deed, such incidence as would seem intolerable if the human race is to continue.

A parallel situation should exist in the case of deposition of radioactive strontium in bone, which may cause leukemia and other cancers (*1*). A given amount of Sr^{90} in the bones may be assumed to provide a virtually steady dose rate of ionizing radiation within the body. An added amount of radiostrontium would be expected to raise the dose rate and hence the incidence of cancer; and, again, successive increments would be expected to have increasingly greater effect in the lower incidence range.

But is there any real justification for carrying over the evidence from experiments with non-ionizing radiation? It may be objected that the primary action of these two types of radiation is different, and that, hence, no direct relationship is to be expected. In answer it must be pointed out that the biological effects of these radiations are generally similar, particularly as regards the kinds of quantitative relationships observed, and that we have no evidence to the contrary with regard to cancer. To the best of my knowledge there are no data on experimental carcinogenesis by ionizing radiation that have been obtained in a manner comparable to those with ultraviolet light, nor that will permit a comparable analysis; and until such data have been obtained it seems wisest to accept the parallel. Moreover, carcinogenesis by ultraviolet light has the aspect of a cumulative process, and it seems most likely that the carcinogenic effect of ionizing radiation will turn out to be the same, in which case similar quantitative relationships are to be expected. The normal distribution of cancer incidence found in connection with ultraviolet light appears to be based on the cumulative effect of a number of randomly distributed factors—as may be better appreciated from a more complete analysis of the data and conditions (see *2*). It would not be surprising if the curve relating cancer incidence in man from ionizing radiation did not follow a smooth, normal distribution, as does that found for genetically homogeneous mice exposed to ultraviolet light; the curve might well be skewed in the former case. Nevertheless, any curve resulting from the accumulated effects of a number of randomly distributed factors should have a rising inflection at low incidences, and so the above general analysis should be applicable.

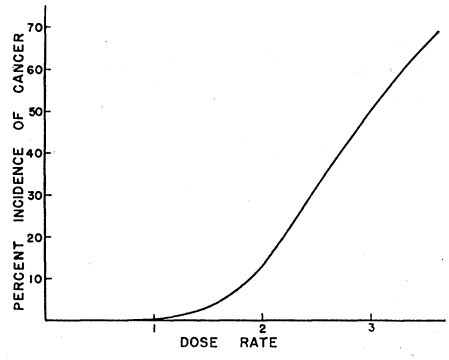

Fig. 3. The effect of dose rate on the percentage incidence of cancer in a population; based on the data illustrated in Figs. 1 and 2.

While much uncertainty must continue to exist, certain things appear clear from the above analysis: There is no definite reason for assuming a threshold for carcinogenesis, and it is infeasible to test the possibility by direct experiment. Thus, there is no justification for assigning a "safe" upper limit for environmental ionizing radiation as regards the genesis of cancer. The assumption of a linear relationship between cancer incidence and dose rate (see *1*) is justifiable only as a tentative first approximation. The curve may be expected to have a rising inflection at low percentage incidences of cancer, in which case estimates based on a linear extrapolation would tend to minimize the effect of increase in dose rate.

It is to be emphasized that what has been said here does not apply to the production of genetic mutations (in the usual sense), which are abrupt, separate events and hence must have a different quantitative relationship to dose rate, but only to the induction of cancer.

References

1. E. B. Lewis, *Science* **125**, 965 (1957).
2. H. F. Blum, *Carcinogenesis by Ultraviolet Light* (Princeton Univ. Press, Princeton, N.J., 1959).

AAAS Chicago Meeting

Raymond L. Taylor

The preparations for any large scientific meeting—even if it is a recurrent yearly event, and one with a basic pattern—are difficult fully to appreciate except by those who have been involved. The annual national meeting of the American Association for the Advancement of Science is particularly complex, uniquely interdisciplinary, and variable with respect to the number and identity of the many participating societies. Typically, all 18 AAAS sections have programs, often symposia one to six sessions in length; some 40 to 50 of the 240 affiliated societies will meet with the Association and sponsor programs varying from single sessions or social events to full-scale national meetings with concurrent sessions extending over four or five days. Several affiliates regularly arrange regional meetings or sponsor special two- or four-session symposia. Another 40 to 50 societies are official cosponsors of the sectional or societal programs of others. Altogether, the AAAS meeting may exceed 300 sessions that range from highly specialized to broad and general ones—arranged, however, so that there is a minimum of conflict for their potential audiences.

The decision of the Board of Directors on the site of the meeting is always made some two to five years in advance. After a survey of the available physical facilities, basic decisions for the meeting and its local committees are made a year ahead. Some of the sectional programs are virtually complete early in the spring, but others, especially those with sessions for contributed papers, are not ready for the printer until early October.

The preliminary announcement of the seventh Chicago meeting [*Science* **129**, 1431 (24 May 1959)] indicated the general scope of this year's con-

vention of the Association. The synopses of the programs, which began to appear in *Science* on 30 Oct. and have appeared in each issue since, have provided additional information, but only the General Program, which should reach advance registrants by first-class mail within the next week, can furnish a full appreciation of the scope and quality of this year's 126th AAAS meeting.

There are events scheduled by the Association as a whole, including two sessions reserved for the AAAS General Symposium, "Moving Frontiers of Science IV," the AAAS Presidential Address and Reception, two meetings of the Council and other business sessions, and the AAAS Smoker for all registrants the final evening. On other evenings there are coffee hours and smokers for the science teachers, for geologists, and for biologists. There are General Sessions sponsored by committees of the Association, a Junior Scientists Assembly especially for science-minded high-school students, and the distinguished evening addresses or lectures sponsored by the Society of the Sigma Xi and the United Chapters of Phi Beta Kappa (jointly), the Tau Beta Pi Association, and the National Geographic Society. Innovations this year include an AAAS-sponsored Popular Lecture especially for interested residents of the Chicago area, and "Dutch treat" social hours following two of the evening events.

The large-scale exhibits of the Annual Exposition of Science and Industry and the programs of the AAAS Science Theatre — both, necessarily, only for registrants—are in themselves worth a trip to Chicago. Optical companies, instrument makers, supply houses, publishers of books, maps, and encyclopedias, and others who provide the tools and supplies scientists and teachers use, collectively, have invested a large sum for the opportunity to meet those who use their products. No one who attends the meetings should fail to visit the more than 90 booths.

An outline of the highlights of the meeting and other pertinent information 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.

Address of the Tau Beta Pi Association; 27 Dec., evening; Donald A. Dahlstrom, president, Tau Beta Pi Association, presiding. John T. Rettaliata, Illinois Institute of Technology, will introduce the speaker; Paul E. Klopsteg, president, American Association for the Advancement of Science, will represent the AAAS. "A New Order of Technological Challenge in the Nation's Space Program," by T. Keith Glennan, National Aeronautics and Space Administration. After the address there will be an informal social hour with a "Dutch treat" bar available.

AAAS Presidential Address: 28 Dec., evening; Paul E. Klopsteg, presiding. "The Development of a Science Policy," by Wallace R. Brode, science adviser, Department of State, and retiring president of the AAAS. Prior to the address Edward L. Ryerson (Inland Steel Company), general chairman of the Chicago meeting, will speak briefly. After the address there will be an informal AAAS presidential reception in the Terrace Casino and adjacent foyer of the Morrison 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. "The Adventure of Learning," Lee A. DuBridge, president, California Institute of Technology. Wallace R. Brode, retiring president, will represent the AAAS. After the address there will be an informal social hour with a "Dutch treat" bar available.

Annual Lecture and Film of the National Geographic Society; 30 Dec., evening. "Dzibilchaltun: Lost City of the Maya," E. Wyllys Andrews, Tulane University. Chauncey D. Leake, president-elect, will represent the AAAS.

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.

Part I, 26 Dec., evening. Alan T. Waterman, director, National Science Foundation, will preside. "How Did Life Begin?" Sidney W. Fox, director, Oceanographic Institute, Florida State University; "How Can Artificial Satellites Help Scientific Research?" William H. Pickering, director, Jet Propulsion Laboratory, California Institute of Technology. Part II, 27 Dec., afternoon. Alan T. Waterman will preside. "Genes, Viruses, and Cancer," Wendell M. Stanley, director, Virus Laboratory, University of California; "Elementary Particles of Modern Physics," Robert E. Marshak, chairman, Department of Physics and Astronomy, University of Rochester.

AAAS Conferences

In addition to the Academy Conference, several conferences have become recurrent events at AAAS meetings. These conferences are open to all who are interested. Academy Conference, 27 and 28 Dec.; Conference on Scientific Communication, 29 and 30 Dec.; Conference on Scientific Manpower, 28 Dec.

AAAS General Sessions

Science in the Promotion of Human Welfare. Establishment of the AAAS Committee on Science in the Promotion of Human Welfare was authorized at the Washington Council Meeting of the AAAS in 1958. Members of the committee are: Barry Commoner, chairman; Robert B. Brode; Harrison Brown; T. C. Byerly; Laurence K. Frank; H. Jack Geiger; Frank W. Notestein; Margaret Mead, ex officio.

"Science and Our Future," 27 Dec., morning. Symposium arranged by Barry Commoner, Washington University, who will preside. Speakers: Norbert Wiener, Massachusetts Institute of Technology; Brock Chisholm, formerly director-general, World Health Organization; H. Burr Steinbach, chairman, Department of Zoology, University of Chicago.

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 through coopera-

tive action than by any single scientific group working alone.

Session; 27 Dec., evening. Brother G. Nicholas, University of Notre Dame, will preside. "The Extended Science Teaching Improvement Program," John R. Mayor, AAAS. Discussants: F. B. Dutton, Michigan State University; J. A. Brown, University of Delaware; J. R. C. Brown, University of Maryland. "NASDTEC Study of Teacher Certification," William P. Viall, associate director, Washington, D.C. Panel discussion, "A Report on Recommendations for the Preparation of High School Teachers of Science and Mathematics —1959." Participants: Harold E. Wise, University of Nebraska; E. J. McSwain, Northwestern University; Charles E. Olmsted, University of Chicago; Wayne Taylor, Michigan State University.

Session; 30 Dec., afternoon. John R. Mayor, AAAS, presiding. "Secondary School Science Curriculum Studies." Speakers: Malcolm K. Smith, Physical Science Study Committee of Educational Services, Inc.; E. G. Begle, Yale University; Arnold B. Grobman, University of Colorado; Robert L. Heller, University of Minnesota; Robert Silber, Central High School, Evansville, Indiana.

AAAS Popular Lecture

The Committee on AAAS Meetings has felt that each annual meeting of the Association might well include a lecture on a scientific subject, by an eminent authority, especially for the interested citizens of the community. Such lectures, which are regular occurrences at the meetings of the British Association, have occasionally been held under AAAS auspices, but there have been none in recent years. This year's Popular Lecture, sponsored by the Association as a whole, is open to all interested persons on a first-come basis: 29 Dec., evening; George Gaylord Simpson, of the Museum of Comparative Zoology, Harvard University, will lecture on "The World into Which Darwin Led Us." Chauncey D. Leake, College of Medicine, Ohio State University, president-elect of the AAAS, will preside.

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—throughout the meeting period. Note that, in the following schedule, programs are repeated at different times to increase the opportunities for those attending the sessions of the 126th meeting to see particular films. The Association is greatly indebted to all those who made these pictures and lent them for showing. Admission is restricted to those who wear the AAAS Convention Badge.

Hours of the Science Theatre. 27-29 Dec., 10 A.M. to 6 P.M.. 30 Dec., 10 A.M. to 2 P.M.

Sunday Morning, 27 Dec.

The X-17 Story. Presented by Air Force Film Library Center.

Refining Copper from the Sudbury Nickel Ores. Produced by International Nickel Company, Inc.

The Bottom of the Sea. Produced by Columbia Broadcasting System for "Conquest."

Life of the Molds. Produced by Chas. Pfizer & Co., Inc.

Hospital Sepsis—A Communicable Disease. Produced by American Medical Association, American College of Surgeons, American Hospital Association, and Johnson and Johnson.

People to People. Produced by Interdepartmental Committee on Nutrition for National Defense.

Journey into Spring. Produced by British Transport Service for British Information Service.

The Georges Bank Radar Station (Texas Tower No. 2). Produced by Charles Hegyes for Raymond International and DeLong Corporation.

Sunday Afternoon, 27 Dec.

Solar Flares. Produced by Audio-Visual Education Center in collaboration with McMath-Hulbert Observatory.

Rocket Range Australia. Produced by the Australian Commonwealth Film Unit in conjunction with the Department of Supply.

Dislocations in Graphite. Produced by Atomics International, a division of North American Aviation, Inc., and the United States Atomic Energy Commission.

The World of Microbes. Produced by Tokyo Cinema.

Cancer Cells. Produced by Tokyo Scientific Cinema.

Life Before Birth. Produced by Columbia Broadcasting System for "Conquest."

Fire Ant on Trial. Produced by Agricultural Research Service, United States Department of Agriculture.

Quetico. Produced by Quetico Foundation.

Seven Bridges of Koenigsberg. Produced by Bruce Cornwall Productions.

Tick Paralysis in Man and Animals in North America. Produced by the Rocky Mountain Laboratory of the National Institutes of Health.

Monday Morning, 28 Dec.

Survie du Coeur. Produced by Société Nouvelle Pathé Cinema.

Cave Dwelling Fauna. Produced by Filmtec Production.

Paths of Steel. Produced by United States Steel Corporation.

A Tree is Born. Produced by Forest Service, United States Department of Agriculture.

Oil from Rubber. Produced by Esso Research Corporation.

Water Control. Produced by the Portland Cement Association.

Shock Waves in Schlieren Film. Produced by Shell International.

Warning in the Dark. Produced by Institute for Experimental Psychology, University of Innsbruck, Austria.

Disorders of the Heart Beat. Produced by Churchill-Wexler Film Productions.

Cobalt-60 Radiotherapy of Cancer. Produced by Otto F. Joklik, Transcontinental Atomic Company.

Monday Afternoon, 28 Dec.

Same as Sunday morning, 27 Dec.

Tuesday Morning, 29 Dec.

Same as Sunday afternoon, 27 Dec.

Tuesday Afternoon, 29 Dec.

Same as Monday morning, 28 Dec.

Wednesday, 30 Dec.

The X-17 Story. Presented by Air Force Film Library Center.

Solar Flares. Produced by Audio-Visual Education Center in collaboration with McMath-Hulbert Observatory.

Dislocations in Graphite. Produced by Atomics International, North American Aviation, Inc., and Atomic Energy Commission.

The World of Microbes. Produced by Tokyo Cinema.

Hospital Sepsis — a Communicable Disease. Produced by American Medical Association, American College of Surgeons, American Hospital Association, and Johnson and Johnson.

Life Before Birth. Produced by Co-

lumbia Broadcasting System for "Conquest."

The Bottom of the Sea. Produced by Columbia Broadcasting System for "Conquest."

Quetico. Produced by Quetico Foundation.

Journey into Spring. Produced by British Transport Service for British Information Service.

Other Symposia

Mathematics. "The New Look in Mathematical Education"; "Trends in the Applications of Mathematics"; "Today and Tomorrow in the World of Computers."

Physics. "Recent Advances in Physics" (four sessions).

Chemistry. "Structure and Metabolism of Collagen"; "Some Recent Developments in Organic Chemistry"; "Some Recent Advances in Inorganic and Nuclear Chemistry"; "High Energy Radiation Chemistry of Proteins and Amino Acids."

Astronomy. "The Solar System"; "Astronomical Photoelectric Photometry."

Geology and Geography. "Quantitative Terrain Studies" (three sessions); "Great Lakes Basin" (three sessions); "The Geographer's Role in Transportation Studies"; "Southwest Asia and Northern Africa"; "Economic Changes in Underdeveloped Areas"; "Origin and Development of Limestone Caverns."

Biological Sciences. "Some Unsolved Problems in Biology, 1959: I, Organization of the Cell; II, The Cell in Development and Inheritance"; "The Impact of Electron Microscopy on Biology" (two sessions); "Interactions in Nature: Modern Ecology" (four sessions); "Sand Dune Systems" (two sessions).

Zoological Sciences. "Speciation and Raciation in Cavernicoles" (two sessions); "Invertebrate Classification"; "The Physiology of Reproduction in Birds" (four sessions).

Botanical Sciences. "Classification of Fungus Groups of Debatable Affinity" (two sessions).

Anthropology. "Biology and History in Archaeology"; "Technology as a Backstop to Anthropology and Archaeology" (three sessions).

Psychology. "Verbal Learning and Meaningfulness"; "Unconscious Processes"; "Brain Function and Learning."

Social and Economic Sciences. "World Population and International Relations"; "Scientific Knowledge and Public Policy-making"; "Psychiatry and Criminology"; "Problems in Police Administration"; "Research and Training in Criminology"; "Use of Computers in Simulation of Social Behavior"; "Trends in Family Formation and Structure"; "Descriptive Statistics"; "Statistical Techniques"; "The Pharmacists' Method of Converting to Metrics"; "The Underdeveloped Areas."

History and Philosophy of Science. "Theory Construction in Logical and Historical Perspectives" (two sessions); "Empirical and Conventional Elements in Physical Theory"; "Induction, Probability and Simplicity"; "The Logic of Variables and Constants"; "Philosophical Issues of the Quantum Theory"; "Methodological Problems of Psychology and the Social Sciences"; "The Theory of the Public Interest"; "The Synthesis of Organization."

Engineering. "National and International Aspects of Systems of Units" (four sessions).

Medical Sciences. "Diet, Serum Lipids, Lipid Metabolism, and Atherosclerosis"; "Aging" (four sessions); "Premedical and Predental Education"; "Space Physiology III" (two sessions); "Roots of Behavior: Animal Behavior" (four sessions).

Dentistry. "Oral Aspects of Aging"; "American Dentistry at the Centennial Crossroad."

Pharmacy. "The Scientist's Part in Protection of the Public" (two sessions).

Agriculture. "Germ Plasm Resources in Agriculture: Development and Protection" (five sessions).

Industrial Science. "Science Looks at the Food Industry"; "Management Science."

Education. "Organic and Social Factors in Mental Deficiency and Their Significance to the Educational Program"; "Weapons of the School in the War Against Delinquency"; "Natural History"; "Man and Space Travel"; "Research Symposium"; "How Attitudes Affect Disease Control."

Science in General. "Senior Academy Problems"; "Upper Atmosphere: Solar Relations" (two sessions); "Research in Documentation"; "International Communication in Science"; "Principles of Communication."

AAAS Business Sessions

The Board of Directors of the Association will meet in a private suite in the Morrison Hotel at 11 A.M. Sunday, 27 Dec., and again, at the same hour, on Monday, 28 Dec.

The Council of the Association will meet Sunday afternoon, 27 Dec., at 4 P.M. in the Cotillion room, Morrison Hotel. A second session of the Council is scheduled for Wednesday morning, 30 Dec., at 9 A.M. in the same room. All members of the Council have been notified individually, and it is hoped that all can attend. Subjects to be considered by the Council (in addition to the agenda prepared) usually are first brought before the Board of Directors through the Executive Officer. During the meeting, communications for the Board of Directors should be submitted in writing and left at the Morrison Hotel mail desk, addressed to Dael Wolfle.

There will be a joint luncheon and planning session of all Section Officers and the Committee on AAAS Meetings on Monday, 28 Dec., at 12 noon. Dael Wolfle and Raymond L. Taylor, luncheon cochairmen; Arthur W. Galston, Yale University, committee chairman.

Hotel Headquarters

The Morrison 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 author's abstracts and the only source of press releases—is in the Hollywood Room on the mezzanine.

The Main Registration-Information Center, Visible Directory of Registrants, AAAS Office, AAAS Science Theatre, and the Annual Exposition of Science and Industry are all in the Morrison Hotel.

The headquarters of the 18 sections and of the participating societies follow (the societies are grouped in the same sequence as the letters of the sections with which they are affiliated).

Morrison. AAAS; Press; AAAS Committee on Science in the Promotion of Human Welfare; AAAS Cooperative Committee on the Teaching of Science and Mathematics; AAAS Sections A-Mathematics, B-Physics, D-Astronomy, F-Zoological Sciences, G-Botanical Sciences, I-Psychology, N-Medical Sciences, Np-Pharmacy, O-Agriculture, and P-Industrial Science; Association for Computing Machinery, Society for Industrial and Applied Mathematics; American Astronautical Society, American Meteorological Society, Electron Microscope Society of

America, Physics Club of Chicago, Sigma Pi Sigma; American Association of Clinical Chemists; Astronomical League; National Geographic Society; American Society of Zoologists, Society of Systematic Zoology; American Genetic Association, American Institute of Biological Sciences, American Society of Limnology and Oceanography, American Society of Naturalists, Beta Beta Beta Biological Society, Ecological Society of America, Genetics Society of America, Mountain Lake Biological Station, Nature Conservancy, Society of General Physiologists; American Society of Plant Taxonomists, Botanical Society of America, Mycological Society of America; Tau Beta Pi Association, Western Society of Engineers; Alpha Epsilon Delta, American Physiological Society, American Psychiatric Association, Gerontological Society, International Association of Milk and Food Sanitarians; American Association of Colleges of Pharmacy, American College of Apothecaries, American Pharmaceutical Association, Scientific Section, American Society of Hospital Pharmacists, National Association of Boards of Pharmacy; American Dairy Science Association, American Society for Horticultural Science, American Society of Agronomy, American Society of Animal Production, Crop Science Society of America, Gamma Sigma Delta, Poultry Science Association, Society of American Foresters, Soil Science Society of America; Society for Industrial Microbiology, Institute of Management Sciences; American Council on Women in Science; American Geophysical Union; Argonne National Laboratory; Chicago Academy of Sciences; Conference on Scientific Communication; Honor Society of Phi Kappa Phi; International Geophysical Year; National Academy of Sciences; National Association of Science Writers; National Science Foundation; Scientific Research Society of America; Sigma Delta Epsilon; Society of the Sigma Xi; United Chapters of Phi Beta Kappa; U.S. Atomic Energy Commission.

Registration

The AAAS Main Registration-Information Center is located in the lobby of the Morrison Hotel. It will be open as follows: 26 Dec., 27–29 Dec., 8 A.M. to 8 P.M.; 30 Dec., 8 A.M. to 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 registants (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 126th meeting, there are two supplementary hotel registration desks, as follows: Sherman, 26 Dec., 10 A.M. to 9 P.M.; 27–28 Dec., 8 A.M. to 8 P.M., La Salle, 27–28 Dec. 9 A.M. to 8 P.M.; 29 Dec., 9 A.M. to 6 P.M.

Guests at the Hamilton Hotel will find the Morrison convenient for registration. Guests at the Bismark should register at the Sherman.

Registration Fee. The AAAS registration fee, which, intentionally, has been kept at a minimum, is $3; a spouse or child of senior-high-school age not wishing a separate Program, may register for $1, if he registers at the same time as the accompanying regular registrant. Each regular registrant receives a receipt, a Convention Badge, and the General Program—the only publication containing the programs of the 18 AAAS sections and of the 94 participating organizations. Any person who purchases an advance copy of the General Program but does not register in advance and who then attends the meeting has agreed to complete his registration by paying $1—and is expected to do so—at the Main Registration Center, or at one of the two supplementary registration desks, after which he receives 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 126th convention of the Association. The badge should be worn throughout the meeting because (i) it reminds others to register, and (ii) it is needed for admission to the Annual Exposition of Science and Industry, the AAAS Science Theatre, and the AAAS Smoker, and (iii) 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, on the first floor of the Morrison Hotel. It is open at all times. The registration cards of all registrants are placed in the Visible Directory soon 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, Parlor E, on the second floor of the Morrison Hotel. Telephone and personal messages will also be filed alphabetically in the AAAS Office, and the names of those for whom they are intended will be posted on a bulletin board near the Visible Directory. The Association assumes no responsibility for the delivery of mail or of telegrams.

Society Meal Function Tickets. Tickets to the dinners or luncheons of any section or any participating society are obtainable only from its representatives, either during preceding sessions, at the AAAS Information Center, or at supplementary Registration Desks.

Local Travel Directions

At this 126th meeting, since the five hotels used are all within two blocks or less of each other, no travel directions are necessary except, perhaps, to reach the points of interest listed below. For these, if necessary, ask at the AAAS Information Center in the Morrison Hotel.

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, as noted in their programs.

Chicago, second largest city of the nation, is justly famous for its downtown skyscrapers, scenic lake shore, and extensive park system. The following are of particular interest.

Adler Planetarium and Astronomical Museum. Lake Front, near the Natural History Museum. Open daily, except Christmas and New Year's, 10 A.M. to

5 P.M.; show nights (Tuesday and Friday) until 9:30 P.M.

Art Institute of Chicago. Michigan Ave. opposite Adams St. Open weekdays 9 A.M to 5 P.M.; Sundays 12 noon to 5 P.M.

Chicago Academy of Sciences. 2001 N. Clark St., in Lincoln Park. Open daily, except Christmas, 10 A.M. to 5 P.M.

Chicago Board of Trade. La Salle St. and Jackson Blvd. Open Monday to Friday, except holidays, 9:30 A.M to 1:15 P.M. Movie every 45 minutes.

Chicago Board of Trade Observatory. La Salle St. and Jackson Blvd. Open daily 9 A.M. to 5 P.M., except Christmas.

Chicago Historical Society. N. Clark St. and W. North Ave. in Lincoln Park. Open Monday through Saturday 9:30 A.M. to 4:30 P.M; Sunday 12:30 P.M. to 5:30 P.M.

Chicago Natural History Museum. E. Roosevelt Rd. and Lake Shore Dr. Open daily 9 A.M. to 5 P.M.

Chicago Zoological Park, Brookfield, Ill. Open daily 10 A.M. to 5 P.M.

Lincoln Park Conservatory. Lincoln Park between W. Webster and W. Fullerton Sts. Open daily 9 A.M. to 5 P.M. No guide service after 3 P.M. or on Saturday, Sunday, and holidays.

Lincoln Park Zoo. Lincoln Park, between W. Webster and W. Fullerton Sts. Open daily 9 A.M. to 5 P.M.

Museum of Science and Industry. E. 57 St. and South Shore Dr. Open daily 9:30 A.M. to 5:30 P.M.; Sunday and holidays, 10 A.M. to 6 P.M. The U.S. Science Exhibits from the International Science Exhibition, Brussels World's Fair 1958, are now on display at the Museum of Science and Industry.

John G. Shedd Aquarium. E. Roosevelt Rd. and Lake Shore Dr. Open daily, except Christmas and New Year's, 10 A.M. to 4 P.M.

University of Chicago Oriental Institute. E. 58 St. and University Ave. Open 10 A.M. to 5 P.M. except Monday and holidays.

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, has been director of this service for most meetings since 1938.

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 Press Room in the Morrison 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 Association.

This year, the AAAS is fortunate in having the continued services of Dr. Negus, and also the services of its Local Committee on Public Information, headed by Allen H. Center, vice president in charge of public relations, Leo Burnett Company, Inc.

Chicago Committees

It would be quite impossible to 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 Edward L. Ryerson accepted the general chairmanship of the Chicago meeting without delay, appointed the local committees promptly, and has kept in close touch with all phases of this year's meeting.

General Chairman

Edward L. Ryerson, Inland Steel Company.

Committee on Exhibits

William V. Kahler, president, Illinois Bell Telephone Company, *chairman.*

Robert C. Becherer, president, Link-Belt Company.

Joseph L. Block, chairman, Inland Steel Company.

Nelson C. Dezendorf, vice president, Electro-Motive Division, General Motors Corporation.

John W. Evers, president, Commonwealth Edison Company.

Robert S. Ingersoll, president, Borg-Warner Corporation.

Edwin A. Locke, Jr., president, Union Tank Car Company.

Lenox R. Lohr, president, Museum of Science and Industry.

Brooks McCormick, executive vice president, International Harvester Company.

Clair M. Roddewig, president, Association of Western Railways.

Carroll Roseberry, vice president, Westinghouse Electric Company.

Ross D. Siragusa, president, Admiral Corporation.

W. J. Peak, assistant vice president, Illinois Bell Telephone Company, *secretary.*

Committee on Finance

Harry O. Bercher, executive vice president, International Harvester Company, *chairman.*

Other members. Allen Center, chairman of the Committee on Public Information, and all the members of the Committee on Exhibits are serving also on the Committee on Finance.

Committee on Physical Arrangements

James H. Smith, associate superintendent, Chicago Public Schools, *chairman.*

Mrs. Muriel Beuschlein, assistant professor, Department of Biology, Chicago Teachers College.

Raymond M. Cook, dean, Chicago Teachers College.

Miss Lorraine A. DeVoe, curriculum consultant in science, Chicago Public Schools.

George A. DiPrima, curriculum consultant in science, Chicago Public Schools.

Louis J. DiSandro, curriculum consultant in science, Chicago Public Schools.

James P. Fitzwater, director, Division of Visual Education, Chicago Public Schools.

David J. Hefferman, assistant superintendent, Chicago Public Schools.

Philip Lewis, director, Bureau of Instruction Materials, Chicago Public Schools.

Thaddeus J. Lubera, associate superintendent, Chicago Public Schools.

Edward C. Schwachtgen, curriculum consultant in science, Chicago Public Schools.

Hobart H. Sommers, assistant superintendent, Chicago Public Schools, *vice chairman.*

Committee on Public Information

Allen H. Center, vice president in charge of public relations, Leo Burnett Company, Inc., *chairman.*

Miss Effie Alley, science editor, *New Chicago American.*

Frederick J. Ashley, director of public relations, Museum of Science and Industry.

John L. Bach, Public Relations Department, American Medical Association.

Miss Mildred Bruder, director of public relations, Chicago Public Library.

Leo Brown, public relations director, American Medical Association.

Daniel G. Cahill, manager of public relations, Illinois Institute of Technology.

Robert Dressler, program manager, station WNBQ–TV.

A. C. Field, program manager, station WGN–TV.

Tom Foy, news director, station WGN.

Gene Gillette, division news manager, United Press International.

Thelma C. Heatwole, Research Division, Armour and Company.

Herbert Hibnick, public relations, Toni Company.

John Holland, Publicity Department, radio station WIND.

Richard D. Johnson, program manager, radio station WMAQ.

Carl W. Larson, publicity director, University of Chicago.

Jack Laugen, director of information services, Northwestern University.

William A. Logan, director, Bureau of Public Information, American Dental Association.

Dominic Quinn, program director, radio station WIND.

Harold Safford, program director, station WLS.

Arthur J. Snider, science editor, Chicago *Daily News.*

Miss Patricia Hanson, TV station WTTW, director of AAAS radio and television programs.

Beverly J. Smith, Leo Burnett Company, Inc., *secretary.*

Honorary Reception Committee

Edward L. Ryerson, Inland Steel Company, *chairman.*

William E. Adams, secretary, American College of Surgeons.

William J. Beecher, director, Chicago Academy of Sciences.

Robert Bean, director, Chicago Zoological Park.

F. J. L. Blasingame, executive vice president, American Medical Association.

Fred R. Bruce, executive secretary, Western Society of Engineers.

K. L. Burroughs, director, Aeronautical University.

C. C. Caveny, executive dean, University of Illinois, Undergraduate Division.

Walter H. Chute, director, John G. Shedd Aquarium.

Victor Conquest, vice president and general manager, Armour Research Laboratories.

Raymond M. Cook, dean, Chicago Teachers College.

C. R. Crakes, educational consultant, DeVry Technical Institute.

Clifford E. Cregg, director, Chicago Natural History Museum.

Bernard S. Friedman, chairman, Chicago section, American Chemical Society.

H. Close Hesseltine, president elect, Illinois State Medical Society.

Norman Hilberry, director, Argonne National Laboratory.

Paul H. Jeserich, president, American Dental Association.

Robert I. Johnson, acting director, Adler Planetarium and Astronomical Museum.

Lawrence A. Kimpton, chancellor, University of Chicago.

Lenox R. Lohr, president, Museum of Science and Industry.

Herbert E. Longenecker, vice president, University of Illinois Chicago Professional Colleges.

Allan McNab, director of administration, Art Institute of Chicago.

James F. Maguire, president, Loyola University.

John Maxon, director of fine arts, Art Institute of Chicago.

J. Roscoe Miller, president, Northwestern University.

Leslie G. Morey, vice president, Chicago Technical College.

Comerford J. O'Malley, president, De Paul University.

Joseph T. O'Neill, president, Illinois State Medical Society.

R. Marlin Perkins, director, Lincoln Park Zoo.

John T. Rettaliata, president, Illinois Institute of Technology, and president, Western Society of Engineers.

Henry T. Ricketts, chairman, Board of Governors, Institute of Medicine of Chicago.

John J. Sheinin, president, Chicago Medical School.

R. Sargent Shriver, Jr., president, Chicago Board of Education.

Edward J. Sparling, president, Roosevelt University.

George C. Turner, president, Chicago Medical Society.

Benjamin C. Willis, general superintendent of schools, Chicago Board of Education.

Annual Exposition of Science and Industry

The large-scale AAAS Annual Exposition of Science and Industry will be located on the first floor of the Morrison Hotel. The exposition will be open only to registrants. The exhibits are of interest to adult professional scientists and are not intended for young people. Accordingly, admission is restricted to registrants; those younger than senior high school age are not admitted. The hours of the exposition are as follows: 26 Dec., 7 to 10 P.M.; 27–29 Dec., 10 A.M. to 6 P.M.; 30 Dec., 9 A.M. to 5 P.M.

AAAS New Member Service—Science, AAAS Publications

Foyer. 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 as of 1 January. Those already members conveniently can nominate others for membership.

Included in the annual dues of $8.50 (for 1960), 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 Science Libraries

Booth 25. The AAAS administers this experimental loan library program with the financial support of the National Science Foundation to encourage the improvement of science and mathematics instruction, to stimulate the enlargement of the science collections of school libraries, and to interest more young people in choosing science careers. It has two phases: the *Traveling High School Science Library* of 200 titles which has been in circulation since the fall of 1955, and the *Traveling Elementary School Science Library* of 160 books inaugurated in the fall of 1959. The high school program currently serves 1700 schools and the elementary program 800 schools. Both collections will be exhibited and annotated lists of the books will be available. Another feature of the exhibit is the master set of over 400 paperbound science books upon which the popular annotated list, *An Inexpensive Science Library*, has been based, and which stimulates reading by high school students, college undergraduates and nonspecialist adults.

As an aid to schools purchasing science and mathematics books under the provisions of Title III of the National Defense Education Act of 1958, the AAAS has published, with the collaboration of subjectmatter specialists, *The AAAS Science Book List*. This represents the first time a comprehensive recommended list of books for high school and public libraries, prepared by scientists, has been made available and which is rapidly being adopted as a standard by the several states. The list is available at $1 per copy.

Aero Service Corporation

Booth 1. This year's exhibit by the Relief Model Division of Aero Service Corporation will feature the completely new, three-dimensionally formed, 18-inch relief globe. This globe has been in compilation for over 2 years and is the first full-color, preprinted relief globe ever placed on the map and globe market. In addition, Aero Service will also feature a prototype of their relief model of the moon, as well as the standard Aero relief maps of major countries, continents, and individual states.

American Institute of Biological Sciences

Foyer. The AIBS-sponsored Biological Sciences Curriculum Study, supported by the National Science Foundation, is the outgrowth of the opinion held by many biologists in the United States that life sciences curricula at all levels of instruction should be reviewed in the light of recent technical and scientific advances. The major responsibilities for the BSCS are to design a coordinated and modern curriculum in biology, to recommend an appropriate placement of the science with respect to other courses of study, and to explore the possibility of designing special courses for exceptional students at all levels.

The exhibit illustrates the organizational and operational features of the study group. Brochures and newsletters describing the project in greater detail will be available.

American Optical Company

Booth 44. The Instrument Division of the American Optical Company will show its AO-Baker interference microscope, which will be demonstrated with both shearing and double-focus objectives. Another important aspect of the display will be representative models of the Phasetas and Microstar laboratory microscopes. Outstanding advantages of these microscopes include interchangeable and reversible monocular, binocular, and trinocular bodies; focusable stage with variable Autofocus; wide selection of mechanical stages, including the Micro-Glide stage; Dualcone revolving nosepiece; top-quality optics; choice of built-in base illuminator or standard base with mirror; and durable, dove-gray Epoxy finish. Several Cycloptic stereoscopic microscopes will be shown, together with a remarkable new stereocamera accessory. AO representatives will show how stereophotomicrographs can be made in just four quick steps. The vertical illuminator for the Cycloptic stereoscopic microscope will be on display. Techniques in proper illumination, so necessary to good microscopy, will be demonstrated with the Ortho-Illuminator. AO will also exhibit its new overhead Delineascope and the amazing Technamation process—a revolutionary projection method that adds motion to still transparencies.

Association of American Railroads

Booth 37. An exhibit of railroad research activities will show the electrical pickup, amplifier, and recording equipment used to study the dynamic action of railroad equipment, track, and structure by the measurement of displacement, acceleration, and stress. The measurement of displacement by the double integration of acceleration will be demonstrated and recorded on pen recorders, oscillographs, and oscilloscopes. Visitors may actuate the pickup equipment to produce indications on the recorder or oscilloscope. Literature describing many other railroad research activities will be available.

Association of American University Presses

Booth 51. Each press participating in the exhibit is a separate publishing entity, producing technical, medical, and scholarly books of vital interest. This joint exhibit enables you to see books from a number of the university presses and, if you wish, to order them at the booth. A check list of all the books on display is available.

Basic Books, Inc.

Booth 2. The exhibit of Basic Books, Inc., publishers, features new and recent titles of interest ranging from the behavioral sciences to the natural and physical sciences. Among the authors represented are Brand Blanshard, J. A. V. Butler, George W. Corner, C. D. Darlington, Edward Hutchings, Jr., Ernest Jones, Melanie Klein, P. B. Medawar, Karl Menninger, Gardner Murphy, Karl R. Popper, Jean Rostand, and Niko Tinbergen.

Bell Telephone System

Booths 64, 65, and 66. The Bell Telephone System exhibit will show how through science Bell Telephone services are becoming more abundant, economical, rapid, reliable, and efficient to meet the needs of the nation's expanding

economy. Among the many scientific projects at Bell Telephone Laboratories, the exhibit tells about electronic switching, crystals, semiconductors, and magnetics. The importance of some Bell System developments in the defense of the nation is explained. A demonstration tells about world-wide communications by satellites. On display is an actual model of the Vanguard I satellite which has been circling the earth since 17 March 1958 and is still sending signals from its radio powered by Bell solar batteries.

Biological Research Products

Booth 74. Comparative anatomy is most easily taught with the assistance of high-quality, inexpensive anatomical and fetal specimens derived from cattle, sheep, and hogs. Considerable emphasis is placed on the true comparativeness to human anatomy and the advantages available in better packaging in glass for individual use and attention and for bulk delivery. There are individually packaged items such as eyes, hearts, brains and kidneys and other items for single and double student usage, and there are bulk containers of materials for mass class distributions. The use of the fetal pigs with circulatory systems injected with red and blue latex is demonstrated as the most adaptive specimen for both high schools and colleges. Packaged in polyethylene and with excellent and inexpensive manuals, they represent the lowest cost teaching materials for science, biology, and zoology in these high-cost times. We have the talent to create and the skill to produce.

California Corporation for Biochemical Research

Booth 32. California Corporation for Biochemical Research will have representatives on hand to discuss exciting news about our new products and our expanded carbon-14 program. Literature and aids for biochemical research will be distributed.

Cambridge University Press

Booth 10. 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, Lorth Rutherford, Bertrand Russell, A. N. Whitehead, and Sir Charles Sherrington.

Carolina Biological Supply Company

Booth 92. Carolina Biological Supply Company cordially invites all biologists of AAAS to visit with us in our booth. This year we will exhibit the items which we are listing in our catalog for the first time. These items show new departures or improvements in standard laboratory supplies. On hand will be representatives of our staff to demonstrate and discuss new techniques which are being developed. Registration will be provided for our mailing lists for catalogs and *Carolina Tips*. We welcome this opportunity to become acquainted with you who use our materials.

Central Scientific Company

Booth 80. Central Scientific Company will exhibit new instruments for science teachers and laboratory workers, including new high vacuum pumps, thermocouple and discharge gages for vacuum measurements, a complete line of vacuum couplings and connectors; micro and motor driven lab-jacks; coefficient of resistance apparatus; infinite resistance voltmeter; Brownian movement apparatus; kinetic theory apparatus; transistor demonstrator; microwave optics equipment; the Mitac gyroscope; improved dial-type etched circuit resistance boxes; low-cost interferometer; high voltage generators; up-to-the-minute periodic tables of the elements; atomic models; combination hotplate magnetic stirrers; and other laboratory apparatus.

Coca-Cola Company

Booth 31. Ice-cold Coca-Cola will be served through the courtesy and cooperation of the Coca-Cola Bottling Co. of Chicago, Inc., and the Coca-Cola Company.

Collier's Encyclopedia

Booth 5. On display here is the scholarly written and continuously revised, newest, major, indexed reference set on the market. Attractively illustrated, *Collier's Encyclopedia* features over 4000 pages devoted to contemporary science, mathematics, and allied areas. You will find outstanding articles by topnotch authorities on space satellites, guided missiles, rockets, and atomic science. Also on display is the world-famous collection of scientific and literary writings known as the *Harvard Classics*. In this library of 51 volumes, attractively presented and easy to read, one can peruse the original research of physicist Michael Faraday, chemist von Helmholtz, biologist Louis Pasteur, Bacon, Paré, Harvey, Newton, Jenner, and Darwin. You will also find copies of *Collier's World Atlas* and *Book of Facts*. This is one of the most useful atlases published and most reasonably priced too.

Coulter Electronics, Inc.

Booth 88.

Davis Scientific Instruments

Booth 70. Davis Scientific Instruments is well known to psychologists, particularly those in the experimental and behavorial branches, as a supplier of sturdy, dependable instruments. New equipment for generating programs of events within individual experiments has recently been developed and will be displayed for the first time. This equipment can also be employed in teaching machines for both research and classroom use. Also on display will be the well-known PD-104 food pellet dispenser and the LR-130 liquid pump. This equipment for the "demand" feeding and watering of laboratory rats has become the "standard" with psychologists in experimental animal behavior, but it also has applications in the other biological sciences as well as in the medical sciences.

Denoyer-Geppert Company

Booths 90 and 91. The Denoyer-Geppert Company exhibit will consist of colorful, dissectible models of human anatomy, similar models used in the fields of botany and zoology; some osteological preparations will also be exhibited. The new Denoyer-Geppert Biocraft microscopes will be exhibited for the first time, along with a selection of high-grade microscope slides. The exhibit will include also a display of biological specimens embedded in transparent plastic. The biology department exhibit will be supplemented by an exhibit of geological, geographical, historical, and foreign language maps, atlases, and globes. The globe exhibit will include globes for instruction in geography, astronomy, and mathematics. Wall charts in this field will also be displayed. The exhibit will include also a new and very interesting series of colorful wall charts on atomic theory. This is a line of teaching materials that has been developing steadily since its inception in 1916.

Lester A. Dine Co.

Booth 20. Featuring the new sensational Eastman Kodak Startech camera which is the world's only camera that has been specifically created for closeup photography. This inexpensive camera is designed with an F64 diaphragm opening (this is just like a pin-point for a lens) which means that no previous photographic knowledge is necessary to take amazing color slides or prints with the most amazing depth and clarity. The Startech takes a picture from a subject size of 3 inches square to 3 feet square as simply as a simple box camera. In addition, we will show the latest in projectors and viewers for showing color pictures in a classroom or laboratory.

Educational Testing Service

Booth 8. Tests, testing programs, research, and services for selection, guidance, scholarship competitions, placement, educational evaluation. ETS develops tests for direct sale to qualified users in schools, colleges, business, governmental agencies and professional associations; administers nationwide testing programs; builds programs tailored to special needs; conducts fundamental research in measurement, and provides professional advisory services. Recently entered the field of educational film production. Volume 1, *Horizons of Science*, a new film program for the American schools, will be shown during the convention.

Electro-Motive Division, General Motors Corporation

Booth 34. Electro-Motive Division of General Motors has designed a special exhibit for the AAAS Annual Exposition of Science and Industry in keeping with the scientific nature of the show. The heart of Electro-Motive's exhibit is an operating pocket-sized version of an electronic device used in regular production to automatically segregate stellite and standard engine exhaust valves after final inspection. This device became necessary after the introduction of the new stellite valve which was virtually identical in appearance to the standard valve.

The principle of operation of the device is the thermoelectric effect, in which a heated junction of two dissimilar metals produces an electrical potential that is characteristic of the metals employed and temperature of the junction. In this case a constant-temperature copper probe is used, which when placed in contact with the valve face area, develops voltages which are either positive or negative compared to a constant reference voltage—the polarity depending on whether the face area is stellite or stainless steel. This polarity is then used to determine on which side of a transparent "fence" the valve will go. Each type of valve is packaged only on its own side of the "fence", thus reducing the possibility of mixed packaging. In addition to the working demonstration, a mural background depicts the story of Electro-Motive and its principle products—diesel electric locomotives, electric generating peaking plants for utilities, and diesel-electric power for the oil drilling industry.

Elgeet Optical Company, Inc.

Booth 82. A new line of quality microscopes makes its debut at this year's exposition as the Elgeet Optical Company of Rochester, N.Y., introduces the Elgeet-Olympus microscopes. A full range of models will be on display, comprising both research-type instruments and microscopes designed primarily for instructional application. Elgeet representatives will be in attendance to answer questions and to demonstrate the various features and unique flexibility of the new instruments. Already well established in the optical industry as a leader in the design and manufacture of photographic lenses and related equipment for government and industry, Elgeet welcomes this opportunity to mark its entrance into the field of microscopy and to demonstrate to AAAS members the features which make Elgeet-Olympus microscopes outstanding in design, construction, performance, and value.

Encyclopaedia Britannica

Booth 30. A great new edition of the *Encyclopaedia Britannica*, and its correlated fact finding and technical research services, will be on display at this meeting. To those who may be interested in acquiring *Britannica*, there is available a special exhibit discount. Whether your interest is current or for the future, please visit our booth.

Field Enterprises Educational Corporation

Booth 86. The 1960 edition of the *World Book Encyclopedia* represents a major revision of the 19-volume *World Book* which was reviewed as follows in the *AAAS Science Booklist*: "Excellent for young people, should be in every school library, recommended for home use by children, excellent science coverage. Well-selected bibliographies, which have been graded and annotated. A reading and study guide (volume 19) is an important feature." The 20-volume *World Book* was prepared by more than 2500 leading scholars and authorities. Among the 16 living Nobel prize winners who have contributed to the *World Book* are Glenn T. Seaborg, Harold C. Urey, Selman A. Waksman, and Thomas H. Weller.

Folkways Records & Service Corporation

Booth 87. Phonograph records, film strips, and films that demonstrate and document cultures of many people in relation to social, musical, and literary expression in today's world. Makes for a better understanding of man's aspiration to live in one world. Books and catalogs will also be displayed.

Foringer and Company, Inc.

Booth 24. This year the Foringer exhibit will focus primarily upon equipment and apparatus for educational research and the experimental analysis of human behavior. Of course, our well-established line of animal instrumentation has been refined and expanded, and will be represented by recently developed automatic feeding devices for animals and by data recording equipment. But the current interest in educational problems and their solution finds Foringer and Co. ready with a commercially available teaching machine for display to the scientific public. Certainly those with educational research interests, as well as industrial scientists, will not want to pass up this opportunity to explore possible didactic application in their own fields. Other featured aspects of our exhibit will include a variety of automatic stimulus presentation and response elicitation devices adapted specifically for use with human subjects in medico-psychological evaluation settings and in the experimental analysis of behavior. We solicit special attention to the new Osler-Foringer discrimination device designed to aid work with mentally disturbed children at elementary school level.

General Biological Supply House, Inc. (Turtox Products)

Booths 56 and 57. Members of the staff of the General Biological Supply House will be present to greet its many friends and acquaintances. They will be there to meet you personally to discuss any special problems which you may have. Suggestions or ideas of new prod-

ucts or improvements on the present ones, as well as ways in which we may serve you better, will be gratefully acknowledged. Our exhibit will consist of several new and improved teaching aids for biology. We extend to you a cordial invitation if you wish to visit the Turtox Laboratories while you are in Chicago. Transportation from the AAAS Headquarters—to our laboratories and return—will be arranged.

General Electric Research Laboratory

Booth 11. The Research Laboratory will exhibit items from our basic research program, and several of these will be active demonstrations. Specifically, we will have on display the "tunnel diode." This is a new electronic component which we think will have far-reaching effects on the electronic industry. In addition, we will exhibit samples of Lucalox, a new ceramic. Another part of the exhibit will be the "fuel cell," which generates electricity directly from the union of hydrogen and oxygen. The cell has efficiencies of greater than 60 percent, operates at room temperature, and makes no noise. We will have exhibits on fine-particle magnets, ultrasonics, and the thermionic converter.

Graf-Apsco Company

Booth 58. The functionally designed Graf-Apsco microscopes are displayed. As America's leading microscope repair house, our aim in designing these instruments was to make them as foolproof as possible: the usual points of irritation are missing, and the prices are unbelievably reasonable. If you have any repair or obsolescence problems, bring them to us. We shall be glad to help you regardless of the make of instrument you have. In addition to microscopes, a wide assortment of magnifiers and dissecting instruments will be on display.

Grolier Society, Inc.

Booth 61. The Grolier-Americana booth will feature the current edition of the *Encyclopedia Americana*, the *Book of Popular Science*, and science titles from the list of Franklin Watts, Inc. The *Americana* is a standard, scholarly encyclopedia particularly strong in its coverage of the sciences. The *Book of Popular Science* is the only general-purpose science reference set correlated with the general science curriculum and published expressly for use in the school library and in general science classrooms at the junior and senior high school level. Franklin Watts, Inc., a subsidiary of The Grolier Society, is a principal publisher of children's books and is noted for the *First Book* series. 13 Watts titles are included in the *AAAS Reading List for Elementary Schools.* Also available at the exhibit will be material correlating Grolier's *Book of Knowledge* with the elementary curriculum.

Harper & Brothers

Booth 19. Both trade books and college texts and catalogs will be exhibited. Featured will be the new Harper Science Library of paperback science books in library size. Featured catalogs will be the new *Harper Science Books for Children, Kindergarten through Grade Nine* and *Harper Science Books for Young Adults, Grades 10 through 12.*

D. C. Heath and Company

Booth 38. You have been hearing about the revolutionary high school physics course developed by the Physical Science Study Committee at M.I.T. Ask the Heath representative at Booth 38 about this course. See the preliminary editions of the text and laboratory manuals. Heath will also exhibit elementary, high school, and college science and mathematics texts geared to modern educational trends and practices.

Institute of Public Information

Booth 78. Congeners (fusel oil, aldehydes, acids, etc.) are substances found in all alcoholic beverages that provide the taste, bouquet and color. In large amounts, however, 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.

International Harvester Company

Booths 62 and 63. International Harvester Company will display industrial applications of radioisotopes to practical problems in manufacturing and engineering. Examples of radioisotopes incorporated into a process as tracers illustrate wear measurement and process evaluation. Applications of radioisotopes as discrete sources of radiation include radiography of production parts, and process gages. Instrumentation includes ratemeters, scalers, portable survey meters, radiation analyzer, scintillation crystal and geiger tube detectors.

Kahl Scientific Instrument Corporation

Booths 67 and 68. A display of laboratory, meteorological, oceanographic and radiation instrumentation featuring: Dekameter, for dielectric constant determinations applicable to qualitative and purity analyses and water content measurements; HF titrimeter, for simplified indication of titration end points and nondestructive pharmaceutical testing; Hygrofix, for determining moisture content of grains; precision thermometers; sand strata samples; specialized glassware, Piche Atmograph, a recording evaporimeter; pollution meter, to record particulate aerosols; recording theodolite, for tracking and printing flight vectors; resolving anemometer, for elapsed time and directional wind speeds; Tetalux, for remote temperature and humidity indications. Bacterial bottom sampler, for sediment samplings (particularly in coliform studies); conductivity meter, for sea water determinations; high-pressure reversing thermometers, for soundings at the bottom of the deepest oceanic trenches; plastic water bottle, for chemical and biological samplings where metallic ions are undesirable; sheathed surface thermometers; two-meter submarine photometer, to indicate light penetration through the water. Dosage calculating slide rule, for radiation characteristics; electrostatic dust precipitator, to obtain planchet collections of aerosols for monitoring; water evaporator, for planchet collection of suspended particles.

Kewaunee Manufacturing Company

Booths 48 and 49. The exhibit will consist of three glove boxes (safety enclosures) designed for a variety of research and production applications. One will be set up as a radiochemistry safety enclosure for working with alpha and weak beta emitters. Another glove box will be set up as a safety enclosure for bacterial and viral research or experimentation. The third glove box will be a special double-sided enclosure for research or production work requiring a controlled atmosphere.

Labline, Inc.

Booth 28. Labline, Inc. will feature several new laboratory products. To be displayed for the first time, will be the new No. 110 test tube incubator, in which specimens incubate under 37° constant temperature, are fully visible, yet remain completely enclosed in the cabinet. Also to be seen will be the new

1960 models of high and low temperature storage cabinets, magnetic stirrers, centrifuges and chromatographic and electrophoresis apparatus. Labline, Inc., manufactures an extensive line of instruments and apparatus for research, clinical, bio-chemical and industrial laboratories. In attendance will be Alexander I. Newman, president, Charles V. Kelly, asst. sales manager, and Robert J. Falk, chief engineer and director of product development.

Arthur S. LaPine and Company

Booth 14. Arthur S. LaPine and Company is exhibiting many new models of laboratory apparatus including: Leybold rotary gas ballast vacuum pumps; Coleman meters; Collectochrom continuous chromatographic apparatus; freeze-dryers; melting point apparatus; flash-evaporators; atom models; clamps; microscope slide boxes; Pumpett safety pipetting device; set-up supports; Multimantles; Hamilton microliter syringes; and other late developments in laboratory equipment.

E. Leitz, Inc.

Booth 15. This exhibit will consist of Leitz universal research microscopes.—Ortholux UAM with the following equipment: plano (flat field) objectives, phase contrast equipment with the Heine condenser, equipment for fluorescence microscopy with HBO 200 high pressure mercury lamp. Universal camera microscope Panphot with xenon lamp and equipment for transmitted as well as reflected light. Medical and laboratory microscopes of modern design with rigid limbs and moving stages. Fluorescence microscopy accessories for same. Leitz microtomes for various applications. High and low power prism binocular magnifiers (for stereoscopic viewing). Stereoscopic microscopes with and without objective rapid changers. Leitz micromanipulator with continuous ratio control.

Link-Belt Company

Booths 76 and 77.

Mettler Instrument Company

Booth 18.

Miles Reproducer Company, Inc.

Booth 4. The new lightweight, miniature, self-powered "Recordall" solves the record-keeping problem of the physician in and out of the office. May be slung from shoulder or records in closed briefcase. No plug-in records as far distant as 60 feet. No wires—and at the same time filters unwanted background interferences such as air-conditioners, typing, traffic. Ideal for office and bedside interviews. Lectures, staff meetings, consultations, hospital rounds, training or nurses, telephone, etc. Optional provision for excluding everything except dictation spoken or whispered close to the mike—very useful in car, plane or operating room. Starts and stops automatically by voice-actuation—eliminating supervision and the recording of silent periods—useful in the operating room and with the telephone. Permanent recordings need no transcribing. Cost as low as 3 cents per hour. Compact belts have a total recording capacity up to 3 hours and 8 hours. Indexed for immediate and accurate location. Identifiable. Fileable, mailable. The featherweight file of 100 belts—constituting the entire cumulative case-history in and out of the office—for that many patients —can be carried in one's pocket. These recordings are acceptable by most judges as evidence as they are tamperproof. Cannot be erased or demagnetized. No other recorder like it in the world.

Mistaire Laboratories

Booth 71.

Monsanto Chemical Company

Booth 13. Monsanto will exhibit still photographs and other materials connected with the CBS-TV network program "Conquest." This is a science documentary program produced by CBS-TV and sponsored by Monsanto. Various subjects are treated in these shows and in the exhibit. Examples are: cancer research, oceanography, tuberculosis treatment, etc. Present at the Monsanto exhibit will be a technician from CBS, who will be there for the purpose of discussing the technicalities of television production. We will also be looking for subject matter for future shows.

C. V. Mosby Company

Booth 9. The C. V. Mosby Company, of St. Louis and New York, for almost sixty years has served as textbook publishers for the medical and biological sciences. Our display of many titles will include such new 1959 releases as Harrison's *Manual of Comparative Anatomy*, Hoskin & Bevelander's *Outline of Histology*—4th edition, Anthony's *Textbook of Anatomy and Physiology*—5th edition, Lemon & Russell's *The Plant Kingdom (A Laboratory Manual)*, Gebhardt & Anderson's *Microbiology*—2nd edition, Francis' *Introduction to Human Anatomy*—3rd edition, Zoethout & Tuttle's *Textbook of Physiology*—13th edition, Braungart's *Laboratory Exercises in Animal Biology*—5th edition, Turner's *Personal and Community Health*—11th edition, and many more.

Muscular Dystrophy Associations of America, Inc.

Booth 72. Help and hope for the dystrophic patient. The exhibit shows the manifestations of muscular dystrophy by means of figure drawings with an accompanying text, as well as the present known treatment for patients with muscular dystrophy. The areas of research sponsored by Muscular Dystrophy Associations of America, Inc., are presented along with a pictorial view of the Institute for Muscle Disease, a major center for research into muscular dystrophy and related neuromuscular diseases. The concept that muscular dystrophy occurs in many species of animals is also presented by means of line drawings.

National Geographic Society

Booths 22 and 23. 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 Heart Institute, United States Public Health Service

Booth 46. Cellular physiology of aging: varied expressions of a biological process. This exhibit by Gerontology Branch, National Heart Institute and Baltimore City Hospitals presents the background, present status, and current research on the so-called "age pigments" which accumulate in human brain, heart and other nondividing cells.

The first portion presents the overall effect of the aging process on populations and individuals which was formalized into a law by Benjamin Gompertz in 1823. Part of this section shows the fact that the important causes of death exhibit a similar kinetic behavior. The second portion of the exhibit deals with the occurrence of age pigments and the magnitude of their accumulation, as

a representative change in cellular physiology which may reflect or underlie a portion of the mortality kinetics shown above. Results obtained at the Gerontology Branch are here illustrated. The third portion outlines current research into the nature, i.e., physical and chemical properties, of these pigment particles. Unanswered questions bearing on the above are outlined.

National Science Foundation

Booths 26 and 27. The National Science Foundation, an independent Federal agency, is responsible for promoting scientific progress through: (1) developing and encouraging the pursuit of a national policy for promoting basic research and education in the sciences; (2) initiating and supporting basic scientific research, and appraising the impact of research upon industrial development and upon the general welfare; (3) awarding scholarships and graduate fellowships in the sciences; (4) fostering interchange of scientific information among American and foreign scientists; (5) 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; (6) maintaining a register of scientific and technical personnel and providing a clearinghouse for information covering such personnel in the United States; and (7) 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.

National Scientific Personnel Bureau, Inc.

Booth 42. National Scientific Personnel Bureau, Inc., of Washington, D.C., is privileged to extend an invitation to prospective employers and employees to visit Booth 42. NSPB, Inc., is providing an attractive booth, its theme being scientific manpower and industrial science. Staff of NSPB, Inc., will be on hand throughout the convention to welcome, to arrange interviews, to interview, to list employers, to register employees, to meet all who seek the personalized service of a professional organization which specializes in service to scientific and engineering, organizational and institutional personnel; service to industry, college and universities, hospitals, and governments. Brochures will be available. Appointments for interviews are being currently arranged at NSPB, Inc.'s head office: 1029 Vermont Ave., NW, Washington 5, D.C.

National Society for Medical Research

Booths 83 and 84.

New American Library

Booth 12. A special display of the inexpensive Mentor and Signet paperbound books selected by the Traveling Science Teachers for the basic reference collections in their lecture and demonstration program in high schools in many states for the 1959–60 school year. Includes many of the 56 Mentor and Signet titles in the AAAS *An Inexpensive Science Library* for 1959. This AAAS list is a basic book selection guide recommended by the Council of Chief State School Officers, the National Science Teachers Association, and state departments of education for purchase of books under the provisions of the National Defense Education Act.

North American Aviation

Foyer. The exhibit of the Missile Division of North American Aviation, Inc., has a space and advanced weapon system theme. A one-sixth scale model of the Hound Dog missile is on display along with associated color transparencies denoting manufacturing, logistics, and flight test activities. Also on exhibit is a 6-foot moon model which depicts the moon surface and its color gradations. This model was recently shown on a nation-wide telecast on the Dave Garroway Show.

Northern Illinois Gas Company

Booth 36. New science and technology are of major importance to the gas industry in developing its future energy system. This new knowledge is adapted to Northern Illinois Gas Company's operations through the company's research department. Three of the various means by which this is done are illustrated in the exhibit: (1) sponsored research. Example: The Institute of Gas Technology's program on gasification of Illinois coal. This research is directed towards developing a satisfactory supplement for natural gas; (2) adaptation of manufacturers' new technology to solve company problems. Example: Minnesota Mining and Manufacturing Company's device which generates electricity from gas by thermo-electric techniques. This is being adapted for cathodic protection of gas mains. Many other applications of thermo-electrics are being studied and show great promise: (3) research by the company toward solving specific problems. Example: Use of telephone company voice communication facilities with auxiliary equipment to read industrial gas meters daily by dialing a telephone number.

Oak Ridge Institute of Nuclear Studies

Booth 69. A free-standing panel display outlining educational programs administered by ORINS for the U.S. Atomic Energy Commission and the National Science Foundation will be shown. Supplementary information on these programs, which range from the high school to the postdoctoral level, will be available in printed form.

Office of Naval Research

Booth 50. The Office of Naval Research will have an exhibit on oceanographic research. The exhibit will show the four areas of oceanographic research and briefly describe them. Facilities engaged in oceanographic research are listed. Various instruments used for research are illustrated. Included is the bathyscaph Trieste, capable of descending several miles deep into the ocean.

Highlight of the exhibit is a globe showing undersea areas. Included are ocean currents, streams, peaks and valleys. Color slides accompanied by a continuous commentary depict methods of research and various aspects of the ocean presently under study.

Offner Electronics, Inc.

Booth 33. Offner Electronics, Inc., will exhibit a most versatile direct-writing oscillograph assembly. All transistorized, the Type R Dynograph has a maximum sensitivity of one microvolt d-c. and has a frequency response beyond 200 cps, permitting direct writing of action potentials. A single set of amplifiers permits recording of such diverse variables as EEG, strain gages, thermocouples, pressure, etc. Ink, heat, and electric writing may be used interchangeably with curvilinear or rectilinear coordinates. Also to be shown is the Type T transistor portable EEG.

Philosophical Library

Booth 79. The Philosophical Library of New York will feature, among its new publications, *The Future of Science* (Bertrand Russell), *Pictorial History of Philosophy* (Dagobert D. Runes), and *The Story of Chemistry* (Georg Lockemann). In addition, *Dictionary of Aeronautical Engineering, Automation,* and *Cybernetics and Society* will be shown.

Packard Instrument Company, Inc.

Booth 45. The products exhibited are electronic instruments for detection and precise measurement of radioactivity, principally in radioisotope studies for medical and biochemical research. The Tri-Carb liquid scintillation spectrometer is designed specifically for efficiently counting low-energy alpha and beta radiation. Two radioisotopes in double-labeled compounds may be counted simultaneously. The Auto-Gamma spectrometer system counts automatically up to 100 gamma-emitting samples, using a crystal scintillation detector. Components of this system are shown in use as a manual gamma counter. A complete gas-flow counting system is provided by either the windowless flow counter or the Flo-Window counter, with the transistorized scaler. The proportional counting amplifier may be used in this system. The ratio-measuring ultraviolet monitor is shown with the automatic fraction collector, designed for time or drop operation. L. E. Packard and Edward Polic will represent the company.

Professional Tape Co., Inc.

Booth 75. We will display scientifically developed adhesive "Time" standard and Hi-Temp tapes, labels which are completely unaffected by heat or steam, cold or freezing temperatures, acids or alkalies, moisture, or oxidation, and which adhere to any surface. With "Time" autoclave labels with TSI ("Time" sterile indicator), the invisible word *sterile* appears on the label only after the label has been in the autoclave for a complete standard sterilization cycle. "Time" scope labels (microscopic slide labels), pressure-sensitive, represent a complete laboratory service for labeling slides. They are available in two sizes, ⅞ by ⅞ and ⅜ by ⅞ inches, in a thick or thin type, one for pathological use and the other for routine use. They are also available imprinted with school name. The labels resist all conditions in the laboratory, including the water bath, and provide a service not heretofore available. They will also cling, never peeling or falling off, and they conform to legal requirements in most states.

John F. Rider Publisher, Inc.

Booth 43. John F. Rider Publisher, Inc., 116 W. 14 St., New York 11, are publishers of texts and manuals on electricity, electronics, space and nuclear age, and allied sciences.

Raytheon Manufacturing Company

Booth 93.

Science Fair Program

Booth 85. Because the Science Fair Program of the Chicago Public Schools has been so successful in encouraging, stimulating, and furthering the interests of scientifically talented students in advance studies and research, a group of Chicago business organizations decided to "show off" some of the projects completed by Chicago students this past year. Almost 4000 students submitted over 2000 exhibits in the 1959 competition. 214 of these were finalist entries. Several of the award-winning exhibits (in the fields of biology, chemistry, electronics, mathematics, and physics) will be on display. Chicago's youngsters have forged an enviable record in the field of scientific research. Stop by and see the results of their efforts.

Science Library

Booths 52, 53, 54. 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 visitor who wishes to browse. Among the publishers represented in the Science Library are: American Association for the Advancement of Science; Abelard-Schuman Limited; Academic Press, Inc.; Annual Reviews, Inc.; Brown University Press; Cornell University Press; Cranbook Institute of Science; Devin-Adair Co., Inc.; Emerson Books, Inc.; Folkways Records and Service Corp.; Free Press; W. H. Freeman and Company; Grove Press, Inc.; Harcourt, Brace and Company, Inc.; Houghton Mifflin Company; Iowa State University Press; Josiah Macy, Jr. Foundation; M D Publications, Inc.; McGraw-Hill Book Company; University of Michigan Press; New American Library of World Literature, Inc.; W. W. Norton & Company, Inc.; Oxford University Press; Prentice-Hall, Inc.; G. P. Putnam's Sons; Reinhold Publishing Corporation; Charles Scribner's Sons; Ivan Sorvall, Inc.; St Martin's Press; University of Texas Press; Yale University Press; Year Book Publishers, Inc.

Science Materials Center

Booth 3. The Science Materials Center exhibit offers a display of its unique line of science equipment for use by young people in school or at home. Many of the products are designed by scientists and educators in consultation with Hyman Ruchlis, educational director of the Center and former chairman of the New York Federation of Science Teachers. Of particular interest in the display are the exclusive new Pre-Electricity Physics Lab, the Calculo Analog Computer, the Ultraviolet Science Lab, the Brainiac K-30 Computer, the Dynatron, the Motograph Science Charts, and other items. The Science Materials Center is a division of the Library of Science.

Scientific Industries

Booths 40 and 41. The Musser "Copernican" planetarium is a new and revolutionary astronomical development designed for use in universities, colleges, high schools, museums, government training institutions, naval vessels' navigation systems, missile and space research establishments, and television studios. Conceived as an IGY project in 1956, the planetarium is making its debut at the AAAS meeting as an educational aid in the new space programs. One of the most important features of the "Copernican" is its electromechanical computer ephemeris which provides virtually instantaneous accurate placement of all the planetary bodies at any given time in thousands of years. The breadth of its teaching value in the field of astronomy includes such features as: star field overlays for various latitudes; direct motion and retrograde star maps in sidereal and civil times; method for finding horizon coordinates; geocentric sky reference overlays; overlays showing P.Z.S. triangles and Sumner lines of position on geocentric earth or sky; system for teaching pertubation theory in satellite orbits, tides, causes of diurnal inequalities, and so forth.

Special overlays show earth-moon gravitational field potential for demonstrating orbits of satellites, Keplerian laws, and so on. The "Copernican" shows the actual movement of all the planets, moon, and asteroids and conversely the stars, galaxies, and constellations of outer space. Ultraviolet light is employed in the sky-simulation of "outer space", and internal light units are motor-actuated for the planets, asteroids, satellites and comets.

Sigma Press of Medical and Technical Summaries, Inc.

Booth 47. Sigma Press is the publishing division of Medical and Technical Summaries, Inc., a firm devoted to research and development of educational aids and publications for higher education and the professions. The company is especially known for its pioneering in the development of new, pedagogically approved reviews in the basic medical sciences. The parent firm is comprised of educators and scientists from the universities and government and private research concerns in the greater Washington area. Along with its research organization, the company maintains complete technical composition and editorial facilities and provides services for the entire publishing operation, including promotion and distribution. The display at the AAAS Exposition is designed to convey the educationally oriented cause of the company to its fellow scientists, and will demonstrate its innovations in products and production techniques. Included will be reports of its summer fellowship program for technical writers and editorial research assistants.

Ivan Sorvall, Inc.

Booth 73. Ivan Sorvall, Inc., will have on display 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-Gyorgyi and Blum eight-tube continuous-flow centrifuge for uninterrupted processing of large quantities of solution at high speeds. Also, the type SS-3 push-button Superspeed (the first automatic unit in its range), the enclosed type SS-4 Superspeed, the new RC-2 Servall automatic Superspeed refrigerated centrifuge—all these of unmatched versatility; a new large capacity type GSA high-speed rotor, and several completely new rotor developments, including the "Sharp" particle-counting rotor and a field-aligning, swinging bucket rotor. Also on display will be the well-known smaller Servall table model centrifuges; the Servall Omni-Mixer with a micro-attachment; and the improved Servall "Porter-Blum" microtome.

Special Libraries Association, Illinois Chapter

Booth 55. The Special Libraries Association booth features a display of translation materials from the SLA Translation Center, the Office of Technical Services, and some of the work of various commercial translation agencies and societies engaged in translation activities. The booth will be manned with librarians who are prepared to answer your questions regarding translations and related activities. There will also be a display of SLA publications and informational brochures regarding various services offered by the Special Libraries Association. Assistance will be given those who wish to inquire about SLA and its program, who are interested in the details of starting a special library, or who are interested in librarianship as a profession.

Spitz Laboratories, Inc.

Booth 60. Through the many-faceted eyes of the Spitz planetarium, school systems in almost 200 communities now provide a singular experience in which both youngsters and adults can acquire the basic understanding of the sky and earth sciences so important to today's expanding curriculum. The standard model Spitz planetarium with its 24-ft Fiberglas projection dome has been specially designed to create a teaching situation where space and time become tools of the instructor. Basic astronomy, geography, history, mathematics, and the humanities are all enriched by the planetarium presentation. The experience is three-dimensional and curved—the illusion is superb; reaction and retention are splendid. All school systems using the Spitz planetarium have also created an excellent public relations asset of inestimable educational value to neighboring communities. Spitz Laboratories of Yorklyn, Del., pioneers in this fascinating field, offers its services and experience wherever a planetarium is being planned.

Tobacco Industry Research Committee

Booth 39. 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. Grants-in-aid have been awarded to 75 scientists in 50 institutions, and recipients have published more than 75 papers in medical and scientific journals.

Henry Turkel

Booth 16. An exhibit of the data from the treatment by medication of 60 mongoloids is presented to demonstrate that progressive normalization of the mongoloid through an individualized course of medication is now possible. Along with the alteration over time of characteristic physical abnormalities and body dysfunctions, the treated patient becomes increasingly receptive to learning and enlarges his range of interaction with the environment. An anatomical classification of mongoloids is utilized as a basis for a rational combination of drugs whose administration is adaptable to standard office procedures of the physician. The goal of progressive normalization of the mongoloid is effected through a combination of drugs whose synergistic action tends to eliminate the fetal legacy of physiological dysfunctions of the body in which the abnormalities characteristic of mongolism have their origin. The theory and detail of the course of medication, the individual drugs, dosage levels and duration of treatment, as well as regressions of improvements as result of withheld medication are shown by means of photographs, x-rays and other records. The data provide ground for abandonment of the fatalistic view, now dominant, that nothing can be done to improve the mongoloid.

Union Tank Car Company

Booth 7. The world's largest circular building without internal supports is displayed in model form. Built to a scale of ⅛ inch to 1 foot, the model of the Union Dome represents the type of modern repair and maintenance facilities the company now has in operation in Baton Rouge, La., and is building in Wood River, Ill. The company, which owns and operates the nation's largest fleet of railway tank cars, has attracted world-wide attention as the pioneer in the construction of large buildings utilizing the geodesic principle of design. This all-steel dome has a diameter of 384 feet and rises to a height of 120 feet. It has a floor area of 110,000 square feet with no hindering internal supports. An indication of the simplicity of the dome is the bill of materials which calls for only three basic items: (i) the hexagonal steel panels, (ii) 6-inch diameter steel pipe used to interlock the vertices of the adjoining panels; and (iii) small half-spheres used to anchor the 6-inch pipes at the base of the dome

to the foundation ring. Graver Tank & Mfg. Co. Division—Union Tank Car Company, engineered, fabricated, and is constructing the Wood River dome and is offering similar services on a commercial basis.

Universal Scientific Company, Inc.

Booth 81. Universal Scientific Company, Inc., Vincennes, Ind., represented by educational director, Joseph E. Vargo, is displaying its electrical and electronics educational equipment used in science studies. This equipment will be demonstrated continuously in our booth, showing how the instructor can convey complex electrodynamic phenomena expediently to students; also will be shown how students are inspired into creative thinking. With this equipment students may study at their respective speeds, and progress of the more talented students is not impaired by the less interested students.

University of Michigan Press

Booth 59. The Ann Arbor Science Library, now containing ten books, with many more in preparation, will be featured by the University of Michigan Press. The books in this outstanding series are written by top scientists, each of whom deals concisely with a sharply defined subject in his special field and addresses himself to the bright student, the educated layman, and the scientist who wants to grasp a subject outside his own field of research. *Mirabile dictu!* popular science that is not "written down." Revised editions of such standard books as Frederick K. Sparrow's *Aquatic Mycophycetes* will be displayed, along with Michigan's staple science titles still used in their present editions. Sydney Chapman's *IGY: Year of Discovery* and Alexander Smith's *Mushroom Hunter's Field Guide* will especially appeal to browsers for their pictorial quality. Michigan's complete catalogs, seasonal announcements, and illustrated circulars will be distributed at the booth. A representative will be on hand to answer questions, accept orders, and discuss publishing projects.

Ward's Natural Science Establishment, Inc.

Booth 29. Ward's Natural Science Establishment cordially invites participants in the AAAS Convention to visit its booth in the commercial exhibits. Ward's presents for your consideration a selection of materials for earth science teaching programs and biology. Both specimen material and equipment is represented. Members of Ward's staff on duty at the booth will be glad to answer questions or to discuss with you any requirements you may have regarding natural science materials for teaching, research, or field work. As the foremost supplier of geology teaching materials, Ward's would especially appreciate receiving visits from earth science teachers, and discussing with them their needs and requirements in geological teaching aids. Ward's Geology Division offers teaching and reference collections, rock, mineral, and fossil specimens, and laboratory and field equipment to meet nearly every need.

W. M. Welch Manufacturing Company

Booth 6. 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, paper chromatograms, etc. Many charts and other visual aids for teaching science, mathematics and physiology as well as preserved specimens, synthetic skeletons and other biological models will be shown.

Westinghouse Electric Corporation

Booth 89.

John Wiley & Sons, Inc.

Booth 21. John Wiley & Sons, Inc., is happy to be at the Exposition of Science and Industry once again. We await the pleasure of your company at our booth, where we will display a wide selection of our college- and professional-level technical and scientific publications. We hope you will drop by for a few moments of browsing and a pleasant chat.

Wilmot-Castle Company

Booth 17. Two new forms of gaseous sterilization, and a new and revolutionary distillation process will be displayed. The Castle Sterile-Aqua system offers a simple, efficient, and rapid method of converting ordinary boiler steam into pyrogen-free water of exceptional quality. All secondary heating is eliminated, with significant savings in distillate cost. The equipment requires only about one-fifth the space of conventional distillation equipment, and is virtually service-free. A 12 gallon per hour still will be shown. An important new advance in the field of area sterilization will also be presented. The sterilant is intended for rapid sterilization of large surface areas. Castle Beta-Propiolactone equipment sterilizes and allows re-entry within a few hours. The new automatic Sterox-O-Matic gas sterilizing equipment, designed for the low-temperature sterilization, will also be shown.

Zenith Radio Corporation and Subsidiaries

Booth 35. Zenith Radio Corporation —Chicago shows a low-noise electron beam parametric amplifier in operation. This is a vacuum tube which achieves stable broad-band amplification at ultra-high frequencies with an extremely low noise level. The new amplifier is used to demonstrate the drop in Johnson noise which results when a small resistor is cooled from room temperature to liquid nitrogen temperature. Rauland Corporation — Chicago shows various special purpose cathode ray tubes including scan converter storage tubes, image intensifiers and high resolution-high brightness display tubes. One example of the last-named type is a 21-ince round tube capable of a minimum resolution of 1000 lines at a light output of 300 to 500 foot-lamberts.

Zenith Radio Research Corporation— Redwood City, Calif., exhibits views of its microsecond flash x-ray equipment, as well as x-ray pictures taken at one-fifth microsecond with approximately 100 megawatts instantaneous power. A new modulator avoids the damaging low-voltage tail of the current transient, lengthening the life of the discharge tube by several times.