, M, M1, X15, X12, X13 *Conference on Scientific Manpower III; Section on Engineering; Engineering Manpower Commission; Scientific Manpower Commission; National Research Council*; and *National Science Foundation*—9:00 A.M.; Conference on Scientific Manpower: Part I: The Present Situation Respecting Scientific and Engineering Manpower; Louis XIV Ballroom, Somerset.

Physics

B, B1, X4 *Section on Physics; American Meteorological Society*, and *American Geophysical Union*—9:30 A.M.; Symposium: Physics of the Upper Atmosphere, Part I; Room A, Mechanics Building.

Chemistry

C, N, N10 *Section on Chemistry; Section on Medical Sciences*; and *American Institute of Nutrition*—9:30 A.M.; Symposium: Comparative Nutrition Requirements of Animal Species, Part I; Paul Revere Hall, Mechanics Building.

Geology and Geography

E, E2 *Section on Geology and Geography*; and *Geological Society of America*—9:30 A.M.; Symposium: New England Geology, Part I; Room D, Mechanics Building.

Zoological Sciences

F1 *American Society of Zoologists*—9:00 A.M.; Concurrent Session 1; Physiology of Development; Parlor B, Statler. 9:00 A.M.; Concurrent Session 2; Experimental Biology; Parlor A, Statler. 9:00 A.M.; Concurrent Session 3; Endocrinology; Parlor C, Statler.

F4 *Society of Systematic Zoology*—10:00 A.M.; Annual Business Meeting; Parlor F, Statler.

Biological Sciences

FG2 *American Society of Human Genetics*—9:00 A.M.; Contributed Papers; Oval Room, Sheraton Plaza.

FG4 *Beta Beta Beta*—9:00 A.M.; Executive session; Room 131, Sheraton Plaza.

FG6 *Genetics Society of America*—9:00 A.M.; Concurrent Session 1; Short Papers; Ballroom Foyer, Sheraton Plaza. 9:00 A.M.; Concurrent Session 2; Short Papers; Hub Room, Sheraton Plaza.

Botanical Sciences

G *Section on Botanical Sciences*—9:30 A.M.; Contributed Papers in General Botany; Back Bay Room, Sheraton Plaza.

G, G1 *Section on Botanical Sciences*, and *New England Section of American Society of Plant Physiologists*—9:00 A.M.; Contributed Papers in Plant Physiology; Ballroom, Sheraton Plaza.

G, FG5 *Section on Botanical Sciences*, and *Ecological Society of America*—9:00 A.M.; Second National Pollen Conference, Session I; Copley Room, Sheraton Plaza.

Anthropology

H *Section on Anthropology*—10:00 A.M.; Contributed Papers; State Suite, Sheraton Plaza.

Social and Economic Sciences

K, X14, X7, E *Section on Social and Economic Sciences; New England Council; Committee of New England of the National Planning Association*; and *Section on Geology and Geography*—9:30 A.M.; Symposium: The Economic State of New England, Part I; Princess Ballroom, Somerset.

History and Philosophy of Science

L, L1 *Section on History and Philosophy of Science* and *History of Science Society*—9:30 A.M.; Symposium: Science and Its History: Three Currents of Interpretation; Jacob Sleeper Hall, Boston University Junior College.

Engineering

M, N, I *Section on Engineering; Section on Medical Sciences*; and *Section on Psychology*—9:30 A.M.; Symposium: Communication Aids for the Blind; Room E, Mechanics Building.

Medical Sciences

Nm *Subsection on Medicine*—9:30 A.M.; Symposium: Antimetabolites and Cancer, Part I; Talbot Hall, Mechanics Building.

Np, N11, N14, N6, N8, N9, N12 *Subsection on Pharmacy; American Pharmaceutical Association, Scientific Section; American Society of Hospital Pharmacists; American Association of Colleges of Pharmacy; American College of Apothecaries; American Drug Manufacturers Association*; and *American Pharmaceutical Manufacturers Association*—9:00 A.M.; Greetings and Messages, Contributed Papers; Room C, Mechanics Building.

Agriculture

O *Section on Agriculture*—9:00 A.M.; Symposium: Agronomic Problems of the Northeastern States, Part I; Room F, Mechanics Building.

Education

Q *Section on Education*—9:00 A.M.; Concurrent

Session 1; Contributed Papers; Oak Room, Bradford. 9:00 A.M.; Concurrent Session 2; Contributed Papers; Glass Room, Bradford.

FG7 *National Association of Biology Teachers*—8:00 A.M.; Meeting of Executive Board; Drawing Room, Bradford.

FG7, Q3, X5, Q1 *National Association of Biology Teachers; National Science Teachers Association; American Nature Study Society*; and *AAAS Cooperative Committee*—8:30 A.M.; Science Teaching Films; Lobby Salon, Bradford. 9:30 A.M.; New Developments from Research into Resources of the Land; Lobby Salon, Bradford.

Monday Noon and Afternoon

AAAS as a Whole

X1 *Academy Conference*—1:30 P.M.; Panel Presentation and Round Table Discussion of Three Topics; Parlor A, Bradford.

X9, M, M1, X15, X12, X13 *Conference on Scientific Manpower III; Section on Engineering; Engineering Manpower Commission; Scientific Manpower Commission; National Research Council*; and *National Science Foundation*—2:00 P.M.; Conference on Scientific Manpower: Part II: The Present Situation Respecting Scientific and Engineering Manpower; Louis XIV Ballroom, Somerset.

Mathematics

A *Section on Mathematics*—4:30 P.M.; Vice Presidential Address; Room A, Mechanics Building.

Physics

B, B1, X4 *Section on Physics; American Meteorological Society*; and *American Geophysical Union*—2:00 P.M.; Section B Vice Presidential Address and Symposium: Physics of the Upper Atmosphere, Part II; Room A, Mechanics Building.

Chemistry

C, N, N10 *Section of Chemistry; Section on Medical Sciences*; and *American Institute of Nutrition*—2:00 P.M.; Symposium: Comparative Nutrition Requirements of Animal Species, Part II; Paul Revere Hall, Mechanics Building.

Geology and Geography

E, E2 *Section on Geology and Geography*; and *Geological Society of America*—2:00 P.M.; Symposium: New England Geology, Part II; Room D, Mechanics Building.

Zoological Sciences

F1 *American Society of Zoologists*—2:00 P.M.; Concurrent Session 1; General Physiology; Parlor A, Statler. 2:00 P.M.; Concurrent Session 2; Experimental Biology; Parlor B, Statler. 2:00 P.M.; Concurrent Session 3; Endocrinology; Parlor C, Statler. 4:45 P.M.; Business Meeting; Georgian Room, Statler.

F2 *Herpetologists League*—2:00 P.M.; Conference on Common Names of the ASIH Checklist; Parlor F, Statler.

F3 *Massachusetts Zoological Society*—4:30 P.M.; Progress Meeting and Arctic Lecture; Parlor F, Statler.

F4 *Society of Systematic Zoology*—2:00 P.M.; Discussion Panel: Nomenclature: Results of the Sessions at the Copenhagen Congress; Ballroom Assembly, Statler.

Biological Sciences

FG2 *American Society of Human Genetics*—2:00 P.M.; Symposium: Human Genetics and Medical Education; Oval Room, Sheraton Plaza. 4:00 P.M.; Annual Business Meeting; Oval Room, Sheraton Plaza.

FG3, FG6 *American Society of Naturalists*; and *Genetics Society of America*—2:00 P.M.; Symposium: Some Biological Effects of Radiation from Nuclear Detonations; Ballroom, Sheraton Plaza.

FG3 *American Society of Naturalists*—5:00 P.M.; Annual Business Meeting; Ballroom Foyer, Sheraton Plaza.

FG6 *Genetics Society of America*—2:00 P.M.; Short Papers; Hub Room, Sheraton Plaza.

Botanical Sciences

G, G1 *Section on Botanical Sciences*; and *New England Section of American Society of Plant Physiologists*—2:00 P.M.; Contributed Papers in Plant Physiology; Ballroom Foyer, Sheraton Plaza.

G, FG5 *Section on Botanical Sciences*; and *Ecological Society of America*—2:00 P.M.; Second National Pollen Conference, Session 2; Copley Room, Sheraton Plaza.

Anthropology

H *Section on Anthropology*—2:00 P.M.; Contributed Papers; State Suite, Sheraton Plaza.

Psychology

I *Section on Psychology*—2:00 P.M.; General Papers; Room E, Mechanics Building.

Social and Economic Sciences

K, X14, X7, E *Section on Social and Economic Sciences; New England Council; Committee of New England of the National Planning Association*; and *Section on Geology and Geography*—2:00 P.M.; Symposium: The Economic State of New England, Part II; Princess Ballroom, Somerset.

History and Philosophy of Science

L1 *History of Science Society*—2:00 P.M.; New Methods in the Sciences; Back Bay Room, Sheraton Plaza.

Medical Sciences

Nm *Subsection on Medicine*—2:00 P.M.; Symposium: Antimetabolites and Cancer, Part II; Talbot Hall Mechanics Building.

Np, N11, N14, N6, N8, N9, N12 *Subsection on Pharmacy; American Pharmaceutical Association, Scientific Section; American Society of Hospital Pharmacists; American Association of Colleges of Pharmacy; American College of Apothecaries; American Drug Manufacturers Association*; and *American Pharmaceutical Manufacturers Association*—2:00 P.M.; Contributed Papers; Room C, Mechanics Building.

Agriculture

O *Section on Agriculture*—2:00 P.M.; Symposium: Agronomic Problems of the Northeastern States, Part II; Room F, Mechanics Building.

Education

Q *Section on Education*—2:00 P.M.; Symposium: The Prediction of Child Development and Its Educational Implications; Glass Room, Bradford.

FG7 *National Association of Biology Teachers*—12:30 P.M.; Annual Luncheon and Address; Reception Room, Bradford. 2:00 P.M.; Human Conservation; Reception Room, Bradford.

Q3 *National Science Teachers Association*—2:00 P.M.; Concurrent Session 1; Elementary Program; Roof Ballroom, Bradford. 2:00 P.M.; Concurrent Session 2; Secondary Program; Lobby Salon, Bradford.

X5 *American Nature Study Society*—2:00 P.M.; Panel: An Approach to Nature Education for Everyone; Governor Bradford Room, Bradford.

Monday Evening

AAAS as a Whole

AAAS Presidential Address—8:00 P.M.; Ballroom, Statler.

AAAS Reception—9:00 P.M.; Ballroom Assembly, Statler.

X1 *Academy Conference*—6:00 P.M.; Annual Dinner; Oak Room, Bradford.

Physics

B, B2 *Section on Physics*; and *Sigma Pi Sigma*—6:00 P.M.; Physicists' Dinner; Parlor B, Statler.

Botanical Sciences

G *Section on Botanical Sciences*—6:30 P.M.; All-Botanists' Dinner; Hub Room, Sheraton Plaza. 8:00 P.M.; Vice Presidential Address; Hub Room, Sheraton Plaza.

Social and Economic Sciences

K, X14, X7, E *Section on Social and Economic Sciences; New England Council; Committee on New England of the National Planning Association*; and *Section on Geology and Geography*—7:00 P.M.; Evening Banquet Session and Symposium: The Economic State of New England, Part III; Harvard Club.

History and Philosophy of Science

L1 *History of Science Society*—8:00 P.M.; Annual Dinner of the Society and Address; Club of Odd Volumes.

Education

FG7 *National Association of Biology Teachers*—8:00 P.M.; Meeting of Executive Board; Drawing Room, Bradford. 8:00 P.M.; Meeting of Health Committee; Room 520, Bradford.

Science in General

X11 *National Association of Science Writers*—8:30 P.M.; Symposium: Science and the Public; Schell Room, Sloan Building, Massachusetts Institute of Technology.

Tuesday, December 29
Tuesday Morning

AAAS as a Whole

AAAS General Symposium—9:30 A.M.; The Sea Frontier, Part I; Paul Revere Hall, Mechanics Building.

X9, M, M1, X15, X12, X13 *Conference on Scientific Manpower III; Section on Engineering; Engineering Manpower Commission; Scientific Manpower Commission; National Research Council*; and *National Science Foundation*—9:00 A.M.; Conference on Scientific Manpower, Part III: The Utilization of Specialized Manpower Abroad; Country Room, Somerset.

Physics

B, FG3 *Section on Physics*; and *American Society of Naturalists*—9:30 A.M.; Symposium: Physics in Biology, Part I; Room E, Mechanics Building.

B1 *American Meteorological Society*—9:30 A.M.; Cloud Physics, Part I; Crystal Ballroom, Kenmore.

Chemistry

C *Section on Chemistry*—9:00 A.M.; Symposium: Chemicals in Food; Room C, Mechanics Building.

Geology and Geography

E, M, P, E2, E1, X4 *Section on Geology and Geography; Section on Engineering; Section on Industrial Science; Geological Society of America; New England Division, Asssociation of American Geographers*; and *American Geophysical Union*—9:30 A.M.; Symposium: Water for Industry, Part I; Jacob Sleeper Hall, Boston University Junior College.

E5 *Society of Exploration Geophysicists*—9:00 A.M.; Technical Session; Balinese Room, Somerset.

Zoological Sciences

F1 *American Society of Zoologists*—9:00 A.M.; Concurrent Session 1; Embryology; Parlor A, Statler. 9:00 A.M.; Concurrent Session 3; Comparative Physiology; Parlor C, Statler.

F1, FG5 *American Society of Zoologists*; and *Ecological Society of America*—9:00 A.M.; Animal Behavior and Sociobiology; Parlor B, Statler.

F4 *Society of Systematic Zoology*—10:00 A.M.; Contributed Papers; Parlor F, Statler.

Biological Sciences

FG2 *American Society of Human Genetics*—9:00 A.M.; Contributed Papers; Oval Room, Sheraton Plaza.

FG6 *Genetics Society of America*—9:30 A.M.; Invitation Program; Main Lecture Room, Biological Laboratories, Harvard.

Botanical Sciences

G, G1 *Section on Botanical Sciences*; and *New England Section of American Society of Plant Physiologists*—9:30 A.M.; Symposium: The Uses of Large Scale Algal Cultures, Part I; Hub Room, Sheraton Plaza.

G, FG5 *Section on Botanical Sciences*; and *Ecological Society of America*—9:00 A.M.; Second National Pollen Conference, Session 3; Copley Room, Sheraton Plaza.

Psychology

I *Section on Psychology*—9:30 A.M.; Invited Papers: Experimental Approaches to the Study of Brain Function; Room A, Mechanics Building.

Social and Economic Sciences

K *Section on Social and Economic Sciences*—9:30 A.M.; The Individual Scientist in Today's World; Room B, Mechanics Building.

History and Philosophy of Science

L, L3 *Section on History and Philosophy of Science*; and *Philosophy of Science Association*—9:00 A.M.; Contributed Papers; State Suite, Sheraton Plaza.

L *Section on History and Philosophy of Science*—11:00 A.M.; Vice Presidential Address; State Suite, Sheraton Plaza.

Medical Sciences

Nm *Subsection on Medicine*—9:30 A.M.; Symposium: Antimetabolites and Cancer, Part III; Talbot Hall, Mechanics Building.

Nd, N15 *Subsection on Dentistry*; and *International Association for Dental Research, North American Division*—8:30 A.M.; Symposium: Recent Animal Experimentations in Caries Research; Lecture Hall, Harvard School of Dental Medicine.

Np, N11, N14, N6, N8, N9, N12 *Subsection on Pharmacy; American Pharmaceutical Association, Scientific Section; American Society of Hospital Pharmacists; American Association of Colleges of Pharmacy; American College of Apothecaries; American Drug Manufacturers Association*; and *American Pharmaceutical Manufacturers Association*—9:00 A.M.; Contributed Papers; Room D, Mechanics Building. 10:00 A.M.; Symposium: Professional Resources in Pharmacy in the United States; Room D, Mechanics Building.

Agriculture

O *Section on Agriculture*—9:00 A.M.; Symposium: Agronomic Problems of the Northeastern States, Part III; Room F, Mechanics Building.

Industrial Science

P, X14 *Section on Industrial Science; Fortune Magazine*; and *The New England Council*—9:30 A.M.; Symposium: Identification and Development of Senior Executives in American Industry: Contributions of Modern Science, Part I; Louis XIV Ballroom, Somerset.

P1, P *American Industrial Hygiene Association*; and *Section on Industrial Science*—10:00 A.M.; Contributed Papers; Princess Ballroom, Somerset.

Education

Q *Section on Education*—9:00 A.M.; Concurrent Session 1; Panel: Why Teachers Do or Do Not Use Films; Parlor A, Bradford. 9:00 A.M.; Concurrent Session 2; Symposium: Visual Efficiency in Industry, Part I; Parlor B, Bradford.

FG7 *National Association of Biology Teachers*—8:00 A.M.; Meeting of Executive Board; Drawing Room, Bradford.

FG7, Q3, X5, Q1 *National Association of Biology Teachers; National Science Teachers Association; American Nature Study Society*; and *AAAS Cooperative Committee*—8:30 A.M.; Science Teaching Films; Lobby Salon, Bradford. 9:30 A.M.; New Developments from Research into Resources of the Water; Lobby Salon, Bradford.

Science in General

X17 *Society of the Sigma Xi*—10:00 A.M.; 54th Annual Convention; Room 1, Harvard Club.

Tuesday Noon and Afternoon

AAAS as a Whole

AAAS General Symposium—2:00 P.M.; The Sea Frontier, Part II; Paul Revere Hall, Mechanics Building.

Physics

B, FG3 *Section on Physics*; and *American Society of Naturalists*—2:00 P.M.; Symposium: Physics in Biology, Part II; Room E, Mechanics Building.

B1 *American Meteorological Society*—2:00 P.M.; Cloud Physics, Part II; Crystal Ballroom, Kenmore.

Chemistry

C1 *Alpha Chi Sigma*—12:30 P.M.; Luncheon Meeting; Parlor 131, Sheraton Plaza.

C *Section on Chemistry*—2:00 P.M.; Symposium: Recent Advances in Food Technology; Room C, Mechanics Building.

Geology and Geography

E, M, P, E2, E1, X4 *Section on Geology and Geography; Section on Engineering; Section on Industrial Science; Geological Society of America; New England Division, Association of American Geographers*; and *American Geophysical Union*—2:00 P.M.; Symposium: Water for Industry, Part II; Jacob Sleeper Hall, Boston University Junior College.

E5 *Society of Exploration Geophysicists*—2:30 P.M.; Technical Session; Balinese Room, Somerset.

Zoological Sciences

F1 *American Society of Zoologists*—12:30 P.M.; Luncheon for Animal Behaviorists and Sociobiologists; Music Box Room, Copley Square. 2:00 P.M.; Concurrent Session 2; Embryology; Ballroom Assembly, Statler. 2:00 P.M.; Concurrent Session 3; Cytology; Parlor A, Statler. 2:00 P.M.; Concurrent Session 4; General and Mammalian Physiology; Parlor B, Statler.

F4 *Society of Systematic Zoology*—2:00 P.M.; Council Meeting II; Room of Secretary, Statler.

Biological Sciences

FG2, FG1 *American Society of Human Genetics*; and *American Eugenics Society*—2:00 P.M.; Symposium: Genetic Factors Affecting Intelligence; Oval Room, Sheraton Plaza.

FG4 *Beta Beta Beta*—12:15 P.M.; Luncheon; Ballroom Foyer, Sheraton Plaza. 1:00 P.M.; Convention Address; Ballroom Foyer, Sheraton Plaza. 2:00 P.M.; Business Session; Ballroom Foyer, Sheraton Plaza.

FG6 *Genetics Society of America*—1:00 P.M.; Luncheon and Business Meeting; Ballroom, Continental, Cambridge. 3:00 P.M.; Demonstration Papers; Room 182, Biological Laboratories, Harvard.

Botanical Sciences

G, G1 *Section on Botanical Sciences*; and *New England Section of American Society of Plant Physiologists*—2:00 P.M.; Symposium: The Uses of Large Scale Algal Cultures, Part II; Hub Room, Sheraton Plaza.

Psychology

I, F1 *Section on Psychology*; and *American Society of Zoologists*—2:00 P. M.; Invited Papers; Comparative Studies of Social Behavior; Room A, Mechanics Building.

Social and Economic Sciences

K3 *Pi Gamma Mu, National Social Science Honor Society*—12:30 P.M.; Luncheon; Town Room, Somerset.

K2, K, M, K3 *National Academy of Economics and Political Science; Section on Social and Economic Sciences; Section on Engineering*; and *Pi Gamma Mu*—2:00 P.M.; Symposium: Scientific Research and National Security; Country Room, Somerset.

History and Philosophy of Science

L, Q *Section on History and Philosophy of Science*; and *Section on Education*—2:00 P.M.; Symposium: Science and General Education; State Suite, Sheraton Plaza.

Medical Sciences

Nm *Subsection on Medicine*—2:00 P.M.; Symposium: Antimetabolites and Cancer, Part IV; Talbot Hall, Mechanics Building.

Nd, N15 *Subsection on Dentistry*; and *International Association for Dental Research, North American Division*—2:00 P.M.; Symposium: Pathologic Disturbances of the Dental Pulp Resulting from Dental Operative Procedures; Lecture Hall, Harvard School of Dental Medicine.

Np, N11, N14, N6, N8, N9, N12 *Subsection on Pharmacy; American Pharmaceutical Association, Scientific Section; American Society of Hospital Pharmacists; American Association of Colleges of Pharmacy; American College of Apothecaries; American Drug Manufacturers Association*; and *American Pharmaceutical Manufacturers Association*—2:00 P. M.; Contributed Papers; Room D, Mechanics Building. 3:00 P.M.; Symposium: Accreditation of Hospitals: Its Effects on Pharmaceutical Services and Better Patient Care; Room D, Mechanics Building.

N4 *Alpha Epsilon Delta National Premedical Honor Society*—12:15 P.M.; Luncheon and Session; Parlor C, Statler.

Agriculture

O *Section on Agriculture*—2:00 P.M.; Symposium: Agronomic Problems of the Northeastern States, Part IV; Room F, Mechanics Building.

Industrial Science

P, X14 *Section on Industrial Science; Fortune Magazine*; and *The New England Council*—12:30 P.M.; Luncheon and Address; Louis XIV Ballroom, Somerset. 2:30 P.M.; Symposium: Identification and Development of Senior Executives in American Industry: Contributions of Modern Science, Part II; Louis XIV Ballroom, Somerset.

P1, P *American Industrial Hygiene Association*; and *Section on Industrial Science*—2:00 P.M.; Contributed Papers; Princess Ballroom, Somerset.

Education

Q *Section on Education*—2:00 P.M.; Symposium: Visual Efficiency in Industry, Part II; Parlor B, Bradford.

Q, Q2 *Section on Education*; and *American Educational Research Association*—2:00 P.M.; Symposium: Research on Higher Mental Processes; Parlor A, Bradford.

FG7 *National Association of Biology Teachers*—

2:00 P.M.; Your Biology Class Room Problems; Reception Room, Bradford. 3:35 P.M.; Reports of Chairman of Group Work; Reception Room, Bradford.

Q3 *National Science Teachers Association*—2:00 P.M.; Concurrent Session 1; Elementary Program; Roof Ballroom, Bradford. 2:00 P.M.; Concurrent Session 2; Secondary Program; Lobby Salon, Bradford.

X5 *American Nature Study Society*—2:00 P.M.; Symposium: Some Practical Applications of Ecology; Governor Bradford Room, Bradford.

Science in General

X10 *Honor Society of Phi Kappa Phi*—1:30 P.M.; Business Meeting; Parlor F, Statler.

X17, X16 *Society of the Sigma Xi*; and *Scientific Research Society of America*—12:30 P.M.; Joint Luncheon; Library, Harvard Club.

X16 *Scientific Research Society of America*—4:00 P.M.; Annual Convention; Library, Harvard Club.

X17 *Society of the Sigma Xi*—2:00 P.M.; 54th Annual Convention (reconvened); Library, Harvard Club.

Tuesday Evening

AAAS as a Whole

AAAS, K *AAAS Symposium Committee*; and *Section on Social and Economic Sciences*—8:00 P.M.; The Scientist in American Society, Part II; Paul Revere Hall, Mechanics Building.

X16 *Scientific Research Society of America*—8:00 P.M.; Annual Address and Award of William Proctor Prize; Ballroom, Statler.

FG3, AAAS *American Society of Naturalists*; and *AAAS*—8:30 to 11:30 P.M.; Biologists' Smoker; Grand Hall, Mechanics Building.

Chemistry

C *Section on Chemistry*—6:30 P.M.; Chemists' Dinner and Vice Presidential Address; Bay State Room, Statler.

Zoological Sciences

F1, F *American Society of Zoologists*; and *Section on Zoological Sciences*—6:00 P.M.; Zoologists' Dinner and Section F Vice Presidential Address; Georgian Room, Statler.

Biological Sciences

FG2, FG6 *American Society of Human Genetics*; and *Genetics Society of America*—6:00 P.M.; Geneticists' Dinner and Presidential Address; Music Box Room, Copley Square.

Medical Sciences

Nd, N15 *Subsection on Dentistry*; and *International Association for Dental Research, North American Division*—8:00 P.M.; Symposium: Periodontia; Lecture Hall, Harvard School of Dental Medicine.

Education

FG7 *National Association of Biology Teachers*—8:00 P.M.; Meeting of Executive Board; Drawing Room, Bradford. 8:00 P.M.; Meeting of Editorial Board; Conference Room, Bradford.

Q3 *National Science Teachers Association*—7:30 P.M.; Executive Committee Meeting; Room 520, Bradford.

X1 *Academy Conference*—7:30 P.M.; Junior Scientists Assembly; Lobby Salon, Bradford.

Wednesday, December 30

Wednesday Morning

AAAS as a Whole

AAAS Council Meeting II—9:00 A.M.; Parlor A, Statler.

Physics

B1 *American Meteorological Society*—9:00 A.M.; Synoptic Meteorology; Crystal Ballroom, Kenmore.

X4 *American Geophysical Union*—9:30 A.M.; Contributed Papers; Balinese Room, Somerset.

Chemistry

C, G, O *Section on Chemistry; Section on Botanical Sciences*; and *Section on Agriculture*—9:30 A.M.; Symposium: Growth and Nutrition of Plants; Room C, Mechanics Building.

Astronomy

D, B, E *Section on Astronomy; Section on Physics*; and *Section on Geology and Geography*—9:00 A.M.; Symposium: Origin of Meteorites, Part I; Lecture Hall, American Academy of Arts and Sciences.

Geology and Geography

E, K, E1 *Section on Geology and Geography; Section on Social and Economic Sciences*; and *New England Division, Association of American Geographers*—9:30 A.M.; Symposium: The Metropolis; Room D, Mechanics Building.

Zoological Sciences

F1 *American Society of Zoologists*—9:00 A.M.; Presidential Symposium: Bioluminescence as a Tool in the Study of Cell Processes; Ballroom, Statler.

Biological Sciences

FG2 *American Society of Human Genetics*—9:00 A.M.; Contributed Papers; Oval Room, Sheraton Plaza.

FG6 *Genetics Society of America*—9:00 A.M.; Concurrent Session 1; Short Papers; Ballroom Foyer, Sheraton Plaza. 9:00 A.M.; Concurrent Session 2; Short Papers; Hub Room, Sheraton Plaza.

FG8 *Society for the Study of Evolution*—8:30 A.M.; Council Meeting; Copley Room, Sheraton Plaza. 9:30 A.M.; Annual Business Meeting; Copley Room, Sheraton Plaza. 10:00 A.M.; Contributed Papers; Copley Room, Sheraton Plaza.

Psychology

I *Section on Psychology*—9:30 A.M.; Invited Papers: Human Engineering and Information Theory; Room A, Mechanics Building.

Social and Economic Sciences

K1, L2 *Committee for Social Physics*; and *Institute for the Unity of Science*—9:30 A.M.; Tentative Presentation of the General Principles of Social Physics; Country Room, Somerset.

Medical Sciences

N7 *American Association of Hospital Consultants*—9:30 A.M.; Symposium: The Research Function of the Hospital; Parlor C, Statler.

N13 *American Psychiatric Association*—9:30 A.M.; Contributed Papers; Bay State Room, Statler.

Industrial Science

P1, N *American Industrial Hygiene Association*; and *Section on Medical Sciences*—10:00 A.M.; Invited Papers; Princess Ballroom, Somerset.

Education

Q *Section on Education*—9:00 A.M.; Concurrent Session 1; Contributed Papers; Oval Room, Bradford. 9:00 A.M.; Concurrent Session 2; Contributed Papers; Glass Room, Bradford.

FG7, Q3, X5 *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 1954 coordinated program; Conference Room, Bradford.

FG7, X5 *National Association of Biology Teachers*; and *American Nature Study Society*—9:00 A.M.; Departure of Joint Field Trip; Lobby, Bradford.

Q3 *National Science Teachers Association*—9:30 A.M.; Inside NSTA; Governor Bradford Room, Bradford.

Science in General

X10 *Honor Society of Phi Kappa Phi*—8:00 A.M.; Breakfast; Parlor F, Statler. 9:00 A.M.; Business Meeting; Parlor F, Statler.

Wednesday Noon and Afternoon

AAAS as a Whole

AAAS Section Officers Luncheon and Business Meeting—12:00 noon; Parlor B, Statler.

Physics

X4 *American Geophysical Union*—1:30 P.M.; Contributed Papers; Balinese Room, Somerset.

Chemistry

C *Section on Chemistry*—2:00 P.M.; Symposium: Chemistry of the Sea as Related to Food Problems; Room C, Mechanics Building.

Astronomy

D, B, E *Section on Astronomy; Section on Physics*; and *Section on Geology and Geography*—12:30 P.M.; Luncheon; American Academy of Arts and Sciences. 1:30 P.M.; Symposium: Origin of Meteorites, Part II; Lecture Hall, American Academy of Arts and Sciences.

Geology and Geography

E, E2 *Section on Geology and Geography*; and *Geological Society of America*—2:00 P.M.; General Geology; Room E, Mechanics Building.

E, E1 *Section on Geology and Geography*; and *New England Division, Association of American Geographers*—2:00 P.M.; General Geography; Room D, Mechanics Building.

Zoological Sciences

F1 *American Society of Zoologists*—2:00 P.M.; Concurrent Session 1; Motion Pictures; Dorrance Building, Massachusetts Institute of Technology. 2:00 P.M.; Concurrent Session 2; Demonstrations; Dorrance Building, Massachusetts Institute of Technology. 4:30 P.M.; Panel Discussion: The Teaching of the Physiological Sciences at the Undegraduate Level; Dorrance Building, Massachusetts Institute of Technology.

F4 *Society of Systematic Zoology*—2:00 P.M.; Symposium: The Subspecies versus the Cline: Their Biological and Nomenclatural Significance; Georgian Room, Statler.

Biological Sciences

FG2, FG6, FG8, H *American Society of Human Genetics; Genetics Society of America; Society for the Study of Evolution*; and *Section on Anthropology*—2:00 P.M.; Symposium: Genetics and the Races of Man; Ballroom, Sheraton Plaza.

Psychology

I *Section on Psychology*—2:00 P.M.; Invited Papers: Sensory Processes; Room A, Mechanics Building. 4:30 P.M.; Vice Presidential Address; Room A, Mechanics Building.

Social and Economic Sciences

K1 *Committee for Social Physics*—2:00 P.M.; Some Indicated Areas of Application of Social Physics; Country Room, Somerset.

K4, K *Society for the Advancement of Criminology*; and *Section on Social and Economic Sciences*—2:00 P.M.; Symposium: A Scientific Approach to the Problems of Delinquency; Louis XIV Ballroom, Somerset.

Engineering

M *Section on Engineering*—2:00 P.M.; Symposium: Conservation of Human Resources: Highway Safety, Part I; Princess Ballroom, Somerset.

Medical Sciences

N5 *American Academy of Forensic Sciences*—2:00 P.M.; Symposium: Identification of the Dead; Parlor C, Statler.

N13 *American Psychiatric Association*—2:00 P.M.; Round Table Discussion; Bay State Room, Statler.

Education

Q *Section on Education*—2:00 P.M.; Invited Papers: Learning Difficulties Among School Children; Oval Room, Bradford. 3:30 P.M.; Vice Presidential Address; Oval Room, Bradford.

Wednesday Evening

AAAS as a Whole

X18 *United Chapters of Phi Beta Kappa*—Annual Address; 8:30 P.M.; Georgian Room, Statler.

Astronomy

D, B, E *Section on Astronomy; Section on Physics*; and *Section on Geology and Geography*—8:00 P.M.; Symposium: Origin of Meteorites, Part III; Lecture Hall, American Academy of Arts and Sciences.

Geology and Geography

E, E2 *Section on Geology and Geography*; and *Geological Society of America*—8:00 P.M.; Vice Presidential Address and Section E Smoker; Harvard Faculty Club, Cambridge.

Biological Sciences

FG3 *American Society of Naturalists*—6:00 P.M.; Naturalists' Dinner and Presidential Address; Music Box Room, Copley Square.

Engineering

M *Section on Engineering*—7:30 P.M.; Symposium: Conservation of Human Resources: Highway Safety, Part II; Princess Ballroom, Somerset.

Education

FG7 *National Association of Biology Teachers*—8:00 P.M.; Meeting of National Committee for NABT Conservation Project; Drawing Room, Bradford.

Thursday, December 31

Thursday Morning

Education

FG7 *National Association of Biology Teachers*—9:00 A.M.; Workshop in Conservation Education I; Conference Room, Bradford.

Thursday Afternoon

Education

FG7 *National Association of Biology Teachers*—1:00 P.M.; Workshop in Conservation Education II; Conference Room, Bradford.

Thursday Evening

Education

FG7 *National Association of Biology Teachers*—7:00 P.M.; Workshop in Conservation Education III; Conference Room, Bradford. **Note:** Sessions IV, V, and VI will continue Friday, Jan. 1, same times, same room.

ANNUAL EXPOSITION OF SCIENCE AND INDUSTRY

The AAAS Annual Exposition of Science and Industry, which dates back to 1924 (still earlier with certain pioneer exhibitors), has become an important and integral part of the Association's annual meeting. It provides an outstanding opportunity for those who use the tools and materials of science to meet those who produce and distribute the same. The 1953 edition of the Exposition, which occupies the large Exhibition Hall of Boston's Mechanics Building, is up to the same high standard of previous years.

The exhibits include the latest and best in scientific books, instruments, and materials; they are on a scale, and with a diversity, not usually possible at the meeting of an individual society or group of societies in a single field of science. In addition to this "core" of the Exposition, a variety of organizations have special exhibits, and there are technical exhibits by large firms representative of the basic industries of the nation. Prominent concerns in the chemical, pharmaceutical, and other industries are sharing with the attending scientists some of their impressive technological accomplishments. The Exposition should not be missed by anyone who attends this 120th meeting. Your convention badge assures admission.

The AAAS Annual Exposition of Science and Industry fills the Exhibition Hall of the Mechanics Building. The exhibit area, which is on the main floor, is reached through the entrance nearest Copley Square.

The Exposition is open to:

1. All **registrants** attending the 120th meeting;
2. Interestered **adults** who have applied for, and rereived, complimentary tickets of admission.

Hours

Sunday, Dec. 27	2:00 P.M.–8:00 P.M.
Monday, Dec. 28	9:00 A.M.–6:00 P.M.
Tuesday, Dec. 29	9:00 A.M.–9:00 P.M.
Wednesday, Dec. 30	9:00 A.M.–4:00 P.M.

Directory of Exhibitors

Starting across from the left corner, nearest the entrance, the peripheral booths run clockwise from 1 to 45. Booths 201–237, inclusive, are 8 × 8's, central in position; booths 101–111 are 12 × 8's, between the central stairs to the session rooms and the luncheon facilities.

Booths 23–40 and 112–166 are included in the New England Area. The Local Committee on Exhibits, with Walter S. Baird, president, Baird Associates, Inc., as chairman, and Donald D. Hathaway, also of Baird Associates, Inc., as secretary, has redesigned one area of the Annual Exposition of Science and Industry in a New England Area to emphasize, through industrial and institutional exhibits, New England's position as a world center of scientific and research activity. The exhibits of industry, which will be grouped together with outstanding scientific exhibits of New England's universities and institutions, will be a distinctive feature of the Exposition. This area will be decorated in colors of the spectrum.

As this General Program-Directory goes to press, many of the descriptive writeups of the exhibits of the New England Area have not been received in time to include here.

(Descriptive material prepared by individual exhibitors)

AAAS New Member Service—SCIENCE—THE SCIENTIFIC MONTHLY (Booths 1 and 2). There are personal advantages in joining the Association. Every person in attendance at this 120th meeting 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 1954), each member has a choice of a year of SCIENCE, the professional 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. The Symposium Volumes and other publications of the AAAS are also on display. Prospective advertisers may obtain sample copies of the magazines and rate cards. Members of the AAAS are requested to nominate fellow scientists for membership.

American Cancer Society, Inc. (Booth 9). The exhibit of the American Cancer Society depicts the morphological differences between the normal and abnormal cancer cells and indicates the role of many scientific disciplines, such as genetics, viruses, hormones, metabolism, nutrition, isotopes, physics, and chemotherapy, in their relationship with these two types of cells. Elaboration of the role of many of these disciplines is emphasized particularly in the utilization of many new research tools which have been developed in the last 25 years. The exhibit also includes a breakdown of the society's subsidy of cancer research in this country during the past eight years.

American Institute of Biological Sciences and the U.S.D.A. Library (Booth 3). This exhibit, sponsored by the Publications Committee of the American Institute of Biological Sciences and the U.S. Department of Agriculture Library, describes an electronic machine, known as the Rapid Selector, for storage, searching, and reproduction of scientific data. The Rapid Selector, first conceived by Dr. Vannevar Bush, stores data on microfilm. Along with each page of data is subject analysis in the form of dot code patterns. The machine photoelectrically matches the dots on the film with holes in a mask, and when the dots and holes match, copies the pertinent frame of data by flash photography. The prototype, which is the only machine of its type in existence, may be seen at the Department of Agriculture Library in Washington, D.C.

The American National Red Cross (Booth 16). The Blood Derivative Table Display depicts, in elementary fashion, the basic processes in the preparation of whole blood for use in transfusion. It also portrays some of the processes as well as the indicated uses of the fractionated elements of blood. The exhibit itself is intended as a focal point to stimulate further suggested study of the subject of blood which is contained in booklets (ARC 1721, *Medical Uses of Blood*; ARC 1731, *Blood and the Nation's Health*; P. A. Pamphlet #145, *Blood's Magic for All*).

As a result of previous showings, we have had requests from individual students and from schools for additional information which would provide raw material for sample scientific investigations on blood.

American Optical Company, Instrument Division (Booth 111). Several new and interesting developments will be shown and demonstrated. The new hand-operated AO Sterile Fluids Pump, used for intra-arterial infusions of blood, plasma, etc., and of particular interest to laboratories for moving small quantities of sterile fluids from one vessel to another, will be demonstrated. A standard AO Spencer Laboratory Microscope will be shown with the new auxiliary condenser. This provides full field illumination of all the low power objectives. In addition, a binocular microscope with the new and improved No. 700 Attachable Illuminator, which is now equipped with a low priced bulb, built-in condenser and removable filters, will also be demonstrated. The new AO Phase Bright-Line Haemacytometer, the AO Photomicrographic Camera with some modifications and improvements, also the low priced AO Spencer P45 Polarizing Microscope will be on display. Representatives O. E. Schaefer, N. J. Blaiklock, and R. I. Schiff will be on hand to demonstrate and discuss the many improvements and outstanding advantages of AO instruments.

The American Tobacco Company, Incorporated (Booths 5 and 6). The Research Laboratory of The American Tobacco Company will demonstrate its new type smoking machine which has been simplified in design and construction by the utilization of readily available components. This instrument simulates human smoking and is designed to facilitate investigations of the properties of tobacco smoke by making possible a reproducible collection of smoke for analysis. Through basic research in this field, means have been found for the scientific selection of tobaccos and the control of quality in manufacture of *Lucky Strike* cigarettes.

Association of American University Presses (Booth 41). You are welcome to examine the following new university press titles and many others at our booth. Baitsell: *Science in Progress, Eighth Series*; Drake: *Galileo's Dialogue Concerning the Two Chief World Systems*; Fisher: *Applied Electron Microscopy*; Gellhorn: *Physiological Foundations of Neurology and Psychiatry*; Hassmann: *Oil in the Soviet Union*; Ingold: *Structure and Mechanism in Organic Chemistry*; Jennings: *Wild Flowers of Western Pennsylvania and the Upper Ohio Basin*; Jewett: *Birds of Washington State*; Kuiper: *The Solar System*; Leicester: *Chymia*; Loomis: *Growth and Differentiation in Plants*; Lyttleton: *The Comets and Their Origin*; Mueller: *Goethe's Botanical Writings*; Quastler: *Information Theory in Biology*; Rogers: *Your Diabetes and How to Live With it*; Shapley: *Climatic Change*; Strughold: *The Green and Red Planet*; Turney: *Chateau-Gerard*; Wiggins: *Current Biological Research in the Alaskan Arctic*; Williams: *Free and Equal.*

Atomic Instrument Company (Booth 150). The Atomic Instrument Company exhibit represents a cross-section of its products in the fields of nuclear research instrumentation and electronic counting and control for industry and science. Several instruments incorporating the "Dekatron" cold cathode glow transfer counting tube are included in the demonstration. These include both straight counters and pre-set counters. Atomic's nuclear instruments range from a small "gun-type" Logarithmic Survey Meter to large units such as the Twenty Channel Differential Pulse Height Analyzer or the highspeed Dataprinter. Visitors are cordially invited to visit the company's facilities at 84 Massachusetts Avenue in Cambridge (directly opposite the Massachusetts Institute of Technology).

Badger Manufacturing Company (Booth 142).

Baird Associates, Inc. (Booths 165 and 166). For fifteen years, Baird Associates has been an engineering research and manufacturing institution in Cambridge, Massachusetts. The firm was originally organized by Walter S. Baird and John Sterner, now president and vice president, respectively, of the corporation.

The initial product of Baird Associates was designed and fabricated by Doctors Baird and Sterner. It was the first grating spectrograph of commercial significance, and that instrument, augmented by associated accessory equipment, is today one of the company's standard items. An outgrowth of this spectrograph is the Direct Reading Spectrometer, which is used for spectrochemical analysis of up to 18 elements in a metal sample, reading on dials directly in percent concentration. Instruments operating on the infrared absorption principle provide a means for organic chemical analysis. The Process Controls Analyzer monitors one element in a continuous gas stream, while the Infrared Recording Spectrophotometer gives a qualitative and quantitative analysis on a batch sampling basis. Other commercial products include the Flame Photometer, Interferometer, Dermal Radiometer, Roentgenogram Projector, and a wide variety of allied electronic-optical accessories for the major instruments.

Baird Associates' Research Department is well known for its approach to the problems of physical optics and precision instrumentation for the Department of Defense and many private clients. The scope of the Research Department, which employs one-quarter of the company's total personnel, includes the selection, detection, and measurement of electromagnetic radiation in wavelength regions from soft x-rays to microwaves. On a commercial basis, Research produces and sells HG 198 monoisotope lamps, bolometers, filters, sound-on-film modulators, and diffraction gratings. The company also produces surface finish standards, computers, periscopes, and transistor circuitry.

Bausch & Lomb Optical Co. (Booths 232 and 233). The new Bausch & Lomb Certified-Precision Diffraction Gratings will be demonstrated. Practical applications of these gratings, too, will be shown in the Grating Monochromator. In addition, the new Transistor Microscope will enable you to examine the construction of transistors, and see for yourself the value of stereomicroscopes in these intricate small parts assemblies. Of course, the leading line of laboratory and research microscopes, popular low priced microscope illuminators, and interference filters will be in the working display. Stop in at the booth for assistance in solving your problems, optically.

The Bettinger Corporation (Booths 158 and 173). One of the outstanding contributions to the national defense production has been the application of ceramic coatings to low alloy metals to conserve such critical and strategic elements as columbium, cobalt, tungsten, chromium, and nickel. General Electric, which has been awarded a contract by the Air Force to push this idea beyond the laboratory stage, had heard of Bettinger's research in the high temperature field. The investigation by General Electric resulted in the awarding of a contract to Bettinger to apply ceramic coatings on turbosupercharge parts. These high temperature coatings have proved so successful that they have been incorporated in many hot jet engine parts and have been one of the contributions toward adding longer life to jet engines. Bettinger has now applied its services to combating the many industrial corrosion problems.

The Blakiston Company, Inc. (Booth 217). Make a date to meet your friends here and see the important Blakiston science books. Arranged for easy reading in page proof form you will find: *The Microtomist's Formulary and Guide* by Gray, *Vegetable and Flower Seed Production* by Hawthorne and Pollard, and the new second edition of *Histopathologic Technic* by Lillie. These will be published in the spring of 1954. Here for examination and ready for spring classes you will find *Within the Living Plant* by Miller, *Textbook of Histology* by Greep, and *Biological Conservation* by Black. Other books you will want to see are, the new second edition of *Human Embryology* by Patten, the new second edition of *Diseases of the Retina* by Elwyn, the new eleventh edition of *Morris' Human Anatomy, Comparative Embryology of the Vertebrates* by Nelsen, *Physics for Science and Engineering Students* by Furry, Purcell, and Street, *Biological Chemistry* by Gero, and *General College Chemistry* by Brescia. Blakiston's science editor, William Keller, new sales manager, Don Hicks, and New England representative, Al Bodian, will be on hand to discuss these and other distinguished volumes on display.

Bowen Corporation (Booth 157).

Brookfield Engineering Laboratories, Inc. (Booth 229). It is planned to exhibit two instruments of interest to those engaged in the study of rheology—the flow and deformation of matter.

The newly developed Brookfield Stress Strain Analyzer will be shown in operation. This unit was designed to test and record the deformation of a gel structure as well as its yield point under a continuously increasing stress. It is believed to represent an important advance in this field.

A laboratory adaptation of the Brookfield Viscometran will also be shown. Designed as a continuous recording laboratory viscometer, its use with an XY strip chart recorder permits the accurate and faithful plotting of rheological curves. This unit will be exhibited with a Brookfield Helipath Stand—the combination permitting an investigation of the setting rates of such materials as Portland cement mixes, etc.

Brown Company (Booths 28, 29, 30, and 31).

Godfrey L. Cabot, Inc. (Booth 35).

J. S. Canner & Company, Inc. (Booth 203). Our exhibit will be held in cooperation with the Microcard Foundation, and will display publications in microcard form as issued by the Foundation and by our own firm, as well as the readers used in connection with such publications. We will also have on hand lists of microcard titles available, and catalogues showing what we can offer in the field of serial and periodical publications. We are library booksellers, specializing in sets and back files of periodicals in science, technology, humanities, and major works of reference.

The Charles River Breeding Labs., Inc. (Booth 7). The Charles River Breeding Laboratories of Brookline and North Wilmington, Mass., will have present the firm's president, Henry Foster. Dr. Foster will be at the show specifically to talk over problems met by laboratory technicians and specialists using rats for medical research. The Charles River Breeding Laboratories have met and solved successfully problems experienced by some of the country's largest laboratories utilizing rats. By means of stereoscopic slides, in color, and a 16-mm film, the breeding and processing of albino rats will be shown to those interested. Also available at the booth will be samples of the specially designed shipping containers shipped all over the country by the firm; and distributed free of cost will be the Charles River Breeding Laboratory's latest illustrated literature, a unique artist's drawing of the rat breeding cycle, a striking symbolic pencil sketch the size of a newspaper page, with interesting facts about the company, largest of its kind in the East.

The Coca-Cola Company (Lounge Area). Ice-cold Coca-Cola will be served through the courtesy and cooperation of the Coca-Cola Bottling Company of Boston and The Coca-Cola Company.

Control Engineering Corporation (Booth 118). The Control Engineering Corporation has pioneered in the development of pressure and flow-measuring instruments and devices. Several new tools for the process industries are exhibited. The outstanding item displayed is an industrial type inertial flowmeter for measuring mass flow rates of fluids, which is completely independent of pressure, viscosity, density, compressibility, temperature, and nonhomogeneity. The versatile performance of this meter gained by these ideal properties make it useful in a broad range of applications. Also displayed is a device which represents a significant advance in the measurement of dynamic pressures at extremely high temperatures. This water-cooled-pressure-pickup puts a new weapon in the hands of research engineers who have been plagued by the problem of obtaining reliable pressure measurements in high temperature systems. It is expected to be particularly useful in current research activities on rocket propellants.

Denoyer-Geppert Company (Booth 17). The Denoyer-Geppert Company will exhibit representative samples of its line of visual aids to the teaching of all aspects of biological science, including models, charts, skeletons, and other osteological preparations, demonstration mounts, corrosion specimens, laboratory manuals, and test sheets. Imported charts from the many D-G contacts with the foreign market will be on display and available for inspection. The famous Kampmeier-Lariviere Functional Human Anatomy Charts and the recently introduced CS250 Cartocraft Slated Human Skeleton Chart will be featured.

J. H. Emerson Company (Booth 4). The Emerson Micromanipulator will be shown. In this unique instrument all horizontal motions are coordinated by one control lever, so that the apparent motion of micro-instruments in the field of a compound microscope is identical with the actual motion of the "joy stick." The ratio of instrument travel to hand motion, moreover, is quickly adjustable, to allow for changes between low and high power. There are also vertical controls and convenient coarse adjustments.

Federal Reserve Bank of Boston (Booth 123). The exhibit of the Federal Reserve Bank of Boston will be developed around the theme: "Economic Research—What It Means to You." A series of seven panels will portray graphically the part which economic research plays in helping bankers and businessmen to promote a healthy New England economy. Additional displays of charts and publications will illustrate the scope of the activities of the bank's Research and Statistics Department.

Fenwal Corporation (Booths 37 and 38).

Folkway Records & Service Corp. (Booth 236). Folkways Records is the world's leading producer of authentic folk music on records including The Ethnic Folkways Library which contains an unusual selection of music of over 100 cultures. Recorded on location by native orchestras and vocal groups, each long play record is accompanied by extensive notes by famous collectors and recognized authorities. The Science Series on Folkway Records presents natural sound phenomena found on the earth, in the sea, and in the sky, and demonstrates human, natural, man-made, and location sounds. Many of the issues are original recordings on high fidelity—40–18,000 cycles. All Folkways Records are guaranteed for quality of reproduction and content. The address of Folkway Records is 117 West 46th Street, New York 36, New York.

General Radio Company (Booth 119). The General Radio Company was incorporated in 1915 and continuously since that time has specialized in the design and manufacture of electronic apparatus for science and industry. As such, it is the oldest electronics firm in America and is the largest in its field. The Company has been responsible for the introduction of many instruments which have since become standard in electronic laboratories. Among them are these now well-known items: the standard-signal generator, the beat-frequency oscillator, the cathode-ray oscillograph, the sound-level meter, the Variac® continuously adjustable autotransformer, and the Strobotac®, an electronic flash stroboscope.

In recent years scientists working in other fields, such as mechanics, chemistry, hydrodynamics, and medicine, have utilized GR instruments to perform investigations which can be best, or in many cases, only, made by the use of electronic measuring techniques. The latest designs of many of these instruments are listed in the Company's present catalog, which includes several hundred instruments and precision components. Among recent developments are the new UHF coaxial connectors, pulse generators, random-noise generators, motor speed controls, and many other devices to meet the rapidly growing demands of science and engineering.

Arnold Greene & Company (Booth 124). Our exhibit will consist of photographs and radiographs of parts with defects that were not visible until the magnetic particle inspection method, the fluorescent penetrant method, or radiography were used to show hidden defects. We will also have a mechanized exhibit showing how the magnetic particle inspection method operates, as well as the difference in surface appearance of indications brought out by the fluorescent penetrant method. Industrial x-ray equipment will be in operation whereby we will be able to make radiographs of certain sample parts for viewing by interested persons.

In attendance at all times will be laboratory personnel who will be able to discuss with interested persons our method of flow detection through nondestructive testing and other types of laboratory testing equipment. Test cases where our customers have been able to eliminate loss through our type of laboratory inspection will be available for the general public's information.

Harvard Apparatus Company, Inc. (Booth 8). Visitors seldom reach our considerably isolated plant. Our product of physiological apparatus is therefore to be seen largely through exhibits. For that reason we have, as on this occasion, adopted the policy of showing the complete line, including new items under way or stocked for delivery.

Karl Heitz, Inc. (Booth 214). Karl Heitz, distributors of Swiss precision equipment, will exhibit: *Alpa* 35-mm camera, designed for the scientific and industrial photographers (but also for private use), with unique combination of *Kern* reflex-prism (brilliant, life-size ground glass image) plus individual range finder. Each of the coated, highest resolving power lenses is not only inspected in the lens factory, but also individually tested in the *Alpa* research laboratory. Their focal length ranges from 28-mm up to 2000-mm and includes the famous *Kern* Switar 50-mm f/1.8, first and only true *Apochromat* in 35-mm history, correcting all 3 primary colors and rendering critical sharpness at full aperture. *Alpa* lenses have more than twice the extension range than other lenses allowing continuous focusing from infinity to ultra close-ups. Accessories include: bellows attachment, copy and close-up stand with annular lamp, focusable object table, double-sided mirror and groundspikes for outdoor use, photomicrographic attachment, *Kern* Colpograph. Further, we will demonstrate *Rebikoff* color temperature meter for determining exact color temperature of any light source; *Hilba Color Lux* and *Metraphot* incident light and exposure meters; *Cobiwe* opaque and slide projector; *Lindia* snap-in slide mounts; *Omag* pocket microscopes for both indoor (AC current) and outdoor (batteries) use; *Kern* prismatic binocular microscopes for stereoscopic viewing of reinverted image, with wide field of view and ample working space, six different stands and four different lights provide for any practical application; *Kern* binoculars and monoculars with top quality, coated *Kern* lenses and prisms, "featherlight"; *Kern* optical flats for testing flatness of highly polished surfaces; *Kern* Superstroboscope for observing or photographing rapidly occurring phenomena of a periodic or aperiodic nature; and *Kern* apochromatic lenses.

High Voltage Engineering Corporation (Booth 149). High Voltage Engineering Corporation is concerned with the design and manufacture of particle-acceleration equipment for precision research and industrial applications of high-power nuclear radiations. At the HVEC plant in Cambridge, Mass., several Van de Graaf accelerators in the 1–6-million-volt range are currently being constructed for cancer therapy, industrial radiography, radiation chemistry, and nuclear research. In addition, a 50-million-volt electron linear accelerator for medical research is under development. The company's exhibit will demonstrate the versatility of the Van de Graaf acceleration systems. A new, compact, 1-million-volt Van de Graaf radiation source will be described. Scientific and technical representatives will be on hand to discuss radiation research problems with visitors.

Houghton Mifflin Company (Booth 230). Houghton Mifflin will have a display of textbooks and general reference materials in science, mathematics, and related subjects having a wide distribution in secondary schools, colleges, and universities throughout the country.

International Equipment Company (Booth 126). The International Equipment Company will feature the new Model PR-2 Refrigerated Centrifuge and accessories. This new model offers greater capacity, higher speed, lower temperature, and greater versatility than ever before obtainable with this type of centrifuge. The latest models of laboratory centrifuges will also be shown, together with new accessories recently designed including a new line of sealed accessories for centrifuging infectious materials. The international ultra-thin sectioning microtome will also be displayed. This instrument is designed

for cutting sections in the range of 1/40 and 1/20 of a micron.

Ionics, Inc. (Booth 134).

The Kennel Food Supply Company, Inc. (Booth A). The Kennel Food Supply Company, Inc. began to manufacture special animal diets in 1890 and has the honor of being the oldest manufacturer of these products in the U.S. The plant is located on the bank of a picturesque stream in the historical town of Fairfield, Conn.

Many laboratories have experienced trouble with commercial diets due to the manufacturer substituting cheaper ingredients whenever market prices rise. The Kennel Food Supply Company has the reputation of following a proven correct formula—never making a change in the quality of the ingredients or the amount. Laboratories may have any information in regard to ingredients and analysis.

Chim Crackers is one of our outstanding special diets developed by the Yerkes Laboratories of Primate Biology, Orange Park, Fla. We have been making this diet for monkeys and chimpanzees for many years. It is a basic diet except for leafy greens. Chim Crackers are baked fresh on order. All ingredients are of the highest quality obtainable, blended together, and slow-baked over coal fires. They are available in biscuit form and, as we consider size an important factor, these are made $2 \times 4 \times \frac{1}{2}$. Chim Crackers are used by a great many outstanding college, university, and private laboratories, and Kennel Food Supply is very proud that the government agencies use them in feeding their primate colonies.

The Kennel Food Supply Company also makes rat and mouse food, pellets or meal, based on a formula prepared by an outstanding medical research laboratory. These pellets are used by a great many outstanding college, university, private, and government laboratories. Again in the making of these pellets the formula is the same, never changing the high quality of the ingredients, or amount of ingredients.

Of particular interest to the attendance at the Exposition will be the two trained chimpanzees which we will have at our booth on Dec. 28 and 29.

Kontes Glass Company (Booth 10).

E. Leitz, Inc. (Booth 220).

Liberty Mutual Insurance Company (Booth 167). In the 41 years since 1912, Liberty Mutual has become the largest mutual casualty insurance company in the world. Along the way it pioneered many insurance innovations; loss prevention, rehabilitation, claims, and medical methods. Realizing the responsibility of its position, Liberty Mutual has pitted time, money, and research against the dangers of the industrial age. The devices on display at the Exposition of New England Science and Industry are working examples of Liberty Mutual's dedication to a path of "making the world a safer place." Work expends energy. Energy expenditure brings on fatigue. Fatigue causes accidents. These machines, The Performance Indicator and The Differential Flame Oxymeter, were designed to measure work loads and fatigue . . . and reduce accidents.

Little, Brown & Company (Booth 129). Little, Brown and Company extends a hearty and warm welcome to the members of the Association. We hope you have time to visit not only its many historical spots but to browse around the numerous good bookstores located in this city of culture. Little, Brown will have on exhibit not only scientific and medical books of special interest to members but books of general interest concerning Boston to help you make your visit more informative and delightful.

Arthur D. Little, Inc. (Booths 39 and 40). The Mechanical Division of Arthur D. Little, Inc., Cambridge, Mass., will present a display of liquid helium and cryogenic research equipment. The ADL Collins Helium Cryostat, the basic instrument for cryogenic research, can liquefy helium, hydrogen, and other low-boiling gases and can maintain an internal test chamber from normal room temperatures down to 456° below zero F. The ADL Collins Helium Cryostat, an example of the prototype equipment for basic research developed at Arthur D. Little, Inc., has brought the entire field of low-temperature research into the range of every-day investigation and use. Previous to the development of the instrument, phenomena which are known to occur in the neighborhood of absolute zero, such as superconductivity and the spectacular properties of liquid helium, were not actively investigated for useful purposes simply because of the excessive effort required to obtain these low temperatures. Staff members will be in the booth to discuss new developments in cryogenics.

Lynn Chamber of Commerce (Booths 116 and 117).

Macalaster Bicknell Company (Booth 204). The Macalaster Bicknell Company will show standard laboratory apparatus and instruments for which we are New England's foremost dealer. We shall also show a few special items of our own manufacture. And it is our hope that arrangements may be completed in time to have an exhibit of scientific glass blowing.

Josiah Macy, Jr., Foundation (Booth 234). You are cordially invited to visit the display of the Transactions of the Conference sponsored by the Josiah Macy, Jr. Foundation. This year we are presenting the transactions of a new conference on administrative medicine. Also available for your examination are publications on adrenal cortex, aging, biological antioxidants, blood clotting, blood pressure, clinical psychology, cold injury, connective tissues, consciousness, cybernetics, infancy and childhood, liver injury, convalescence, metabolic interrelations, nerve impulse, renal function, and shock and circulatory homeostasis. Elizabeth Fuller and Alfred Patten are at the booth to answer your questions and to explain this new style of medical literature. These books are verbatim reports of meetings in which representatives from professions and specialties relevant to the topic participated in lively and informal discussions of methods, theories, and research plans. Much of the material contained in these transactions is unobtainable elsewhere in the literature. The transactions in their present form 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. In order to make these books available to the greatest number of those interested, the Foundation offers them for sale at cost.

Massachusetts Indemnity Insurance Company (Booth 27). The Massachusetts Indemnity Insurance Company has for many years specialized in unexcelled income protection designed to secure the individual's greatest asset —his *earning power*. Our plans are *noncancellable, guaranteed renewable to age 60 or 65* (policy-holders option), and *incontestable* like life insurance. We will have available for distribution our famous booklet: "*Facts! Is*

your accident and health policy favorable or unfavorable?'' The value of this booklet is its objective analysis of important provisions found in accident and health policies. It's yours for the asking at our exhibit.

G. & C. Merriam Company (Booth 208). The G. & C. Merriam Company's exhibit will display copies of the Merriam-Webster publications listed. *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 1953. *Webster's Dictionary of Synonyms*: listing synonyms, antonyms, and analogous and contrasted words, explaining 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.

Monsanto Chemical Company (Booths 205, 206, and 207). Monsanto will exhibit a gallery of new chemicals which are not in general use in industry. The new compounds will be presented in three-dimensional molecular structures with a list of properties and some suggested uses. The elements in each molecule will be represented by color-coded symbols of a size proportionate to their atomic weights. Approximately forty compounds unexplored by industry will be shown. There will also be an audience participation game emphasizing Monsanto's name and trademark.

National Cancer Institute, U.S. Public Health Service (Booth 18). ''Half of All Cancer Involves Sites Accessible to Direct Examination,'' is a new cancer control exhibit designed to encourage the early diagnosis of cancer. It points out to general practitioners the accessible cancer sites in both sexes and charts the percentages of all cancer occurring in the sites. A three-fold leaflet (Public Health Service Publication No. 324), is a facsimile of the exhibit.

National Geographic Society (Booths 208 and 209). The exhibit of the National Geographic Society will feature the *National Geographic Magazine* and the *Geographic School Bulletins.* Also on display will be maps, books, pictures, and other special educational materials of the Society. An automatic projector will screen a continuous selection of natural color slides. The slides cover National Geographic field assignments and expeditions and were selected from illustrations by staff photographers of the *National Geographic Magazine.*

National Research Corporation, Equipment Division (Booth 105). National Research will exhibit the NRC Vacuum Fusion Gas Analysis apparatus which is used to determine the combined or dissolved gas contents of metals. A wide variety of metals and alloys can be analyzed to determine the amount of oxygen, nitrogen, and hydrogen contained either as combined or dissolved gas, in the range from 1% to approximately 10^{-4}% by weight. The oxygen and hydrogen content of titanium is reported within the same range of accuracy as for other metals. The apparatus incorporates the best features and techniques reported in the literature or known to our laboratory and has been employed for some time in connection with our own metallurgical research activities. The Model 511 ''Alphatron'' vacuum gage will also be shown; this instrument measures absolute pressures from atmospheric down to 0.0001 mm Hg. NRC will also show several of its line of diffusion pumps. On exhibit will be several smaller oil diffusion pumps and a new glass pump, using mercury as the pumping fluid, which is of particular utility for laboratory vacuum systems.

National Science Teachers Association (Booth 221). Highlighting this exhibit will be NSTA's program to encourage closer cooperation between science teachers and industrial, academic, and research scientists. The exhibit will tell the story of the NSTA Packet Service, the Business-Industry Section, *The Science Teacher,* and the Future Scientists of American Foundation. The 1954 program of the Foundation will be featured. This program includes a decisive attack on the problems of identifying, attracting, and keeping more capable boys and girls in the paths that can lead to engineering and scientific careers. Visitors will receive complimentary copies of *Encouraging Future Scientists: The Situation* and *Encouraging Future Scientists: Available Materials and Services.*

National Society for Medical Research (Booth 216). The exhibit of the National Society for Medical Research consists of three panels, each 3′ × 4′, forming a unified display. Both text and illustrations apply to the problem of meeting the threat of antivivisectionism. The exhibit tells why the intivivisectionists are a threat to medical research, why medical research is important, and what must be done to meet the antivivisectionist threat. Keynote of the exhibit is the NSMR logohead, prominently displayed in the upper right hand corner of the exhibit, ''Study Life—to Protect Life.''

Naval Ordnance Laboratory (Booth 21). The Naval Ordnance Laboratory, White Oak, Silver Spring, Md., is a primary ordnance research and development laboratory operating under the Navy's Bureau of Ordnance. NOL's exhibit will show the work of its Magnetic Materials Laboratory, a large and unique installation devoted to the discovery and large scale development of new and improved magnetic materials. Magnetic materials are indispensable to modern living. The telephone, radio, television, electric motors, transformers—an almost infinite array of electrical and electronic equipment, including the very generators which produce electricity—would not be possible without them. NOL's laboratory has developed several magnetic alloys which American industry utilizes. Notable among these are Orthonol, now extensively used commercially in magnetic control amplifiers; Bismanol, recently placed in production; and Alfenol, expected to go into production soon. These three are displayed in the exhibit. A spectator-operated model Navy gun turret, controlled by magnetic amplifiers using Orthonol, will be demonstrated. Magnetic amplifier development, suitable for civilian as well as military application, is another important activity of NOL's Magnetic Materials Laboratory.

Naval Research Laboratory (Booth 22). A working model of its recently completed 600-in. radio telescope highlights the exhibit of the Naval Research Laboratory of the Office of Naval Research. This unique instrument has a higher resolving power than any radio telescope in existence today or under construction. The Laboratory's

program in radio astronomy, which was begun in 1946, is concerned with the study of the strength, direction, and variations in radio emissions from the sun, moon, and the galaxy. The objective of this program is to apply to astronomical problems the new and powerful techniques of radio astronomy. By this means, new knowledge has been obtained on the nature of the sun's atmosphere and the structure of the galaxy, and unexpected new objects have been discovered both in and beyond our galaxy. Such information has already had practical application in improving long-range radio communication, a problem of concern to industry as well as to the Armed Forces.

Personal Photo Service, Inc. (Booth 32). The exhibit of the Personal Photo Service will have to do with photography in science. The emphasis is placed on the use of high speed lighting as applied to the many problems of the allied fields of science and industry. There will also be displayed new equipment which will be of interest to all. Our organization is prepared to sell and service all of the allied scientific fields in the normal and more technical applications.

Philosophical Library (Booth 215).

Phipps & Bird, Inc. (Booth 101). For the latest in tools for the biophysicist, you cannot afford to miss Phipps and Bird's exhibit. Our research department has been pretty busy since our last meeting, and you will be sure to find many new and interesting items to assist you in your laboratory. Perhaps you have some special instruments you wish to have built. If so, stop by Phipps and Bird's booth and discuss these with one of our engineers.

Polaroid Corporation (Booths 23, 24, 25, and 26). Polaroid Corporation's exhibit will feature applications of polarized light, geometrical optics, and scientific and industrial applications of the picture-in-a-minute process. As a special attraction, 60-sec. pictures will be taken of visitors with the Polaroid Land Camera.

Potomac River Naval Command, Board of Examiners for Scientific and Technical Personnel (Booth 20). This Board of Examiners which coordinates recruiting for all scientific and technical personnel for the forty or more naval activities located in the area around and adjacent to Washington, D. C., the Potomac River, and the Chesapeake Bay, will maintain a sound slide projector depicting some of the scientific programs of the major naval laboratories of the Command. Activities to be illustrated include the David Taylor Model Basin, Naval Air Test Center, Naval Gun Factory, Naval Observatory, Naval Ordnance Laboratory, Naval Photographic Center, Naval Powder Factory, Naval Proving Ground, and the Naval Research Laboratory. Two of the laboratories are maintaining special exhibits at the Exposition.

The Radio Shack (Booth 125).

Rawson Electrical Instrument Company (Booth 222). This company makes a specialty of highly accurate and highly sensitive electrical meters for laboratory use. Most of its output consists of special custom-built instruments. On exhibit will be d'Arsonval DC microammeters and millivoltmeters, multimeters, meters for AC use with internal vacuum thermocouples giving RMS readings. The above high quality meters can be used for general laboratory measurements, or for standards to calibrate meters of lower accuracies. For magnetic measurements, a pivoted model of the Grassot Fluxmeter will be shown, and also the new Rotating-Coil Gaussmeter, which reads magnetic field intensities from a few gausses to over 100,000 gausses. An electrostatic voltmeter will be on display with a demonstration to show its ability to measure static charges. This is possible because of the very low current drain. It will also measure RMS AC- or DC-voltages. An unusual type of wire-wound potentiometer will be shown which generates both sine wave and cosine wave output voltages when the shaft is rotated.

The Rayoscope Company (Booth 11). The Rayoscope is a rather new and efficient micro-projector and its many uses will be demonstrated. Special emphasis will be placed on projection of living specimens for long periods of time on a screen at a distance so that groups of observers can see simultaneously. Customers are urged to bring their own specimen slides which they would like to project to large classes. You will thus be given an opportunity to make your own test as to effectiveness of micro-projection.

Raytheon Manufacturing Company (Booths 112 and 113). Raytheon is noted as the leading producer of microwave tubes, particularly magnetrons. A new type tube is exhibited, the grid magnetron, as well as recently introduced tubes of superior performance; a CW magnetron used in Raytheon's microwave television relay equipment, and a magnetron specifically designed for microwave cooking and heating of foods. Transistors, until recently a laboratory creation, were first put into mass production in Raytheon factories. These and other germanium products are featured, together with present and anticipated applications. Raytheon transformer engineers have developed various types of special purpose transformers. Those of particular interest are shown; these are recently introduced toroidal coils molded in plastic, and ferrite toroid pulse transformers. Also shown are new techniques in hermetic sealing of transformers. A servo amplifier using the new toroids and transistors is displayed. Of interest to computer people is the magnetic shift register, a data storage device with various applications. Technical papers and information are available. The exhibit is attended by members of Raytheon's scientific and engineering staff.

W. B. Saunders Company (Booth 12). The W. B. Saunders Company cordially invites you 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. Especially featured will be the following new books: Krueger, *Microbiology*; Glass and Hamrun, *Anatomy and Physiology Laboratory Manual*; Luder, Vernon, and Suffanti, *General Chemistry*; Routh, *20th Century Chemistry*; and Braun, *Bacterial Genetics*. You will be interested also in the following new editions: Todd, Sanford, and Wells, *Clinical Diagnosis; American Pocket Medical Dictionary*; Frobisher, *Fundamentals of Bacteriology*. On display also will be our complete list of titles in the science field. Saunders' representatives present are Tyler Buchenau, James P. Hughes, and David Miller.

The Science Library (Booths 224, 225, and 226). 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
Academic Press, Inc.
Addison-Wesley Press, Inc.
American Book Company
Annual Reviews, Inc.
Appleton-Century-Crofts, Inc.
Author's Press
Basic Books Publishing Co., Inc.
Burgess Publishing Company
Cambridge University Press
Columbia University Press
Thomas Y. Crowell Company
E. P. Dutton & Co., Inc.
Elsevier Press, Inc.
Emerson Books, Inc.
Exposition Press Inc.
Folkways Records & Service Corp.
Harvard University Press
D. C. Heath and Company
Henry Holt and Company
Iowa State College Press
Lea & Febiger
The Macmillan Company
McGraw-Hill Book Company
Prentice-Hall, Inc.
Reinhold Publishing Corporation
Rinehart & Company, Inc.
Scott, Foresman and Company
Silver Burdett Company
University of California Press
University of Florida Press
University of Minnesota Press
University of New Mexico Press
University of Pennsylvania Press
University of Pittsburgh Press
Yale University Press

Special Libraries Association, Boston Chapter (Booth 227). The Boston Chapter of the Special Libraries Association will exhibit materials to show what a special library is and what it does. The Science-Technology Division of the Chapter will have a particular part in the exhibit, and will show how such libraries can assist scientists and other research personnel.

Arthur H. Thomas Company (Booth 228). Arthur H. Thomas Company will feature their new paper electrophoresis apparatus for serum protein separation; a new type Van Slyke manometric apparatus will be demonstrated; and will also show a novel design of volumetric respirometer as suggested by Sholander and co-workers. We will also have on display an improved apparatus for tissue mincing and homogenizing in small quantities, and will have in operation the latest method of electrical recording using a simplified electronic power source and electrosensitive paper for use in kymographs. Various items of polyethylene laboratory ware, and other new miscellaneous apparatus will also be on display.

Tracerlab, Inc. (Booth 213). Tracerlab will exhibit a complete line of nuclear instruments, including a new scintillation detector, scintillation sample changer, and a wide range of laboratory accessories. Also on display will be several new scalers, including the superscaler, which features plug-in units such as the Plug-In Pulse Amplifier, which make it the most versatile scaler in production today.

United Scientific Co. (Booth 133). The United Scientific Company will have on display a representative selection of Unitron microscopes and astronomical telescopes. Members of the AAAS will have a first-hand opportunity to examine and test these instruments and verify their outstanding quality, performance, and value. Of particular interest are the new Unitron phase microscopes, available in four models and four contrasts. These instruments are of revolutionary design and are priced so low that even the student laboratory can afford to use the powerful methods of phase microscopy. A student model magnifying 30-600X, which may also be used for ordinary bright field microscopy, is available for as little as $99. A research model magnifying 50-1500X, which permits continuous transition from bright field to phase contrast, sells for $265. Another new instrument which will be shown is the Unitron universal camera microscope and metallograph. This versatile laboratory tool provides for observation, projection, photomicrography, and measurement of both transparent and opaque specimens under bright field, dark field, and polarized illumination. Its remarkably low price is only $940, complete with accessories. Other Unitron microscopes on exhibit will include laboratory and medical, stereoscopic, metallurgical, and student models, as well as photomicrographic accessories. Literature will be available.

Vectron, Inc. (Booth 114).

W. M. Welch Manufacturing Company (Booths 201 and 202). The W. M. Welch Manufacturing Company will display laboratory equipment for physics, chemistry, biology, botany, and zoology laboratories; vacuum pumps, meters, balances, E/M apparatus, electronics teaching devices, triode, power supply, transmitter, receiver thyatron, film loops for teaching wave motion, atomic structure demonstrations; models (anatomical, zoological, botanical); charts and sets of charts for teaching physics, chemistry, biology, and physiology; the Densichron Densitometer, Dick-Stevens Hemoglobinometer and Colorimeter.