own sake but for its reinforcement of other topics. The following active approaches have been used in a large class (400 students) to sufficient advantage to encourage further attempts. First, we presented justification for our avoidance of the teleological, animistic, and anthropomorphic viewpoints, as follows.

1) When mechanistic explanations are available, teleology and its allies violate the principle of parsimony. (Pointing this out is one of the easiest means of elucidating the application of Occam's razor.)

2) Teleological and similar elements of explanations are probably never heuristic in the natural sciences. (We used this point to reinforce discussion of the criteria of a good theory).

3) Questions formulated in teleological and similar styles are "meaningless" in the sense that they are not susceptible of scientific investigation, whereas restatement in rigorously mechanistic or operational terms will often indicate the means of attacking the problem. (Substitute *what causes* in questions that begin with *why*).

To pursue this active approach, we attacked textbook statements, some of which are quoted in this article. Sometimes passages were dissected in class; others appeared in examination questions. This was disconcerting to some students, who found it unorthodox to challenge the printed word. Since rejection of the method of authority is often taught as a feature of the scientific attitude, we feel that the technique was valuable.

It is realized that some will consider such techniques to be distractions from what the author or lecturer is trying to teach. Indeed, the whole matter may be dismissed as a disproportionate concern with words at the expense of course content. But what is the lecturer trying to teach? What should be the content of science courses which, usually, purport to satisfy the objectives of a liberal-arts curriculum? In view of the differences between the traditional content of physics and chemistry and biology, it seems unreasonable to claim that these different contents are equivalent for satisfying liberal-arts requirements. Rather, we should reexamine one of the platitudes—"teach them how to think." If this is what the lecturer hopes to teach, then an occasional distraction from the factual material is not only justified, it is essential.

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AAAS Washington Meeting

Raymond L. Taylor

The preliminary announcement of the Seventh Washington Meeting [*Science* **127**, 1246 (23 May 1958)], which will be held from 26–31 December, inclusive, has indicated the scope of the programs of the AAAS as a whole, the 18 sections, and of the nearly 100 participating organizations.

The synopses of the programs, which began to appear in *Science* with the 7 November issue and are concluded on page 1438, have provided additional information—but only the General Program-Directory, which will reach advance registrants by first-class mail in the next day or so, can furnish a full appreciation of the number and quality of the more than 300 sessions. The editorial on page 1391 points out a few of the highlights. It is manifest that this year's 125th annual meeting of the Association will be particularly interesting and significant.

The Annual Exposition of Science and Industry, the largest and most varied in recent years; the unusual number of carefully selected, prize-winning foreign scientific films; the first demonstration of a new, much improved, closed-circuit, color television system; the special events for women—any one of these might make a visit to Washington worthwhile—merit special consideration. There are, however, programs of interest to specialists in all the principal disciplines, strong interdisciplinary symposia, and a number of programs of concern to all scientists. A conspectus of these events follows.

AAAS 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.

AAAS Presidential Address; 28 Dec., evening; Wallace R. Brode, science adviser, Department of State, and president of the AAAS, presiding. "Fifty years of medical genetics," by Laurence H. Snyder, president, University of Hawaii, and retiring president of the AAAS. Preceding the address, Leonard Carmichael, secretary of the Smithsonian Institution and general chairman of the Washington meeting, will speak briefly. Following the address there will be an informal AAAS presidential reception in the ballroom and adjacent rooms of the Sheraton-Park Hotel. All registrants and members of the local committees are cordially invited to attend.

Joint Annual Address of the Society of the Sigma Xi and the United Chapters of Phi Beta Kappa; 29 Dec., evening. "Science and public policy," James R. Killian, Jr., special assistant to the Presi-

dent for science and technology. Wallace R. Brode, president, will represent the AAAS.

Annual Lecture and Film of the National Geographic Society; 30 Dec., evening. "Winter at the South Pole," Paul A. Siple, scientific adviser, Office of the Chief of Research and Development, U.S. Army. Paul E. Klopsteg, president-elect, will represent the AAAS.

Religious Events

Adas Israel Congregation. 27 Dec., morning. "Science as a tool for human betterment," Maurice Shapiro, U.S. Naval Research Laboratory.

Washington Cathedral. 28 Dec., morning. Guest sermon by Paul Johannes Tillich, Harvard University. A portion of the cathedral will be reserved until 10:50 for visiting scientists wearing the Convention Badge.

St. Matthew's Cathedral. Solemn High Mass, Most Reverend Patrick A. O'Boyle, Archbishop of Washington, presiding. "Ideals and Idols in Scientific Progress," Right Reverend Monsignor William J. McDonald, Catholic University of America.

Luncheon and Business Meeting of the Albertus Magnus Guild; 28 Dec., noon. Georgetown University School of Nursing dining room; Eugene M. K. Geiling, University of Chicago, presiding.

Washington Cathedral, 28 Dec., afternoon. Evensong and Musical Service; Seven Lessons and Carols.

AAAS General Symposium

At a joint meeting in the spring of 1956, the Committee on AAAS Meetings and the secretaries of the AAAS sections decided that at each AAAS annual meeting there should be one or more general sessions for the Association as a whole. The title "Moving Frontiers of Science" was adopted for these sessions, which consist of reports of research trends and findings of such broad nature that they are of concern to many branches of science.

Comparative Patterns of Scientific Organization. Part I, 26 Dec., evening. Wallace R. Brode will preside. "Organization of Scientific Activities in the United Kingdom," E. S. Hiscocks, director of the United Kingdom Scientific Mission, Washington, D.C.; "Organization of Scientific Activities in Norway," Robert Major, director, Royal Norwegian Council for Scientific and Industrial Research, Oslo. Part II, 27 Dec., afternoon. Wallace R. Brode will preside. "Organization of Scientific Activities in Canada," B. G. Ballard, vice president, National Research Council of Canada; "Comparisons with the Organization of Scientific Activities in the United States, Don K. Price, dean, Graduate School of Public Administration, Harvard University; Discussion by participants.

AAAS General Sessions

Social Aspects of Science. The AAAS Committee on Social Aspects of Science was authorized at the New York Council Meeting of the AAAS in 1956. It grew out of an Interim Committee authorized the previous year, under the chairmanship of Ward Pigman of the University of Alabama Medical Center. Members of the committee are: Chauncey D. Leake, chairman; T. C. Byerly; Barry Commoner; H. Jack Geiger; Lawrence Kubie; Margaret Mead; Frank W. Notestein; Ward Pigman; Stuart A. Rice; David Rutstein; Henry D. Smyth; J. J. Spengler; Wallace R. Brode, *ex officio;* Paul E. Klopsteg, *ex officio;* Laurence H. Snyder, *ex officio*; Dael Wolfle, *ex officio.*

"Perspectives in our National Medical Research Program," 27 Dec., morning. Symposium arranged by Chauncey D. Leake, who will preside. Speakers: Stanhope Bayne-Jones, U.S. Department of Health, Education, and Welfare; Francis Boyer, Smith, Kline & French Laboratories, Philadelphia, Pa.; Hugh H. Hussey, Georgetown University School of Medicine; Willard C. Rappleye, Josiah Macy Jr. Foundation, New York; James A. Shannon, National Institutes of Health.

Science and Mathematics. The AAAS Cooperative Committee on the Teaching of Science and Mathematics was established in 1941 by representatives of several scientific societies to work on educational problems whose solution can be obtained better by cooperative action than by any single scientific group working alone.

Session; 28 Dec., morning. J. W. Buchta, chairman of the committee, will preside. "Report of the Science Teaching Improvement Program and Future Plans," John R. Mayor, AAAS. Panel report, "Study on the Use of Science Counselors." Participants: Wayne Taylor; John A. Brown; Clarence Diebel; H. Seymour Fowler; John W. Gustad; Alan Humphreys; F. L. Nicolai; Oscar Schaaf; John Wagner.

Washington Academy of Sciences. Symposium: "Extramural Science Programs of the Federal Government"; arranged by a committee, George W. Irving, Jr., chairman; 28 Dec.; A. T. McPherson, National Bureau of Standards, presiding. Papers by Robert B. Brode, National Science Foundation; C. J. Van Slyke, National Institutes of Health; Byron T. Shaw, U.S. Department of Agriculture; George D. Lukes, U.S. Department of Defense; Charles L. Dunham, U.S. Atomic Energy Commission; and Ira H. Abbott, National Aeronautics and Space Administration.

Academy Conference. Panel discussion: "The Academy Movement—Yesterday, Today, and Tomorrow"; 28 Dec.; A. M. Winchester, Stetson University, presiding. Papers by C. L. Baker, Southwestern College at Memphis; J. Teague Self, University of Oklahoma; Ralph W. Dexter, Kent State University; and Paul B. Sears, Yale University. Panel members, Foley F. Smith, Virginia Academy of Science; Robert C. Miller, California Academy of Sciences; E. Ruffin Jones, Jr., University of Florida; and Clarence Lindahl, Iowa State College.

Session on Junior Academies: 28 Dec.; Elnore Stoldt, Jacksonville, Ill., presiding. Paper by H. Neil Hardy, New Lenox, Ill., followed by a panel discussion: "Current Activities and Problems of Junior Academies of Science"; Robert C. Miller, moderator; panel members, Ted F. Andrews, Kansas State Teachers College; Harry J. Bennett, Louisiana State University; Clarence H. Lindahl; Clyde T. Reed, University of Tampa; Karlem Riess, Tulane University; and James A. Rutledge, University of Nebraska.

Dinner and presidential address: "A New Day for Science?" by John A. Yarbrough, Meredith College; 28 Dec.; Thelma C. Heatwole, presiding.

Twelfth Annual Junior Scientists Assembly. This year the Junior Scientists Assembly, sponsored by the Academy Conference, has invited many selected students from the Washington area, who are interested in science as a career, to a program especially planned for them. The program has been arranged by a committee under the chairmanship of Keith C. Johnson, department of science, District of Columbia Public Schools. There will be four panel discussions on science and mathematics education in college and high school; 29 and 30 Dec. Annual Christmas lectures by J. R. Zacharias, Massachusetts Institute of Technology: I, "The Size of Atoms," 29 Dec.; II, "The Pressure of Light," 30 Dec.

Color Television Programs

Closed-circuit color television on conventional receivers has been shown at various medical and other meetings for some years. A new, improved closed-circuit television system—featuring large screen projection with superior color and definition—will be demonstrated publicly for the first time at any scientific meeting, through the cooperation of CIBA Pharmaceutical Products, Inc.

Seven sections of the Association have collaborated on four 1-hour programs with teaching content as well as intrinsic

entertainment value. Those interested in the technical details of the "Ediphor" system, invented in 1939 and only recently perfected, may secure information at the CIBA booths in the Annual Exposition of Science and Industry.

Program I. 27 Dec., afternoon; jointly sponsored by AAAS Sections B-Physics, C-Chemistry, and E-Geology and Geography. Arranged by a committee, Deane B. Judd, National Bureau of Standards, chairman. Subjects covered: refraction of light; production of spectra; crystals; polarized light; fluorescence; color vision and color blindness; experiments with free radicals.

Program II. 28 Dec., afternoon; jointly sponsored by AAAS Sections F-Zoological Sciences and G-Botanical Sciences. Arranged by a subcommittee of the AIBS Committee on Education and Professional Recruitment, H. Burr Roney, University of Houston, chairman. Demonstration of Growth, Septation, and Cytoplasmic streaming in *Monilia* (*Neurospora*) *sitophila,* Carroll Cox, University of Maryland. A Survey of *Drosophila* Genetics, with Demonstrations of Salivary Gland Chromosome Preparation Technique, and Discussion of the Probable Relations between DNA, Nucleoprotein Structure, and Salivary Chromosomes, Lewis Levine, College of the City of New York. Demonstrations of Microsurgical Procedures on Protozoa, particularly *Stentor*: Examples of Induced Fission, Parabiotic Grafting, Nuclear Transplants, etc., Paul B. Weisz, Brown University.

Program III. 29 Dec., afternoon; sponsored by AAAS Section N-Medical Sciences. Arranged by the officers of the section and Andrew G. Morrow, National Heart Institute, Bethesda, Md. This program, supplemental to the section's symposium, is restricted to those with professional interests who have applied for, and received, a card of admission.

Program IV. 30 Dec., afternoon; sponsored by AAAS Section N-Medical Sciences. Arranged by the officers of the section and Andrew G. Morrow. This program, supplemental to the section's symposium, is restricted to those with professional interests who have applied for, and received, a card of admission.

AAAS Science Theatre

The AAAS Science Theatre, a permanent feature of the Association's annual meeting, presents each year a selection of the latest domestic and foreign scientific films at intervals throughout the meeting period. Admission is restricted to those who wear the Convention Badge. The Theatre will be in the Exhibit Hall of the Sheraton-Park Hotel. The Association is greatly indebted to those who made and lent these films.

Hours of the Science Theatre: 27–28 Dec., 10 A.M. to 2 P.M. and 2 to 6 P.M.; 29 Dec., 9 A.M. to 1 P.M. and 1 to 5 P.M.; 30 Dec., 11 A.M. to 3 P.M.

Saturday Morning, 27 Dec.

Human Gastric Function. Presented by Smith Kline & French Laboratories,

Ultimate Structure. Produced by Philips Electronics.

Stimuli Releasing Sexual Behaviour of Domestic Turkeys. Produced by Martin Schein and E. B. Hale, Psychological Cinema Register, Pennsylvania State University.

Living in a Reversed World. Produced by Theodor Erismann and Ivo Konler, Department for Experimental Psychology, University of Innsbruck, Austria.

Mystery of Time. Produced by Moody Institute of Science.

High Energy Radiations for Mankind. Produced by High Voltage Engineering Corporation.

Dynamics of Phagocytosis: the Interaction between Group A Streptococci and Human Neutrophils in vitro. Produced by Leo L. Leveridge, Medical Film Department, Pfizer Laboratories, and Armine T. Wilson, Alfred I. duPont Institute, with Production Services by Campus Film Productions.

The Human Nose—What Makes It Different? Produced by Medical Film Guild.

The World of Microbes. Produced by Tokyo Cinema Co., Tokyo, Japan.

Saturday Afternoon, 27 Dec.

Comparative Micro-Cinematographic Study of Results Obtained in Tissue Culture Investigations: Positive Anoptral and Nomarski Interference Phase Contrast. Produced by Robineaux, Hospital Saint-Antoine, Paris, France.

Uranium. Produced by Films Division Government of India, Bombay.

Cycle of Life. Produced by Foundation Films and Science, University Films, Utrecht, Netherlands.

Analysis of Reactions between Antibodies and Living Cells. Produced by K. G. Moreman, E. T. Ambrose, G. C. Easty, and D. M. Easty, Chester Beatty Cancer Research Institute, London, England.

Trapped Free Radicals. Produced by National Bureau of Standards.

Paths of Steel. Produced by United States Steel Corporation.

Reaching for the Stars. Produced by Australian News and Information Film Division, Commonwealth Department of the Interior.

Our Sun in Action. Produced by Sacramento Peak Observatory of the Geophysics Research Directorate, Air Force Cambridge Research Center.

Music from Oil Drums. Produced by Toshi and Peter Seeger.

The Kinetics and Development of Embryonic Organs in vitro. Produced by E. Wolf, College de France, Paris.

Aero Medical Research. Produced by the U.S. Air Force.

Submarine Medicine. Produced by Medical Horizons, Ciba Pharmaceutical Products.

Sunday Morning, 28 Dec.

The Earth Is Born. Produced by Transfilm.

Egg Development and Metamorphosis of Calliphora Erythrocytes. Produced by Dr. Ing. Wolf, Institute für den Wissenschaftlichen Film, Göttingen, Germany.

Oil-Bearing Palm. Produced by Gerard de Boe, Watermael-Bruxelles.

Between the Tides. Produced by British Transport Films, London.

At the Doorstep toward Life. Produced by Veb-Defa Studio für Popularwissenschaftliche Film, Potsdam-Babelsberg, Germany.

Faster than Sound. Produced by Veb-Defa Studio für Popularwissenschaftliche Film.

Cradles. Produced by Studios Budapest, Hungary.

Sea Urchins. Produced by J. Painleve and G. Hamon, Paris.

The Work of the Heart in the Sea-Trout Embryo. Produced by Office of Distribution of Films, Warsaw, Poland.

Ultrasonic Processes in Schlieren Studies. Produced by Institute für Mikrobiologie und Experimentelle Therapie, Jena, Germany.

Astronomical and Meteorological Phenomena. Institute of Geophysic Application, Academy of Sciences of the USSR, Moscow.

Biological Action of Ionising Radiation upon Microorganisms. Studio of Moscow of Science Films, Moscow.

Colorphotography. Produced by Veb-Defa Studio für Popularwissenschaftliche Film.

Sunday Afternoon, 28 Dec.

Same as Saturday morning, 27 Dec.

Monday Morning, 29 Dec.

Same as Saturday afternoon, 27 Dec.

Monday Afternoon, 29 Dec.

Same as Sunday morning, 28 Dec.

Tuesday, 30 Dec.

The World of Microbes.

Capillary Vessels in Surfaces of Skin and Organs. Produced by Dr. Ing. Wolf, Institute für den Wissenschaftlichen Film.

The Kinetics and Development of Embryonic Organs in vitro.

Dynamics of Phagocytosis: the Interaction between Group A Streptococci and Human Neutrophils in vitro.

The Earth Is Born.

Sea Urchins.

Between the Tides.

Glass. Produced by Ministry of Education, Arts, and Sciences, The Hague, Netherlands.

Lighting Systems in Microscopy. Produced by J. Dragesco, Paris, France.

Whooping Crane. Produced by Office of Information, U.S. Fish and Wildlife Service.

Symposia

Mathematics. "Mathematics in the Social Sciences"; "The Problem of Formulating a Problem"; "Adventures with Electronic Digital Computers."

Physics. "Reviews of Special Topics in Physics"; "Satellite Mechanics and Space Explorations"; "Upper Atmosphere Research and Reentry Mechanics"; "Space Vehicle Design"; "Guidance, Control, and Communications"; "Review of Recent Developments in Radar Meteorology"; "Numerical Weather Prediction."

Chemistry. "Kinetics of Gas Phase Reactions"; "Frozen Free Radicals" (two sessions); "Chemical Effects of High Energy Radiation" (three sessions); "Biochemical Studies of Schizophrenia."

Geology and Geography." "History of American Geology" (three sessions); "Experimental Geology"; "Geographic Research—Broadening Horizons"; "The Saint Lawrence Seaway."

Zoological Sciences. "Vertebrate Zoology" (four sessions); "Arthropod Physiology" (five sessions); "Linnaeus and Nomenclatorial Codes"; "Basic Concepts of Systematic Order"; "Systematics: Present and Future."

Biological Sciences. "Some Unsolved Problems in Biology, 1958: I, Plant and Animal Behavior; II, Differentiation"; "Integrative Mechanisms in Biology"; "Mathematical Models in Biology"; "Calcification in Biological Systems"; "Microbiology in Outer Space Research."

Botanical Sciences. "The Physiology of Algae."

Anthropology. "Anthropological Research in Government."

Psychology. "Early Experience and Imprinting"; "Psychopharmacology: Behavior Profiles and Drug Action"; "The Human as a Measuring Instrument"; "How Phylogenetically Older Parts of the Brain Relate to Behavior"; "The Future of Contemporary Learning Theories."

Social and Economic Sciences. "Major Problems of the American Economy"; "Research Problems in the Social Sciences" (two sessions); "Political Science Roundtable"; "Controversial Areas in Twentieth Century Criminology" (four sessions); "Sociological Studies in Mental Disorder"; "Demographic and Sociological Aspects of Scientific Manpower"; "Statistical Methods in the 1960 Census"; "Some Developments in Statistical Economics."

History and Philosophy of Science. "Studies in Pre-Darwinian Evolution"; "Problems and Studies in 19th Century Science"; "Population Dynamics" (two sessions).

Engineering. "National and International Aspects of Systems of Units in Coordinated Disciplines of Science and Technology" (four sessions); "Photogrammetry in Science" (two sessions); "Instrumentation of Precision Measurements."

Medical Sciences. "Congenital Heart Disease" (four sessions); "Premedical and Predental Education"; "Man and His Environment in Space" (two sessions); "Hallucinations" (four sessions).

Pharmacy. "Hospital Pharmacist of the Future."

Agriculture. "Water and Agriculture" (four sessions).

Industrial Science. "Industrial Science Today."

Science in General. "Participation of Women in Science"; "Communicating Science in Translations"; "Communicating Science in Three Dimensions"; "Communicating Science in Specialized Libraries"; "The Employment Situation for Scientists and Engineers in 1959" (two sessions); "International Geophysical Year Results: I, Arctic and Antarctic; II, Rockets and Satellites; III, Meteorology, Oceanography, Glaciology" (three sessions).

Additional information on the programs planned in industrial science, education, and science in general is published on page 1438.

AAAS Business Sessions

The Board of Directors of the Association will meet in a private suite in the Sheraton-Park Hotel, at 9:30 A.M. Saturday, 27 Dec., and again at the same hour on Sunday, 28 Dec.

The Council of the Association will meet Saturday afternoon, 27 Dec., at 4 P.M., in the Continental room of the Sheraton-Park Hotel. A second session of the Council is scheduled for Tuesday morning, 30 Dec., at 9 A.M., in the same room. Subjects to be considered by the Council (in addition to the agenda prepared) usually are first brought before the Board of Directors through the Executive Officer. During the meeting, communications for the Board of Directors should be submitted in writing and left at the mail desk of the Sheraton-Park Hotel. They should be addressed to Dael Wolfle.

There will be a joint luncheon and business meeting of all Section Officers and the Committee on AAAS Meetings on Tuesday, 30 Dec., at 12:30 P.M. in a private suite at the Sheraton-Park Hotel. Dael Wolfle and Raymond L. Taylor, cochairmen.

Hotel Headquarters

The Sheraton-Park Hotel 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 the Franklin Room just off 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 also all in the Sheraton-Park Hotel.

The headquarters of the 18 sections and 93 participating societies appeared in *Science,* 18 July.

Registration

Main Registration-Information Center. The AAAS Main Registration-Information Center is located in the lobby of the Sheraton-Park Hotel. It will be open as follows: 26 Dec., 9 A.M. to 9 P.M.; 27–30 Dec., 8 A.M. to 8 P.M., with the exception of Monday, 29 Dec., when it will remain open till 11 P.M. to accommodate nonregistrants who wish to attend the AAAS Smoker, and Tuesday, 30 Dec., when it will close at 6 P.M.

Badges and General Programs may also be obtained at the supplementary registration desks, but supplementary literature, maps, and the like will be available only at the Main Registration Center. Advance registrants (who have received programs and badges prior to the meeting) are urged to visit the Main Registration Center at any convenient time to obtain these items.

Supplementary Registration Desks. For the convenience of those attending the 125th meeting, there are four supplementary hotel registration desks, as follows: Shoreham, 26 Dec., 10 A.M. to 9 P.M.; 27 Dec., 8 A.M. to 8 P.M.; 28 Dec., 9 A.M. to 8 P.M.; 29 Dec., 9 A.M. to 5 P.M.; Statler, 26 Dec., 1 P.M. to 9 P.M.; 27 Dec., 8 A.M. to 8 P.M.; 28 Dec., 9 A.M. to 8 P.M.; 29 Dec., 9 A.M. to 5 P.M. Willard, 27 Dec., 1 P.M. to 9 P.M.; 28 Dec., 8 A.M. to 8 P.M.; 29 Dec., 8 A.M. to 6 P.M. Dupont Plaza, 28 Dec, 9 A.M. to 8 P.M.; 29 Dec., 8 A.M. to 6 P.M.

Guests at the Washington Hotel will find the Willard convenient for registration; guests at the Roosevelt or Windsor Park should register at the Sheraton-Park; guests at the Sheraton-Carlton will find the Statler convenient.

Registration Fee. The AAAS registration fee, which, intentionally, has been kept at a minimum, is $3 for all; a spouse or child not wishing a separate program may register for $1, if registering at the same time. Each registrant receives a receipt, a Convention Badge, and the Gen-

eral Program-Directory—the only publication with the programs of the 18 AAAS Sections and of the 92 participating organizations. Any person who purchases an advance copy of the General Program-Directory but does 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 Center, or at one of the four supplemenary registration desks, after which he will receive his Convention Badge and the privileges that go with it.

AAAS Convention Badge. Every thoughtful person will wish to register and thus pay his share of the expenses of the meeting. The AAAS Convention Badge indicates that you are a complete participant in this 125th Convention of the Association. The badge should be worn throughout the meeting because it reminds others to register; it is needed for admission to the AAAS Science Theatre, the AAAS Smoker, and the reception that follows the presidential address; and it helps your friends to find you.

Visible Directory of Registrants. The Visible Directory of Registrants, for the maximum convenience of all, is located in the foyer near the Annual Exposition of Science and Industry. It is open at all times. The registration cards of all registrants are placed in the Visible Directory as soon as possible after registration. The arrangement is alphabetical. The cards of advance registrants are *completely* alphabetized and typed since they are posted in Washington prior to the meeting; all other registration cards are filed to the second or third letter of the surname (*Ba, Be,* and so forth). 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 the meeting.

Mail, Telegrams, and Messages. Mail and telegrams addressed in care of the AAAS will be held at the AAAS Office in the Madison suite, off the lobby of the Sheraton-Park. Efforts 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 of those 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, either during preceding sessions of that society, at the AAAS Information Center, or at supplementary Registration Desks.

Special Events for Women

Several special events for women have been arranged by the Committee on Women's Events (Mrs. Allen T. Waterman, *chairman*).

Registration. Be sure to register—or to have your husband register for you—and to get your Convention Badge.

Women's Information Center. This is located near the Main Registration in the lobby of the Sheraton-Park Hotel. Here you can find information and literature describing the events planned for the wives of members. Buy your ticket for the Ladies' Luncheon here.

Coffee Hour: 9:30 to 11 A.M., Friday and Saturday, 26 and 27 Dec., near the Information Center at the Sheraton-Park. No charge for the coffee.

Sunday, 28 Dec. Note the special service at Washington Cathedral at 11 A.M. and other services described under "Religious Events."

Monday, 29 Dec., 10 A.M. Special introduction to the Smithsonian Institution, at the Natural History Building at 10th Street and Constitution Avenue, in the auditorium. Leonard Carmichael, secretary of the Smithsonian Institution and general chairman of this meeting of the AAAS, will welcome the wives of members to Washington and to the Smithsonian. Tour of the institution. The Information Center has a list of places near the Smithsonian for lunch or tea.

Tuesday, 30 Dec., 9:20 A.M. Special tour of the White House, arranged by the White House staff. Children may accompany their parents. Be at the East Gate promptly. You must wear your registration badge. No charge.

Tuesday, 30 Dec., 12:45 P.M. Ladies' luncheon in the Palladian room of the Shoreham Hotel. Price $3.50. Tickets will be on sale at the Women's Information Center at the Sheraton-Park and in the lounge during the coffee hour. We cannot promise that there will be tickets available at the door at the time of the luncheon. Margaret Mead, associate curator of ethnology for the American Museum of Natural History and member of the AAAS Board of Directors, will speak on "On Bringing up Children in the Space Age."

Local Travel Directions

At this 125th meeting, the hotels used are all on the same bus line. Thus, almost all the sessions in their numerous public rooms are not inconveniently far from each other. For the convenience of the attendance, the D. C. Transit System plans augmented bus service on the regular L route between the downtown hotels and the Shoreham and Sheraton-Park hotels. For those who prefer other transportation, however, taxis are available. Taxis are moderate.

From the Willard and Washington hotels to the Shoreham and Sheraton-Park: at 13th Street and Pennsylvania Avenue, take an L2 bus (marked Connecticut and Nebraska) or an L4 bus (marked Chevy Chase Circle). Get off at Calvert Street for the Shoreham, at Woodley Road for the Sheraton-Park.

From the Statler and Sheraton-Carlton hotels: Take the L2 or L4 bus at 16th and I Streets.

From the Dupont Plaza Hotel: Take the L2 bus at 18th and P Streets.

To the downtown hotels from the Sheraton-Park and Carlton: Take the L2 or L4 bus (both marked Federal Triangle).

Tours and Points of Interest

At this meeting, there will be no formal tours sponsored by the AAAS as a whole, but certain sections and participating societies have planned tours and field trips.

The brochure, "Welcome to Washington," which all registrants should receive, includes a map of the city and a keyed list of the points of interest. The following are of special interest.

AAAS Headquarters Building (1515 Massachusetts Ave., NW). Open 9 A.M. to 6 P.M., except Saturday, 27 Dec., when it will be open until 9 P.M.

Corcoran Gallery of Art (17th St. and New York Ave., NW). Open weekdays 10 A.M. to 4:30 P.M.; Sunday 2 to 5 P.M.

Freer Art Galley (12th St. and Independence Ave., SW). Open daily 9 A.M. to 4:30 P.M.

National Geographic Society (16th and M Sts., NW). Open Monday through Friday 9 A.M. to 4:30 P.M.

National Education Headquarters Building (16th and M Sts., NW). Open Monday through Friday 8:15 A.M. to 5 P.M.

National Gallery of Art (Constitution Ave., between 4th and 7th Sts., NW). Open week days 10 A.M. to 5 P.M.; Sunday 2 P.M. to 10 P.M.

Phillips Gallery of Art (Massachusetts Ave. and 21st St., NW). Open Monday 11 A.M. to 10 P.M.; Tuesday through Saturday 11 A.M. to 6 P.M.; Sunday 2 to 7 P.M.

Smithsonian Institution (The Mall, between 9th and 12th Sts., NW). Open daily 9 A.M. to 4:30 P.M.

U.S. National Museum (Constitution Ave. and 10th St., NW). Open daily 9 A.M. to 4:30 P.M.

Washington Cathedral (Wisconsin and Massachusetts Aves., NW). Open weekdays 9 A.M. to 6 P.M. There will be a special "Science Sunday" service at 11 A.M., followed by a special tour for AAAS registrants.

AAAS Public Information Service

The necessity for the general public to be kept informed whenever feasible of the results of the scientific research and development which it supports, directly or indirectly, is evident. Organized science and the individual scientist must have the understanding and support of intelligent citizens in all walks of life if they are to contribute effectively to the over-all advance of American democracy. It is, of course, equally important that information for the public concerning advances in science be clearly and accurately disseminated and without sensationalism. Progress in this direction in recent years has been in most instances outstanding, 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.

One of the four objectives of the AAAS is to try to increase public understanding and appreciation of the importance and promise of the methods of science in human progress. For this reason, and to protect authors of papers from being misquoted by the press, the Association maintains a public information service for each of its annual meetings. Sidney S. Negus, Medical College of Virginia, Richmond, Virginia, has been director of this service for most meetings since 1938. He will have written to each author on the 1958 program prior to publication of the General Program-Directory asking his cooperation.

During the meeting, 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 great scientific convention from the Pressroom in the Sheraton-Park Hotel. News stories filed by them will be published and broadcast throughout the world. The assistance of authors in helping to make them accurate is earnestly solicited by the AAAS.

This year the AAAS is fortunate not only in the continued services of Dr. Negus, but also in the services of its Local Committee on Public Information, composed of 17 members and headed by Windsor P. Booth, chief of the News Service, National Geographic Society.

Washington Committees

As is rather generally recognized, it would be quite impossible to successfully arrange a large and complex meeting and to carry it through to a conclusion, successful in all respects, if it were not for the devoted 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 Leonard Carmichael accepted the general chairmanship of the Washington meeting without delay, appointed the local committees promptly, and has kept in close touch with all phases of this year's meeting.

General Chairman

Leonard Carmichael, secretary, Smithsonian Institution.

Committee on Exhibits

R. Roy Dunn, president, Potomac Electric Power Company, *chairman.*

Donald S. Bittinger, president, Washington Gas Light Company.

R. S. Boutelle, president, Fairchild Engine and Airplane Corporation, Hagerstown, Md.

R. E. Gibson, director, Applied Physics Laboratory, Johns Hopkins University, Silver Spring, Md.

Marshall G. Holloway, president, Nuclear Products-Erco Division of ACF Industries, Inc., Riverdale, Md.

J. W. Howard, vice president, Virginia Electric and Power Company, Alexandria, Va.

Carl J. Knorr, vice president, Remington Rand.

Daniel P. Loomis, president, Association of American Railroads.

F. G. Macarow, vice president-operations, C & P Telephone Companies.

Austin E. Penn, executive vice president, Baltimore Gas and Electric Company, Baltimore, Md.

G. S. Trimble, Jr., vice president-engineering, the Martin Company, Baltimore, Md.

C. Swan Weber, vice president, Westinghouse Electric Corporation.

N. L. Whitecotton, regional vice president, General Electric Company, Philadelphia, Pa.

J. R. O'Hanlon, Potomac Electric Power Company, *Assistant to chairman.*

Committee on Finance

Daniel W. Bell, president and chairman, board of directors, American Security & Trust Company, *chairman.*

H. K. Beck, commercial vice president, Worthington Corporation.

Everett J. Boothby, chairman of the board, Washington Gas Light Company.

Robert V. Fleming, chairman, board of directors, Riggs National Bank.

Warren R. Forster, president, D. C. Bankers Association.

Francis J. Kane, president, Merchants & Manufacturers Association.

J. B. Morrison, president, Chesapeake and Potomac Telephone Company.

Victor O. Schinnerer, president, Washington Board of Trade.

Committee on Physical Arrangements

Lawson J. Cantrell, deputy superintendent, District of Columbia Public Schools, *chairman.*

Richard A. Banks, teacher of science, Stuart Junior High School.

Langston Bate, professor of science, District of Columbia Teachers College.

Mrs. Inez R. Browne, supervisor, Visual Education Department, District of Columbia Public Schools.

Harold Clark, director, Visual Education Department, District of Columbia Public Schools.

Walter Griest, teacher of science, Paul Junior High School.

Elgy S. Johnson, teacher of mathematics, Spingarn High School.

Keith Johnson, supervising director of science, District of Columbia Public Schools.

Thomas Sheehan, Visual Education Department, District of Columbia Public Schools.

Mrs. Laverne Walker, director of curriculum, Visual Education Department, District of Columbia Public Schools.

Committee on Public Information

Windsor P. Booth, chief, News Service, National Geographic Society, *chairman.*

Jules B. Billard, *U.S. News and World Report.*

Walter T. Bonney, National Aeronautics and Space Administration.

Watson Davis, director, Science Service.

Julius Frandsen, Jr., United Press International.

Julian Goodman, National Broadcasting Company News.

Miss Ella Harllee, director, Radio and Television Programs, Council of Churches of the National Capital Area.

William M. Hines, Jr., the *Evening Star.*

Robert F. Hurleigh, Mutual Broadcasting System.

George W. Irving, Jr., U.S. Department of Agriculture.

Theodore Koop, Columbia Broadcasting System News, Washington, D.C.

Matt McDade, National Geographic Society.

Miss Alyce M. Moran, Time, Inc.

Paul H. Oehser, chief, Editorial and Publications Division, Smithsonian Institution.

John H. Secondari, chief, News Bureau, American Broadcasting Company.

John Troan, Scripps-Howard Newspaper Alliance.

Theodore Wiprud, executive director and secretary, Medical Society of the District of Columbia.

Committee on Women's Events

Mrs. Alan T. Waterman, *chairman.*

Mrs. Hurst R. Anderson.

Mrs. Wallace W. Atwood, Jr.

Mrs. Wallace R. Brode.
Mrs. Leonard Carmichael.
Mrs. Frank M. Setzler.
Mrs. Dael Wolfle.

Honorary Reception Committee

Leonard Carmichael, secretary, Smithsonian Institution, *chairman.*

Arthur S. Adams, president, American Council on Education.

Hurst R. Anderson, president, American University.

Justin M. Andrews, director, National Institute of Allergy and Infectious Diseases.

Marling J. Ankeny, director, Bureau of Mines.

F. A. Arnold, director, National Institute of Dental Research.

Allen V. Astin, director, National Bureau of Standards.

Pearce Bailey, director, National Institute of Neurological Diseases and Blindness.

George M. Beam, executive secretary, Association of Military Surgeons of the United States.

Rawson Bennett, chief, Office of Naval Research.

Howard L. Bevis, chairman, National Committee for the Development of Scientists and Engineers.

Carl Billman, secretary, United Chapters of Phi Beta Kappa.

Helen D. Bragdon, general director, American Association of University Women.

Wallace R. Brode, science advisor, Department of State.

Detlev W. Bronk, president, National Academy of Sciences.

Edward B. Bunn, president, Georgetown University.

Robert W. Burgess, director, Bureau of the Census.

Leroy E. Burney, surgeon general, U.S. Public Health Service.

T. C. Byerly, deputy administrator, Agricultural Research Service and Director of Farm Research.

Robert D. Calkins, president, Brookings Institution.

Paul O. Carr, president, District of Columbia Teachers College.

William G. Carr, executive secretary, National Education Association.

Carl G. Christie, superintendent, Naval Observatory.

Henry Clepper, executive secretary, Society of American Foresters.

Harold J. Coolidge, executive secretary, Pacific Science Board, National Research Council.

Thomas F. Cooper, commanding officer, National Naval Medical Center.

S. Douglas Cornell, executive officer, National Research Council.

Hiden T. Cox, executive director, American Institute of Biological Sciences.

Floyd S. Daft, director, National Institute of Arthritis and Metabolic Diseases.

Lawrence G. Derthick, commissioner, Office of Education.

Wilbur A. Dexheimer, commissioner, Bureau of Reclamation.

Theodore A. Distler, executive director, Association of American Colleges.

Hugh L. Dryden, deputy administrator, National Aeronautics and Space Administration.

Wilson H. Elkins, president, University of Maryland.

Leonard M. Elstad, president, Gallaudet College.

Alden H. Emery, executive secretary, American Chemical Society.

Robert H. Felix, director, National Institute of Mental Health.

William P. Fidler, general secretary, American Association of University Professors.

Robert P. Fischelis, secretary, American Pharmaceutical Association.

Arthur S. Flemming, secretary, Department of Health, Education, and Welfare.

Arch C. Gerlach, secretary, Association of American Geographers.

Ralph E. Gibson, director, Applied Physics Laboratory, Johns Hopkins University.

T. Keith Glennan, administrator, National Aeronautics and Space Administration.

Gilbert Grosvenor, chairman of the board, National Geographic Society.

Melville Bell Grosvenor, president, National Geographic Society.

Wayne C. Grover, archivist of the United States, National Archives and Records Service.

Alfred M. Gruenther, president, American National Red Cross.

Carl F. Hansen, superintendent, District of Columbia Public Schools.

Caryl P. Haskins, president, Carnegie Institution of Washington.

Silas B. Hays, surgeon general, Department of the Army.

Leonard Dudley Heaton, commanding general, Walter Reed Army Medical Center.

J. R. Heller, director, National Cancer Institute.

Bartholomew W. Hogan, chief of Bureau of Medicine and Surgery, and surgeon general, Department of the Navy.

John B. Holden, director, U.S. Department of Agriculture Graduate School.

Peter H. Horn, director, Naval Research Laboratory.

Mildred Horton, executive secretary, American Home Economics Association.

Mordecai W. Johnson, president, Howard University.

Joseph Kaplan, chairman, U.S. National Committee for the International Geophysical Year, National Academy of Sciences.

H. Arnold Karo, director, U.S. Coast and Geodetic Survey.

A. Remington Kellogg, assistant secretary, Smithsonian Institution and director, U.S. National Museum.

James R. Killian, Jr., special assistant to the President for Science and Technology.

Evron M. Kirkpatrick, executive director, American Political Science Association.

George P. Larrick, commissioner, Food and Drug Administration.

Milton O. Lee, secretary, Federation of American Societies for Experimental Biology.

Ladislaus Marton, president, Washington Philosophical Society.

Cloyd Heck Marvin, president, George Washington University.

Richard E. McArdle, chief, Forest Service.

John A. McCone, chairman, Atomic Energy Commission.

Charles P. McCurdy, Jr., executive secretary, State Universities Association.

William J. McDonald, rector, Catholic University of America.

Robert E. McLaughlin, president, Board of Commissioners, District of Columbia.

A. T. McPherson, president, Washington Academy of Sciences.

Howard A. Meyerhoff, executive director, Scientific Manpower Commission.

L. Quincy Mumford, librarian of Congress, Library of Congress.

George W. Mundy, commandant, Industrial College of the Armed Forces.

Thomas B. Nolan, director, U.S. Geological Survey.

Winfred Overholser, superintendent, Saint Elizabeths Hospital.

C. E. Palmer, secretary, American Society of Photogrammetry.

Theodore H. Reed, director, National Zoological Park.

Francis W. Reichelderfer, chief, Weather Bureau.

Stuart A. Rice, American Statistical Association.

Paul H. Robbins, secretary, National Society of Professional Engineers.

Frank H. H. Roberts, Jr., director, Bureau of American Ethnology.

Frank B. Rogers, director, National Library of Medicine.

Roger W. Russell, executive secretary, American Psychological Association.

Boyd C. Shafer, executive secretary, American Historical Association.

James A. Shannon, director, National Institutes of Health.

Byron T. Shaw, administrator, Agricultural Research Service.

William Silliphant, director, Armed Forces Pathology Laboratory.

Henry T. Skinner, director, National Arboretum.

Albert C. Smith, director, Museum of Natural History.

Waldo E. Smith, executive secretary, American Geophysical Union.

Robert C. Stephenson, executive director, American Geological Institute.

Arnie J. Suomela, commissioner, Fish and Wildlife Service.

Amos E. Taylor, chairman, National Academy of Economics and Political Science.

Frank A. Taylor, director, Museum of History and Technology, Smithsonian Institution.

Russell I. Thackrey, executive secretary, American Association of Land Grant Colleges and State Universities.

Alan T. Waterman, director, National Science Foundation.

Robert C. Watson, commissioner, U.S. Patent Office.

James Watt, director, National Heart Institute.

J. F. Wellemeyer, executive associate, Washington Office, American Council of Learned Societies.

Donald A. Williams, administrator, Soil Conservation Service.

Conrad L. Wirth, director, National Park Service.

Dael Wolfle, executive officer, American Association for the Advancement of Science.

Annual Exposition of Science and Industry

The large-scale AAAS Annual Exposition of Science and Industry will be located in the Exhibit Hall of the Sheraton-Park Hotel. The exposition will be open to (i) all registrants who attend the meeting and (ii) interested adults who have applied for, and received, complimentary tickets of admission. The hours of the exposition are as follows: Friday, 26 Dec., 7 to 10 P.M.; Saturday, 27 Dec., 10 A.M. to 6 P.M.; Sunday, 28 Dec., 10 A.M. to 6 P.M.; Monday, 29 Dec., 9 A.M. to 5 P.M. and 8 to 10 P.M.; Tuesday, 30 Dec., 10 A.M. to 4 P.M.

AAAS New Member Service—Science, AAAS Publications

Booth 67. Whether or not one is a member of the American Association for the Advancement of Science, every person attending this meeting is cordially invited to visit the AAAS booth for information concerning the Association and its activities. Beyond the satisfaction of strengthening its work for science, for scientists, and for society by one's membership, there are demonstrable personal advantages in joining 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. The New Member Service will be pleased to accommodate those who wish to join the Association as of 1 January. Those already members conveniently can nominate others for membership.

Included in the annual dues of $8.50 (for 1959), each member receives the new, enlarged *Science*—the scientific newsweekly, which has the content of the former *Scientific Monthly* combined with it. Free sample copies will be distributed, and all not familiar with this leading journal of science should visit this booth, where symposium volumes and AAAS membership insignia are also on display. Prospective advertisers may obtain sample copies of the magazine and the rate card.

AAAS-Traveling High School Science Libraries

Booths 96 and 97. The AAAS administers this experimental traveling library program at the request of and with the financial support of the National Science Foundation. The exhibit consists of the 200 books comprising the library which is being circulated to over 1350 senior high schools representing every state and territory. Well-read high-school students will be at the exhibit to discuss the books. The program's objectives are to interest young people in science, to assist those with an aptitude in science in the choice of a scientific career, and to demonstrate the kinds of books that should be purchased by high-school and community libraries in order to satisfy the interests of young people and nonspecialist adults. An annotated list of the books in the library may be purchased for 25 cents, and a selected list of paperbound science books is available for 25 cents.

Now in its fourth year of operation, the program has proved that it is fulfilling its objectives, and hundreds of school and community libraries are basing their new acquisitions on the list of books. Institutes for high-school teachers sponsored by the National Science Foundation and special summer workshops for promising high-school students are using the traveling library books for collateral reading.

Addison-Wesley Publishing Company, Inc.

Booth 44. Addison-Wesley will display selected science and engineering books on the undergraduate and graduate level. The exhibit will feature the Atoms-for-Peace books which Addison-Wesley published on 1 September in conjunction with the Atomic Energy Commission for distribution to the official delegates at the Geneva Conference. Of particular interest to both the scientist and the informed layman will be *Project Sherwood—The U.S. Program in Controlled Fusion* by Amasa Bishop. As part of the Atoms-for-Peace project, Dr. Bishop's book is the first unclassified treatment of our program in controlled fusion.

Other significant publications in the Addison-Wesley exhibit will include: *Radiation Biology and Medicine,* by W. D. Claus; *U.S. Research Reactor Operation and Use,* by J. W. Chastain, Jr.; *Uranium Ore Processing,* by J. W. Clegg and D. D. Foley; *Thorium Production Technology,* by F. L. Cuthbert; *Solid Fuel Reactors,* by J. R. Dietrich and W. H. Zinn; *Physical Metallurgy of Uranium,* by A. N. Holden; *Boiling Water Reactors,* by A. W. Kramer; *Fluid Fuel Reactors,* by J. A. Lane, H. G. MacPherson, and Frank Maslan; *The Transuranium Elements,* by Glenn T. Seaborg; *Sodium Graphite Reactors,* by C. Starr and R. W. Dickinson; and *The Shippingport Pressurized Water Reactor,* by personnel of the Naval Reactors Branch, Division of Reactor Development, U.S. Atomic Energy Commission. In addition to publications with strong reference potential, Addison-Wesley will also make available several titles which are primarily intended for texts.

Aerojet-General Corporation

Booth 63. The Aerojet-General display is a 10-ft exhibit. Featured in it are authentic models of 14 missiles which form an integral part of today's defense inventory. The models include: Bomark, Hawk, Polaris, Genie, Sparrow III, Regulus II, Bullpup, Vanguard, Aerobee-Hi, and Thor-Able, as well as the Titan, the Tartar, and the Minute Man. Because of security reasons the three last-named models are shrouded. The models are approximately 14 inches in height and represent the best efforts of West Coast aircraft industries model makers. In addition to the models there is a 4½-minute color, sound motion picture. The picture describes many of Aerojet's efforts in participating in the national defense program. Where possible, these efforts as portrayed in the movie are related to the models on display. For example, the movie points out that Aerojet did the facilities work in connection with the Thor-Able launching pads and the booster power plant for the Bomark.

The color scheme for the display is striking in its simplicity; the models are gray with red trim and are backlit with blue and white lights. The main panels are black.

American National Red Cross

Booth 35. This booth will feature the blood program potential exhibit. By means of art work, moving chart, and lighting, the exhibit illustrates the scope of the Red Cross regional blood centers,

the activities of a typical center, and a series of graphs in an automatic machine. These graphs illustrate the current and potential community values of blood and its derivatives.

American Sterilizer Company

Booths 16 and 17. The American Sterilizer Company will exhibit the American Flexible Film Isolator, the simplified apparatus for germ-free life techniques. This unit is economical and easy to use, maintains sterile environment, provides complete visibility, and cannot develop negative pressure. Also to be exhibited will be the American "Biogen" unit for continuous culture of microorganisms in large quantities—"Biogen" is a completely new apparatus which produces extremely large quantities of specific microorganisms quickly, economically, and continuously, under well-defined conditions. In addition, the American Sterilizer Company will exhibit a piece of equipment to be used under negative pressures for Dry Box procedures, including dust-free atmosphere, low-intensity radiation containment, microbiological procedures, radio chemistry, and toxic chemicals.

Association of American Railroads

Booths 12 and 13. The exhibit of the Association of American Railroads, "Flanged Wheels . . . Steel Rails"—"The Railroad Story" consists of a series of five illuminated panels tracing the growth and development of railroad transportation in the United States from its conception in 1830 to the present time. Against colorful, scenic backgrounds depicting life characteristic of America in 1830, 1860, 1880, 1920, and today, technological improvements and innovations are listed and identified with the historic period in which they were introduced or with which their use is particularly associated. These improvements include the early steam locomotive, the T-rail, flanged wheels, the coal-burning locomotive, standard gauge, the standardization of rules and time, brakes, couplers, and the modern Diesel locomotive, centralized traffic control, and electronic hump yards. A sixth panel graphically indicates how this development which has contributed so significantly to greater railroad operating efficiency has resulted in ever-decreasing average costs for the movement of freight.

Association of American University Presses

Booth 40. Each university press represented in the exhibit is a separate publishing house. This joint exhibit enables you to see books from a number of presses and, if you so desire, to order them. A free checklist of the books on display is available at the booth.

Basic Books—Library of Science

Booth 29. All areas of science are represented in the Basic Books display. Among recent publications are *Moments of Discovery,* a two-volume anthology of science writings; *Frontiers in Science*—a product of the California Institute of Technology; *Anatomist at Large,* by George W. Corner; *The Earth and Its Atmosphere*; and a new edition of Darlington's *Evolution of Genetic Systems.*

Basic Books' Library of Science division—also included in the display—distributes scientific books of *all* publishers to a membership that now reaches nearly 45,000. Among the authors of recent selections are Fred Hoyle, Niels Bohr, Werner Heisenberg, Giorgio Abetti, Milton K. Munitz, R. E. Peierls, John R. Pierce, Max Jammer, and Morris Kline.

Bell Telephone System

Booths 47, 48, 49, and 50. "Progress in Communications through Bell System Science." The vital part of the Bell Telephone System in defense of our nation and the importance of Bell Telephone Laboratories' research in keeping this nation's telephone service the most advanced on earth are stressed in exhibits scheduled for use at the Annual Exposition of Science and Industry, 26–30 Dec., in Washington, D.C.

The exhibits demonstrate Direct Distance Dialing and new express and bypass routes that insure continuity of communications in time of disaster. It is explained that this modern flexible communications system is a product of telephone research and that, as the research continues, the system will constantly improve. Four exhibits are devoted to projects currently under way at Bell Telephone Laboratories. They are: Research in Semiconductors, Research in Transmission, Research in Electronic Switching, Research applied to T.A.S.I.

T.A.S.I. (Time Assignment Speech Interpolation) is a new system that will double the capacity of the transatlantic telephone cable.

Biological Abstracts

Booth 59. A cooperative, nonprofit enterprise published by biologists for biologists. The exhibit will feature a more complete coverage of the biological literature, and many other improvements, to make this abstracting and indexing service even more useful and valuable to biologists than ever before. The tremendous increase in the volume of research papers published in thousands of journals throughout the world presents a challenge to *Biological Abstracts* and all biologists. If its position as the outstanding service in the biological sciences is to be maintained, the help of more biologists who are willing to take an active part in abstracting the vast number of significant contributions that are appearing in print month after month must be enlisted. Only through the full cooperation of biologists themselves can the ambitious program for *Biological Abstracts* be carried out. Representatives will be on hand to welcome visitors, answer questions, and solicit volunteer collaborators.

Brinkman Instruments, Inc.

Booths 60 and 61. Most items on display this year are innovations which have been introduced during the past few months. Some new developments in microscopy are automatic camera microscopes, both for 4×5 and 30-mm negative sizes. These microscopes have a built-in exposure meter which is coupled with a shutter so that, by simply pressing a button, the exposure is made correctly and all guesswork is eliminated.

Also on display will be a series of precision-built Ultra Thermostats for temperature control and Jumo Contact Thermometers, which are widely used in temperature-control equipment both in the low and high ranges. New models of Brinkmann Manipulators especially for low-power work will be on display, also a micro capillary *p*H electrode for blood and other liquids available only in small quantities. The recently introduced Metrohm Polarecord, a desk-type recording polarograph of extremely compact design, will also be on display.

Cambridge University Press

Booth 1. Cambridge University Press has long been a leading publisher in the natural and physical sciences—chemistry, physics, mathematics, biology, botany, zoology. It lists among its authors some of the world's most distinguished scientists including Sir Arthur Eddington, Sir James Jeans, George Gamow, Lord Rutherford, Bertrand Russell, A. N. Whitehead, and Sir Charles Sherrington.

Canal Industrial Corporation

Booth 83. CANALCO offers this year a complete new line of research instruments with applications in biochemistry, cytology, histology, and industrial physics and chemistry. In optics, CANALCO features the new Hi-intensity Fluxlamp and Trinocular Block, to permit microphotography and projection of light-microscope images at any magnification level. In analytical equipment: (i) the Europelec Micro-Densitometer for quick, accurate size and density measurements and quantitative analysis of organic and inorganic microscope specimens and microphotographic negatives; (ii) the Super-Sensitive Meter-Timer of great versatility, capable of measuring light intensity as low as 10^{-6} lumen and timing exposures from 0.1 to 1 minute, for use in microphotography, absorption and

flame photometry, fluorescence trace analysis, scintillation measurements, and so on; (iii) the Ultra-Violet Fraction Analyzer, for automatic identification and strip-recording of UV-sensitive fractions, an accessory for all standard makes of fraction collector; (iv) the Constant-Voltage Power Source of all battery-powered spectrophotometers to assure drift-free accuracy.

For processing, it features (i) the "Slow-Freeze" unit for automatic freeze-preserving of biological materials in the viable state—of particular use in preservation and storage of tissue cultures, bone marrow, blood products, and tissue for surgical transplant; (ii) the "Spherical-Trap" Freeze Dry unit for preparation of superior tissue specimens for morphological and histochemical studies. For electron microscopy it offers a complete line of accessories and test equipment for electron microscopes.

Carolina Biological Supply Company

Booth 4. Carolina Biological Supply Company takes this opportunity to invite all biologists to chat with our professional staff and to view our latest developments. The exhibit will include the first showing of our new 100-cubic-centimeter culture dish, together with the two popular larger sizes. Several cases of the dishes will be available, in order to demonstrate their quality of controlled stacking. Many other new materials, encompassing the field of biology, will also be on display at our booth. We are eager to make new acquaintances and to renew friendships.

Chemical and Pharmaceutical Industry Co., Inc.

Booth 32. Electric Universal Thermometer TE-3: galvanometer principle with thermocouple applicators manufactured for every conceivable type of temperature reading. Guaranteed accuracy: 0.1°C. Applicators permanently adjusted at factory. Instrument equipped with automatic compensation for variation in room temperatures. Standard applicators available for skin, muscles, canals, veins, brain, and so on. Special applicators can be furnished according to individual specifications.

"Erweka" All-Purpose Lab-Master: Fourteen available laboratory machines operated by one Universal motor-drive facilitate research and development work. Change-over from one unit to another takes only a few seconds. Easily operated. Three-roller mill, homogenizer, ball mills, vibrator, granulators, coating pans, and other types of laboratory machines are easily operated with this motor-drive.

"Desaga" Laboratory Shaking Machine: Unlike any other available machine of this nature, shaking action is three-dimensional simultaneously on two planes. Maximum agitation and impact intensity is achieved. Adjustable between 80 and 140 impulses per minute. Suitable for 5-liter bottle or several small ones. Simulates hand action.

CIBA Pharmaceutical Products, Inc.

Booths 84, 85, and 86. Eidophor, a new large-screen television projector, will be featured at the CIBA exhibit, along with a picture story of the development of a pharmaceutical product, "from test tubes to tablets." Eidophor, which was developed in Switzerland, is an integral part of the newly formed closed-circuit color television unit of CIBA Pharmaceutical Products, Inc. This unit is being used for the first time in the scientific sessions of this meeting.

Coca-Cola Company

Booths 27 and 28. Ice-cold Coca-Cola served through the courtesy and cooperation of the Washington Coca-Cola Bottling Works, Inc., Silver Spring, Md., and The Coca-Cola Company.

Columbia University Press

Booth 88. Selective display of books in the field—reference, specialized, and general publications. Agent in the U.S. for publications of the United Nations, UNESCO, and the World Health Organization. See the first volumes of *Peaceful Uses of Atomic Energy* and many other good books in Booth No. 88. Author conferences for proposed publications arranged by Donald Brown, sales manager.

Consultants Bureau, Inc.

Booth 31. Translations in 19 languages, by bilingual scientists, with emphasis on Russian. Currently translating 29 Soviet research journals (including 15 for learned societies), on a yearly subscription basis; single articles also available. The following are of significant current interest: *Soviet Science and Technology,* a monthly periodical providing, in English, the tables of contents of the latest Soviet scientific journals being translated and published on a continuous basis by Consultants Bureau and other firms; the forthcoming *Russian-English Physics Dictionary* (interim glossaries now available); collections of papers from all our translated Russian journals, 1949–55: *Fused Salts, Glass and Ceramics, Catalysis, Pharmacology, Crystallography*; and a wide variety of other essential scientific publications. In addition, Consultants Bureau has inaugurated a new policy of providing scientists with case-bound translations of important monographs, symposia, and conference proceedings. The first two volumes—*The Structure of Glass* and *The Geology of Uranium*—are now ready, and may be examined at our booth.

Current Contents—Eugene Garfield Associates

Booth 72. Current Contents of Pharmaco-Medical Publications will be featured in the exhibit of Eugene Garfield Associates, of 1523 Spring Garden Street, Philadelphia 30, Pa. Consisting of reproductions of contents pages of nearly 400 primary scientific journals, Current Contents covers the broad interests of medical, chemical, and pharmacological research scientists. This service consists, in part, of publication of weekly pocketsize booklets ($5\frac{1}{2}'' \times 8\frac{1}{2}''$) which cover more than 75,000 individual articles per year. Review copies will be distributed gratis. Advance information on new Current Contents services in such fields as electronics, chemistry, and management science will be available.

Denoyer-Geppert Company

Booths 14 and 15. A portion of the Denoyer-Geppert Company display will be devoted to visual-teaching appliances for the biological sciences and related subjects. There will be a generous assortment of Biocraft unbreakable plastic models for human anatomy, botany, zoology, and embryology. An array of beautifully printed, multicolored large wall charts will form the background of the display, covering an even wider range of subject matter. Biocraft osteological preparations will make up a large portion of the display, with emphasis on human skeletons. Among museum mounts and demonstration materials there will be an interesting assortment of Biocraft plastic embedded specimens.

New, leading Denoyer-Geppert wall map publications will be on display, together with globes, particularly the 24-in. physical-political globe of the world, and the new Philip's *University Atlas.* The display will include representative samples of new maps produced in England, Germany, and the U.S.S.R. The display will include geographical, historical, geological, and transportation maps.

Educational Testing Service

Booth 3.

Encyclopaedia Britannica

Booth 26. A brand new edition of the *Encyclopaedia Britannica,* direct from the publisher, will be on display. The special offer, at unusual terms and discounts, available during your meeting, cannot be offered following the close of the convention. This is a "personal" offer and is not designed for institution acceptance.

Folkways Records and Service Corp.

Booth 89. Products of Folkways Records (the world's largest producers of authentic folk music recordings) illustrate in phonorecord form (documented) the sounds, music, and cultures of many

places and peoples of the world. Over 400 peoples have been recorded in the Ethnic Folkways Library, which includes background notes by leading social anthropologists and ethnologists.

In its Science Series, Folkways has released record albums dealing with phenomena such as the Rain Forest, the sounds of the American Southwest, the "talk" of fish, and the happenings during an actual operation. Complete catalog is on display at the Folkways booth, No. 89.

Foringer and Company, Inc.

Booth 11. Automation for behavioral control and monitoring will be the subject of our exhibit; also other biological instrumentation. An unattended automatic program for behavior control will be demonstrated, with a monkey in a primate chair. Part of its behavior will be converted to pulse form for transmission, and a graphic record will be made for immediate or future use. The program has been chosen to suggest practical means of remotely monitoring changes in behavior of an animal in a satellite in space. Other uses of the apparatus will appear, such as its ability to free scientific personnel from long-term routine observation and manual programming for more creative activities. Another apparatus will show means for determining a subject's alertness and ability to discriminate visual and auditory patterns. Most exciting is autoexperimental gear whereby a subject selects his own experimental values, thus offering us means of investigating thresholds of hearing, vision, and pain. The exhibit includes response-contingent programmers, counters, switching devices, timers, cumulative-event recorders, animal cages, and automatic feeders. Representatives will be present to discuss equipment and applications.

General Biological Supply House

Booth 5. Stop in at the sign of the Turtox! Members from the staff of the General Biological Supply House will be on hand to greet our friends and discuss the Turtox products in the cordial atmosphere of our booth. We will be pleased to talk over any special problems or projects that you may have, and to assist you in any ways that we can. Many new items, designed for the teaching of biogy in the secondary schools and colleges have been added to our listings, recently. It will be our pleasure to tell you about them. Suggestions for other new biological teaching aids will be most welcome, along with your recommendations on how we can better serve you.

General Electric Research Laboratory

Booths 7 and 8. Among the exhibits will be results of fundamental investigations in the fields of high-temperature gas dynamics, stereospecific polymers, the microstructure of high polymers, and the mobility and trapping of electrons in liquid hexane. Samples of a new crystal modification of boron will be shown, and there will be a representation of the curing, by irradiation, of high-temperature silicone rubber. Motion pictures will include an explanation of magnetic resonance. A demonstration on the growth of crystal "whiskers" has been designed especially for science teachers.

General Ultrasonics Company

Booth 62. This exhibit will consist of the following items. Variable Frequency Ultrasonic Generator: continuous fine tuning from 10 to 1200 kc; continuous controlled power output to 400 watts; output impedance variable from 3 to 320 ohms; suitable for powering any transducer in these ranges. New Multipower Transducer: reinforced, mechanical-impedance-transformed, electrostrictive; extremely rugged metallic construction; very high efficiency requiring low power; joined to radiating surface by welded studs. Liquid Processing Tank: stainless steel construction; high-efficiency multipower transducers, used for laboratory and small-parts cleaning, degreasing, pickling, plating, extracting, and accelerating chemical reactions.

Also included are Ultrasonic Degassing Equipment: Multipower transducers quickly and efficiently degas liquids. Ultrasonic Soldering Equipment: rapid and effective soldering of aluminum and alloys without fluxing. Ultrasonic Emulsifier: Multipower transducers in a pipeline construction act on nonmiscible liquids to quickly create stable emulsions.

Graf-Apsco Company

Booth 46. The "safest and most foolproof" microscope for students is exhibited by the Graf-Apsco Company at Booth No. 46. Overcoming the usual "wear and tear" irritations was the primary object in changing the conventional design of microscopes. Every little change was made for a definite reason, to prolong the "like new" life of the microscope. Be sure to see this interesting exhibit where new and guaranteed microscopes are displayed. Bring your repair and maintenance problems to Graf-Apsco, America's leading microscope repair house.

Harvard Apparatus Company, Inc.

Booth 2. The Harvard Apparatus Company, Inc., a nonprofit organization, will exhibit its complete selection of apparatus useful in teaching and research in physiology and allied sciences. Included will be kymographs and accessories, infusion pumps, respiration pump, levers, and clamps. New apparatus shown will include ink writing attachments, an electronic stimulator, and a continuous self-filling infusion pump.

D. C. Heath and Company

Booth 39. From kindergarten to graduate school, educational philosophy, teaching procedures, and teaching materials are today being scrutinized as never before. Heath is exhibiting mathematics and science texts—at elementary, secondary, and college levels—that stand up under this scrutiny. No matter what your specialty, we think it will pay you to spend some time with us. Examine the modern mathematics and science texts at all levels. In particular, we think you will be interested in: *Heath Elementary Science* (1959); *Learning to Use Arithmetic* (1958), an elementary school series; *Biology,* by Kroeber, Wolff, and Weaver, a high-school text; *First Year Algebra* (1957) and *Second Year Algebra* (1957), by Hart, Schult, and Swain; *Plant Classification* (1958), by Lyman Benson; *Introduction to Organic Chemistry* (1957) and *Basic Organic Chemistry* (1959), by Fieser and Fieser; and *Analytic Geometry and Calculus* (1957), by William L. Hart.

Henry Holt and Company, Inc.

Booth 66. The Henry Holt and Company exhibit displays this year an outstanding list of textbooks, including the former Dryden Press titles. Of special interest are the many new and timely publications representing a diversity of science subjects. Among the titles on display are: Andree, *Selections from Modern Abstract Algebra*; Barth, *Embryology,* revised; Blickle-Houp, *Reports for Science and Industry;* Gaskell, *Engineering Mathematics*; Gould, *Inorganic Reactions and Structure*; Hogness-Johnson, *Introduction to Qualitative Analysis* and *Qualitative Analysis and Chemical Equilibrium,* fourth edition; Pare, *Engineering Drawing*; and Wilson-Loomis: *Botany,* revised.

Johns Hopkins University

Booths 55 and 56. The Johns Hopkins University has prepared an informative display on new frontiers of knowledge. Space for the exhibit has been provided through the courtesy of the Baltimore Gas and Electric Company. This exhibit reflects the variety of significant activities carried out at the university through the Faculty of Philosophy, the School of Engineering, the School of Medicine, the School of Hygiene and Public Health, and the School of Advanced International Studies, and with such special facilities as the Operations Research Office and the Applied Physics Laboratory.

Labline, Inc.

Booth 98. Labline, Inc., will show many new laboratory items, all of them in operation. Among the items shown will be the new 1959 models of various types of Imperial centrifuges (table and floor models); Imperial incubators;

water baths; hot wall heated electric sterilizers; slide warmers; Alumaloy clamps; chromatofuges and other types of electrophoresis apparatus; low temperature storage cabinets for tissues, vaccines, and so on; ultrasonic cleaning machines; universal shaking machine for all sizes of laboratory glassware; and many other items for the laboratory. In attendance will be Alexander I. Newman, president, Donald V. Magnuson, director of research, and Jordan D. Abel and Frank R. Wilson, representatives.

LaMotte Chemical Products Company

Booth 36. LaMotte Chemical will exhibit representative examples of the products that have contributed to the world-wide reputation of this firm, now in its fortieth year of service to Science, Industry, and Agriculture. On display will be a small portable outfit for the field inspection of foodstuffs; the new Suessenguth-Kline Slide Test for the clinical diagnosis of Trichinosis; organic reagents for the colorimetric analysis of trace elements; synthetic phospholipids, commercially available for the first time; soil testing outfits and equipment; micro clinical test sets; and *p*H indicators, color standards, buffer solutions and comparators.

E. Leitz, Inc.

Booth 79. E. Leitz, Inc., plans to exhibit for the first time a Double-Beam Interference Microscope. Also on show will be their new Micro Manipulator; Base Sledge Microtome for sections under one micron as well as their standard Freezing Microtome; Universal Microscope with Plano flat-field objectives, Phase contrast optical system after Heine and incident light equipment, also color phase equipment; 500 watt and carbon arc microprojectors; the Universal Camera Microscope Panphot with new high intensity Xenon lamp; various medical laboratory type microscopes with new design features and Binocular Prism high and low power Magnifiers. The latest fluorescence light source for research microscope Ortholux UAM will be demonstrated.

Linguaphone Institute

Booth 22. The Linguaphone Method for language learning—in spare time—at home—has wide acceptance among scientists in every discipline. The Linguaphone display features home-study courses in the 34 most important languages of Europe, Africa and Asia. Spanish, Russian, German and French are in particular demand.

The Relaxed Way to Learning is also a feature of the display. Here are demonstrated two electro-mechanical devices designed not only to speed up the assimilation and retention of knowledge, but also to utilize profitably some of the time which often disappears in the "no-man's land" of sleep. The devices are: The tape-recording Dormiphone Memory-Trainer and the Dormiphone Record Player. Both units are designed to enable the learner to reinforce his wakeful study by "sleep learning"—listening to material automatically iterated during sleep.

Martin Company

Booths 80 and 81.

McGraw-Hill Book Company, Inc.

Booth 73. McGraw-Hill Book Company welcomes you to the meeting. You are cordially invited to browse through our exhibit here at Booth No. 73 (on your left as you enter). You will find on display McGraw-Hill publications in all areas of science. Our biological science books include, among others, Storer and Usinger's third edition of *General Zoology,* Sinnott, Dunn, and Dobzhansky's fifth edition of *Principles of Genetics,* the second edition of Langley & Cheraskin's *Physiology of Man,* Patten's *Foundations of Embryology,* and Pelczar and Reid's *Microbiology.* Among the physics and engineering books you will see Krauskopf's *Fundamentals of Physical Science* (a new edition is presently in press), Smith and Cooper's sixth edition of *Elements of Physics,* Weber, White, and Manning's *Physics for Science and Engineering,* Zemansky's fourth edition of *Heat and Thermodynamics,* Adams' *Space Flight,* Carter's *Realities of Space Travel,* and Present's *Theory of Gases.* The area of geography is represented by Freeman and Morris' *World Geography* as well as by many other texts. Some of the outstanding books in the field of geology include *Introduction to Historical Geology,* by R. C. Moore, and *The Earth and Its Gravity Field,* by Heiskanen and Vening Meinesz. From the Blakiston Division you will see such titles as *Dynamic Anatomy and Physiology,* by Langley, Cheraskin, and Sleeper, and *Electron Microscopic Atlas of Normal and Leukemic Human Blood,* by Low and Freeman and a number of others.

Medical Dental Scientific Photographic Equipment Co.

Booth 76. Inexpensive photographic equipment for close-up pictures, using electronic flash with either the Circle Flash (for shadowless pictures) or the Side Light (for pictures with shadows). Featured will be our simplified set-ups using our moderately priced cameras, or we can adapt other cameras to the set-ups.

For the novice photographer or the science instructors, we would particularly like to suggest that they investigate the new Kodak Starflash Outfit. This extremely easy to use close-up set-up is being solely presented by our company, and we believe that it will have many diversified uses in the science field. Since this is our first exhibit at an AAAS meeting, we would welcome the opportunity to discuss any photographic problems of those attending the meeting.

G. & C. Merriam Company

Booth 42. The Merriam exhibit will consist of a panel of photographs showing various processes in the making of our dictionaries. There will be a display of copies of all Merriam-Webster publications together with instructional aids illustrating how they can be used most advantageously.

Mettler Instrument Corporation

Booth 87. Mettler Instrument Corporation will exhibit representative instruments from its line of analytical, precision, and multipurpose balances. To be featured in the exhibit will be models of its new multipurpose line. These balances feature a capacity of 160 g with accuracies to 0.01 mg. Also to be shown will be the high-speed direct-reading precision balances with capacities to 4 kg, as well as models of the well-known analytical series.

Microbiological Associates, Inc.

Booth 6. Microbiological Associates, Inc., Bethesda, Maryland, will present: (i) Viable tissue cultures of 30 different mammalian cell strains; (ii) certain methods of standardization used for pretesting media and reagents; (iii) diagnostic viral reagents such as new typing antisera for Coxsackie and ECHO viruses; hemadsorption, influenza, measles, and adenovirus complement-fixation antigens (virologists will be in attendance); (iv) availability data on MA strains of mice—Inbred: $C57/Bl_6$, $dba/_2$, Balb/c and C_3H; Hybrid: BDF_1, DBF_1 and cbda; also heterozygous animals in random bred Swiss mice, Wistar rats, and hamsters.

Microcard Foundation

Booth 41. The Microcard Foundation, an affiliate of the University of Wisconsin Press, is jointly exhibiting with the Microcard Corporation. The Foundation publishes various titles in the sciences and humanities on Microcards (3- by 5-in. cards containing approximately 50 microimages per card).

A representative will be available to discuss titles for publication in this medium. Also, of interest to those concerned with data dissemination problems, is the story of the world-wide dissemination of IGY meteorological data on Microcards.

Wildlife Disease, a publication of the Wildlife Disease Association and the American Institute of Biological Sciences, through the aid of a grant from

the Council on Library Resources, starts publication of a unique new journal on 1 Jan. 1959. The journal—*Wildlife Disease*—consists of printed abstracts and Microcarded articles. This new journal will also be shown.

Muscular Dystrophy Associations of America, Inc.

Booth 99. The MDAA, Inc., exhibit presents information concerning the manifestations of muscular dystrophy and is composed of three distinctive panels, presenting the following: (i) color transparencies with appropriate descriptions of the manifestations of dystrophy —the genetics of the condition is graphically shown and discussed; (ii) the second panel presents postural changes and characteristics of the early and advanced stages of progressive muscular dystrophy; (iii) the third panel presents color transparencies of personnel engaged in the various MDAA-sponsored research projects under the grants-in-aid program. The dystrophic mouse, now extensively used for this research, is shown and described. The hereditary aspects of the condition are explained. The Institute for Muscle Disease, an MDAA-sponsored project which will open early in 1959, is pictorially and functionally described. An automatic playback tape features an informational interview, on the subject of progressive muscular dystrophy, with Dr. Melville H. Manson, scientific director, MDAA, Inc.

National Biological Laboratories, Inc.

Booth 54. The National Biological Laboratories, Inc., nationwide distributors of biological preparations, specimens, and models and equipment, and primary supplier of these items to the institutions in the metropolitan area of the nation's capital, takes great pride in exhibiting a variety of its products to the 125th Meeting of the American Association for the Advancement of Science. The interest of all visitors to our exhibit booth will be keenly stimulated by the impressive variety of this display, which is indicative of the virility and rapid expansion of our relatively young establishment. Among the osteological preparations in the exhibit will be a natural human skeleton with muscle insertion and origins painted and lettered in, and ligamentary cat skeletons mounted on new, lightweight bases with their feet embedded in clear plastic. There will be a number of preserved animal specimens displayed in glass jars, and one of our fine embalmed and doubly injected turtles with the plastron removed for examination of the circulatory system.

Our excellent anatomical models, made of a hard, unbreakable, washable plastic will be represented in part by a fine human torso with eight removable parts, an enlarged model of the inner and middle ear, and an enlarged model of the human heart. In the equipment line we will have for your inspection two brands of nationally acclaimed microscopes and a well-known microprojector, in addition to several other items necessary in every biology laboratory. Please feel free to examine everything in the exhibit, and be assured that our salesmen are eager to demonstrate for you, and consult with you, on any special problems or requirements you may have.

National Geographic Society

Booths 64 and 65. 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 Institutes of Health

Booth 52. The National Institutes of Health are the principal research arm of the Public Health Service, U.S. Department of Health, Education, and Welfare. The Institutes are devoted to the conduct and support of medical research, and the exhibit depicts in summary, graphic form the NIH programs, one panel concerning the research conducted by the Institutes and the other, NIH support of research, training, and the construction of research facilities.

Seven Institutes form the family of NIH: Allergy and Infectious Diseases, Arthritis and Metabolic Diseases, Cancer, Dental Research, Heart, Mental Health, and Neurological Diseases and Blindness. Serving NIH as a whole are the Clinical Center (a 500-bed, 1000-laboratory research facility) and three Divisions—Research Grants, Research Services, and Business Operations. Two other Divisions—Biologics Standards and General Medical Sciences—conduct programs, the first regulatory in the field of biologics and with its own research, and the second, General Medical Sciences, serving as the focus for research and training grants in general rather than categorical fields of medicine and allied sciences. Free literature describing NIH programs is available at the booth.

National Instrument Laboratories, Inc.

Booth 82. This exhibit will feature a complete line of microscopes from Christian Beck and Sons and a chromograph for scanning and integrating paper electrophoresis strips, as well as a field emission electron microscope used for studying crystal structure, and so on. Also shown will be a surface tensiometer used for determining surface tension of liquid, using a one-drop sample at controlled temperatures, and a flame photometer.

National Science Foundation

Booth 21. The National Science Foundation, an independent federal agency, is responsible for promoting scientific progress through: (i) developing and encouraging the pursuit of a national policy for promoting basic research and education in the sciences; (ii) initiating and supporting basic scientific research and appraising the impact of research upon industrial development and upon the general welfare; (iii) awarding scholarships and graduate fellowships in the sciences; (iv) fostering interchange of scientific information among American and foreign scientists; (v) evaluating scientific research programs undertaken by federal agencies, and correlating the Foundation's scientific research programs with those undertaken by individuals and by public and private research groups; (vi) maintaining a register of scientific and technical personnel and providing a clearinghouse for information covering such personnel in the United States; (vii) initiating and supporting, at the request of the Secretary of Defense, specific scientific research activities connected with national defense matters.

The NSF exhibit illustrates operating Foundation programs for carrying out these responsibilities.

New American Library

Booth 9. Works in every field of science, from anthropology and atomic physics to zoology, by outstanding authors such as George Gamow, Fred Hoyle, James B. Conant, Julian Huxley, Margaret Mead, and Rachel Carson, are to be found in the attractive inexpensive Mentor and Signet Key paperbound books. Included are 49 titles in the 1958 AAAS list, "An Inexpensive Science Library," selected by Dr. Hilary J. Deason, Director of the High School Science Library Program.

Mentor and Signet Key books arouse the interest of young people and start them toward scientific careers and help others understand science and its crucial importance in the world today. These books are acclaimed for their excellence and low price. Examination copies will be available on request of teachers who wish to consider them for class use.

Nuclear Products—Erco

Booth 10. The Nuclear Products–Erco Division exhibit consists of five panels illustrating the diversified activities of this division. Panels showing the MIT

Heavy Water Research Reactor and the U.S. Air Force Radiation Effects Reactor illustrate this division's contribution to the technology of reactor engineering.

The MIT Reactor is a heavy water cooled and moderated type reactor and will be operated at 1000 kw, producing a flux of 10^{13}n/cm^2/sec; it is the first of its type ever to be built for private use. Facilities include experimental ports and thimbles, medical therapy arrangement, gamma irradiation room, chemistry hot labs, reactor control room, and equipment for servicing reactor building.

The Air Force Reactor was designed specifically for radiation effects studies and will operate at a power level of 10,000 kw. Test cells adjacent to the reactor are equipped with facilities to determine behavior of nuclear aircraft equipment under irradiation and simulated high-altitude flight conditions. These cells are loaded and unloaded by a remotely controlled rail car system. Facilities include fuel element storage and gamma irradiation well, bulk shielding facility, thermal column and beam tubes, and radiation space within the reactor vessel. A model of the 604 Pool Training Reactor, designed primarily for educational purposes, will also be displayed.

Other panels will show the F-105D Flight Simulator (Air Force) and the S2F-3 Weapon System Trainer (Navy) and illustrate the latest Erco contributions to the vital training programs presently conducted by the Armed Forces. The F-105D Flight Simulator permits the training of pilots in the handling of the latest all-weather interceptor ordered by the Air Force. It offers facilities for the simulation of typical mission profiles from take-off to landing, and incorporates some novel and proprietary methods of ground mapping radar simulation. The S2F-3 Weapon System Trainer offers complete facilities for the integrated training of flight crews in the latest techniques of antisubmarine warfare. It covers all stages of "hunter-killer" operations, from search to track, and synthesizes the most up-to-date electronic and ordnance systems to be employed by Navy aircraft for this critical phase of our National defense.

The panel showing the Atlas missile in flight is symbolic of the contribution that Erco is making in the field of maintenance crew training. Under subcontract from the General Electric Company, a complete system of trainers is being designed and manufactured for the ground-base control and guidance equipment for the Atlas missile.

Oak Ridge Institute of Nuclear Studies

Booth 25. The Oak Ridge Institute of Nuclear Studies is a nonprofit educational corporation of 37 southern universities, operated under direct contract with the U.S. Atomic Energy Commission. Its primary aim is the integration of the extensive facilities of Oak Ridge in the pattern of scientific education in the South. The Institute administers several A.E.C. special fellowships; a research participation program through which university faculty members carry out research at Oak Ridge; a graduate program for doctoral candidates who use the specialized Oak Ridge facilities for thesis research; a traveling lecture program which sends Oak Ridge scientists to speak on university campuses; a nationwide traveling science teacher program for secondary schools, supported jointly by the National Science Foundation and the U.S. Atomic Energy Commission, which was expanded this year to include cooperatively developed and supported state programs; and other educational programs. The Institute also operates a medical-research hospital; a radioisotope techniques training program; an atomic-energy museum; and traveling atomic-energy exhibits.

Office of Naval Research

Booth 45. The Office of Naval Research will have an exhibit on research in the preservation and transplantation of tissues such as skin, bone, at the annual meeting of the American Association for the Advancement of Science. It will show the type of research being carried on in this and related areas, which are a part of ONR's program for basic and developmental research in the biological sciences. Highlighted in this exhibit, for example, are basic and developmental research in the exploration of the use of tissue substitutes such as bovine embryo skin, anorganic bone, plastic blood vessels, and the plastic cornea. Results of defects and their repair are illustrated in color.

Phipps and Bird, Inc.

Booth 58. We will display apparatus of interest to both the teacher and investigator in physiology, psychology, and related fields, with emphasis on class room equipment such as kymographs, tambours, and stimulators.

Potomac Electric Power Company

Booths 74 and 75. The Potomac Electric Power Company of Washington, D.C., a member of Atomic Power Development Associates, Inc., and Power Reactor Development Company, will present an exhibit relative to the Enrico Fermi Atomic Power Plant. This plant, which is now under construction on the shores of Lake Erie, approximately 30 miles southwest of Detroit, Michigan, will have the world's largest "breeder" power reactor. The importance of the breeder reactor in relation to the economic and commercial aspects of reactor development lies in its unique ability to produce more nuclear fuel than is consumed in the process of generating heat for the production of electric power. The initial steam output of the Fermi Plant, scheduled for completion in 1960, will permit the generation of 100,000 kilowatts of electric power.

The reactor has been designed by Atomic Power Development Associates, Inc., a nonprofit organization composed of 43 member companies, which is devoting its entire efforts to finding better routes to commercial atomic power through extensive research, development, and testing programs. There will be on display in the exhibit a model of the Enrico Fermi Atomic Power Plant along with a model of the breeder reactor and some of its component parts.

Power Reactor Development Company, a nonprofit membership corporation made up of 26 utility and manufacturing companies, is currently financing and constructing the breeder power reactor which it will own and operate. At the same time that the reactor plant is being constructed, the Detroit Edison Company is erecting a conventional steam turbine generator plant to be used in conjunction with the reactor.

The Enrico Fermi Atomic Power Plant is an outstanding example of a dedicated industry's determination to make the atom a powerful peacetime force for the advancement of civilization. The breeder type reactor being used in this project will add to the nation's reserves of nuclear fuels rather than deplete those resources.

The Rayoscope Company

Entrance. At the Rayoscope booth images of microscopic specimens will be projected on a screen at a distance so that a large number of people can observe simultaneously. Especial emphasis will be placed on projection of living specimens and on the minute detail of projected image. Our specially designed lenses and pure white light source make it possible to show intricate detail of both living and stained specimens. You no longer have to be satisfied with generalities. A revolutionary new type of projection screen will be demonstrated. This screen permits projection in a well-lighted room—even in a room such as a television studio with numerous flood lights burning. For the best and finest in micro-projection come to the Rayoscope booth.

Rinehart and Company, Inc.

Booth 51. The exhibit of the College Department of Rinehart and Company, Inc., New York City, will display Rinehart publications in the areas of science and science education. The Rinehart representative at the exhibit will be Alfred S. Schenkman, who holds the degree

of Master of Science from the University of Minnesota and the University of Chicago.

The publications displayed will cover the areas of anthropology, biology, chemistry, statistics for behavioral scientists, mathematics, physics and include a wide selection of books which are used for training future teachers of science.

Row, Peterson and Company

Booth 95. The newly established College Department of Row, Peterson and Company is entering the college field with the publication of a number of outstanding textbooks and monographs. Among its initial company of authors are Abram Bergson, Hans Bethe, Frederic de Hoffmann, Don Patinkin, and Robert R. Sears. Among its fields are biology, chemistry, economics, physics, psychology, and sociology.

The department comprises three important elements: (i) an editorial staff experienced in college and university work, (ii) the company's 51 years of experience in designing and manufacturing quality books, and (iii) a sales force covering virtually every college and university in the United States. We invite you to stop and examine some of the books we have already published.

Schwartz Laboratories, Inc.

Booth 30. Schwartz Laboratories is the world's oldest and largest producer of nucleic acid compounds and yeast derivatives. Members of the Schwartz staff will be present to answer questions about the 200 products of biochemical and medical importance now being made by the company. Among the latest Schwartz Preparations included in the exhibit are tritiated thymidine, tritiated cytidine, tritiated adenosine, tritiated 2-deoxy-D-ribose, C^{14}-L-glutamine, N^{15}-L-amino acids, 8-L-glutamyl hydrazide, L-pyrrolidone carboxylic acid, sodium adenosine 5′-phosphoramidate, crystalline disodium uridine 5′-monophosphate, 2-aminoethylisothiouronium bromide hydrobromide, and flavin adenine dinucleotide. Other key tools for biomedical research featured in the Schwartz exhibit include nucleic acid compounds; purines and pyrimidines; adenosine phosphates; glutathione and other sulfhydryl compounds and reagents; deoxyribonucleosides; optically standardized amino acids and kits; C^{14}, S^{35}, and P^{32} radiochemicals; and clinical preparations. The products pioneered by Schwartz Laboratories are aiding scientific studies by providing some of the research tools used in the whole area of biomedical research, from investigations of fundamental metabolic, enzymic, physiological, and genetic aspects through nucleotide and peptide synthesis, and in clinical investigations of nutrition, neoplasm, and cardiac and vascular ailments.

Science Library

Booths 91, 92, 93. 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 in the Science Library are: American Association for the Advancement of Science; Academic Press, Inc.; Addison-Wesley Publishing Company, Inc.; Annual Reviews, Inc.; Association Press; Cambridge University Press; Catholic University of America Press; E. P. Dutton and Company, Inc.; Emerson Books, Inc.; W. H. Freeman and Company; Grove Press; Harcourt Brace and Company; Houghton Mifflin Company; Johns Hopkins University Press; Macmillan Company; Josiah Macy, Jr. Foundation; C. V. Mosby Company; New American Library; Oxford University Press; Prentice-Hall, Inc.; Reinhold Publishing Corporation; Row, Peterson and Company; St. Martin's Press Inc.; Charles Scribner's Sons; University of North Carolina Press; D. Van Nostrand Company, Inc.

Joseph E. Seagram and Sons, Inc.

Booths 100 and 101. Congeners (fusel oil, aldehydes, acids, etc.) are compounds found in all alcoholic beverages that provide the taste, bouquet, and color. In high concentrations, however, certain congeners may produce toxic effects. This exhibit presents the results of quantitative chemical analyses of congeners found in six leading types of distilled spirits, along with correlated acute oral toxicity studies obtained on rats. Pertinent literature will be available.

Science Materials Center

Booth 38.

Special Libraries Association, Washington Chapter

Booth 94.

Ivan Sorvall, Inc.

Booth 57. On display will be a number of completely new Servall Centrifuge developments, some of which are right in line with the modern trend toward automation. Shown in operation will be the Szent-Györgyi & Blum 8-Tube Continuous Flow System, the Type SS-3 Push-button Automatic and the type SS-4 Enclosed Superspeed Centrifuges, a new Large-Capacity High-Speed Rotor, the Sharp Particle (Virus) Counting Rotor, and a Field Aligning Swinging Bucket Rotor. Also on display will be the well-known Servall table model centrifuges, the Servall Omni-Mixer with micro-attachment, the Servall Porter-Blum Microtome. Several new LKB chromatography and electrophoresis instruments will also be shown.

Spinco Division, Beckman Instruments, Inc.

Booth 37. Beckman/Spinco will show the production model of its new Amino Acid Analyzer, which rapidly and automatically quantitates the amino acids found in protein hydrolysates and physiological fluids and the Model K High Force Centrifuge with its new continuous-flow rotor.

Features of the Spinco continuous-flow rotor include freedom from foaming, frothing, and aerosol effect. Flow rates of 500 ml per minute are possible, depending upon the sedimentation rate of the material being processed. The rotor develops forces 28,000 times gravity at 18,750 rpm, and features a "vertical wall" design for increased sedimenting efficiency.

Thiokol Chemical Corporation

Booths 69, 70, and 71.

John I. Thompson and Company

Booth 43. This exhibit displays information as to the services furnished by John I. Thompson and Company, an engineering organization with main offices in Washington and laboratory facilities at Bellefonte, Pa. The company provides research, development, and design services, with supporting activities in technical writing and graphics. A brochure defining the scope and special fields of effort is available at the booth. A leaflet *Planning Your Report,* is of particular interest to research and development scientists, engineers, and all AAAS convention visitors. This is a handy guide packed with report-preparation instructions and with references as to items of organization, format, data presentation, illustration, and reproduction—details generally overlooked by the research writer but which are vital to communicating the results of his research. Free with the "Compliments of JITCO".

Principal engineers and illustrators of JITCO will be in attendance to answer queries concerning the many services offered and particularly the creative and design services for the exhibits, presentations, and visuals so essential today in communicating the arrangements of complex devices or data.

A feature of the exhibit is a series of transparencies designed and produced by JITCO to illustrate a Department of Commerce presentation of the Nuclear Ship "Savannah." Conception of such material is commonly a JITCO production incident to preparation of engineering data and writing about new things in industry.

Tobacco Industry Research Committee

Booth 53. Information about the nature and extent of the scientific research program developed and directed by the Scientific Advisory Board to the Tobacco Industry Research Committee. The research program, covering all phases of tobacco use and health, contains three main areas of investigation within which are the specific fields of research. These areas and specific fields are described.

United Fruit Company

Booths 77 and 78. United Fruit Company's exhibit, "Problems and Progress in the Big Three," illustrates the major research program being directed against the three most serious plant diseases which limit banana production in tropical America. The research problem is defined by color transparencies of disease effects on the fruit and plant, by black-and-white photographs depicting experimental control procedures and the scientific effort involved, and by stylized models showing method of infection by the organisms. Tape recordings heard through a battery of French telephones briefly discuss further aspects of the scientific challenge. Side panels describe scientific research careers in the tropics and show the areas of company operations in Central America and the Caribbean.

U.S. Department of Health, Education, and Welfare, Division of Radiological Health

Booths 18 and 19. This exhibit names sources of radiation, effects on human life, and what must be done to curtail excessive radiation. It details the program of the Public Health Service in measurement and analysis of radiation, research, and training of personnel in detection and control of radiation, and gives specific examples of aid rendered to states in radiation control of detection.

Universal Scientific Company

Booth 90. Universal Scientific Company, Inc., Vincennes, Ind., manufacturers of science electrical and electronics educational equipment. The equipment is complete with texts and lessons. The equipment enables the instructor to convey the subject visually to the class in a very short period of time. Student equipment makes it possible for the student to discover the principle for himself.

Washington Gas Light Company

Booth 68. The method and economic advisability of storing natural gas underground in natural formations is described in the exhibit of Washington Gas Light Company. This company, which distributes natural gas to the greater Washington, D.C., area, is currently in the process of establishing such underground storage facilities in Prince George's County, Maryland. The central panel of the exhibit depicts a typical cross section of sediments, or water-bearing stratum, suitable for gas storage. It is animated to show graphically the injection and withdrawal of gas from the underground anticline, or storage dome. Adjoining panels illustrate the economic advantage of gas storage.

W. M. Welch Manufacturing Company

Booths 33 and 34. The W. M. Welch Manufacturing Company plans to display selected apparatus used in the physics, chemistry, and biology laboratories. These will include those especially adapted to the teaching of science in the secondary schools and colleges, as well as some items specifically designed for special use in research and industrial laboratories. A partial list includes, stainless steel balances, quick operating high vacuum pumps, electrical measuring instruments, electronics teaching devices, Densichron for measuring optical density, color saturation, and paper chromatograms. Many charts and other visual aids for teaching science, mathematics, and physiology, together with preserved specimens, synthetic skeletons, and other biological models, will be shown.

Westinghouse Electric Corporation

Booths 23 and 24. The Electronics Division display consists of a series of action diaramas depicting divisional fields of interest. Nine distinct scenes rotate fully in 90 seconds. Tieing in with the diaramas is a tape which tells the story behind the exhibit.

Some of the subject matter covered in the various diaramas are: (i) ground to air, ground to ground, and ground to ship communications; (ii) shipboard and submarine communications; (iii) missile ground control; (iv) shipboard radar; (v) tactical and air defense radar; (vi) anti-jamming techniques; and (vii) research.

Each of the diaramas is a replica of Electronics Division equipment applications actually in use or to be used by the military services.

John Wiley and Sons, Inc.

Booth 20. On display at the booth of John Wiley and Sons, Inc., will be text, reference, and professional books in all the principal fields of science and engineering technology; the level of these books is college and above.

News of Science

NASA Research Advisory Committees

Thirteen new Research Advisory Committees are being formed to provide technical counsel to the National Aeronautics and Space Administration. T. Keith Glennan, NASA administrator, reports that he expects to have the committees functioning early next year.

Glennan has also announced formation of a new Special Committee on Life Sciences to advise the NASA on matters connected with human factors, medical and allied problems of NASA's manned space vehicle program. Chairman of the Special Committee is W. Randolph Lovelace II, director of the Lovelace Foundation for Medical Education and Research, Albuquerque, N.M. Lovelace is a specialist in aeronautical and space medicine.

When he announced the advisory committees, Glennan explained that communication and coordination with industry, universities, and government organizations are required in order to maintain aggressive, progressive research programs. A committee will promote communication with other workers in the same or allied fields by reviewing research in progress, considering new problems, and making recommendations regarding the direction in which future research should go.

The committees will be concerned with the following fields: fluid mechanics; aircraft aerodynamics; missile and space craft aerodynamics; control, guidance, and navigation; chemical energy processes; nuclear energy processes; mechanical power plant systems; electrical power plant systems; structural loads; structural design; structural dynamics; materials; and aircraft operating problems.

All members of the committee will be