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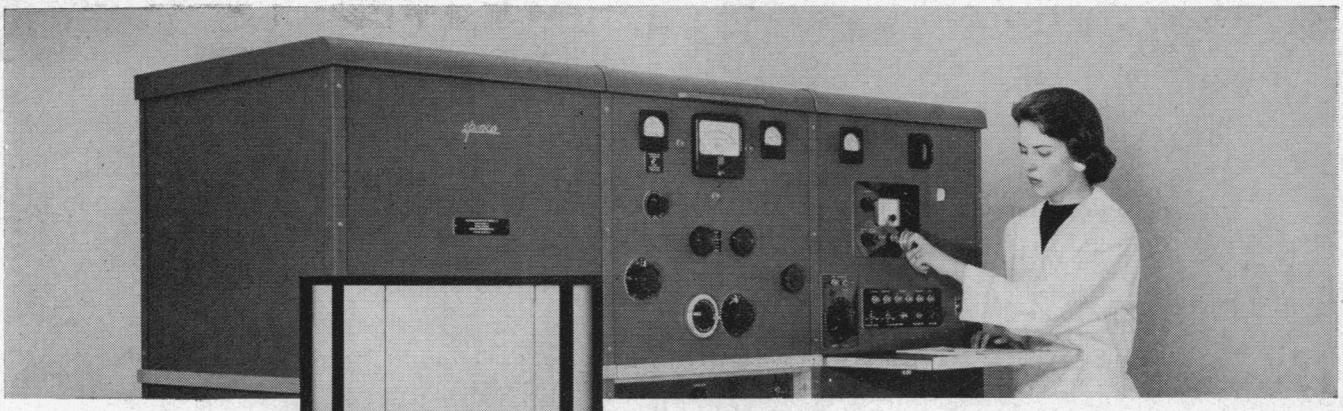
New Methods Extend the Usefulness of the Ultracentrifuge

Recent studies by research scientists have further increased the uses of the Analytical Ultracentrifuge for measuring molecular weights and purity of viruses, enzymes, proteins, polymers and a variety of organic and inorganic molecules. Here are four new developments as reported in the technical literature.



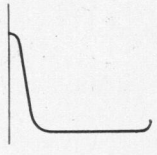
Interacting Systems

Kegeles and Rao at Clark University have measured the molecular weights of chemically reacting systems in the ultracentrifuge cell using the Archibald "approach-to-equilibrium" method. Studying the enzyme system alpha-chymotrypsin, they showed it to be present in the ultracentrifuge cell as an equilibrium mixture of monomers, dimers, and trimers. This is an extension of previous work which showed that the Archibald method applies to polydisperse non-ideal solutions, as well as to monodisperse ideal solutions.

Improved Accuracy

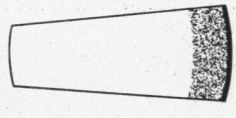
Trautman, at New York's Rockefeller Institute for Medical Research, showed that the accuracy of the Archibald method can be improved by more precisely locating the position of the meniscus on the ultracentrifuge photographic plate. He made a detailed study of the optical fine structure at the meniscus, and used a special optical aligning procedure with a mirror in the ultracentrifuge cell.

Simplified Measurements

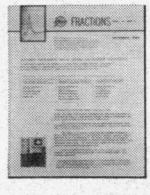


At Stockholm's Nobel Medical Institute, Ehrenberg reports a simplified approach-to-equilibrium method which makes measurements from the schlieren curve easier. He runs the ultracentrifuge fast enough for a peak to begin forming at the meniscus so that the schlieren curve is parallel with the baseline and no extrapolation is necessary. His measurements of molecular weight and diffusion constants agree closely with those by other methods.

Rapid Equilibrium



Van Holde and Baldwin at the University of Wisconsin have used short liquid columns to achieve complete sedimentation equilibrium in a fraction of the time previously required. Using liquid columns of only 3 mm, they report equilibrium with sucrose in 3½ hours, and with a 1 mm column in only 30 minutes. In addition, the authors report that measurements during approach-to-equilibrium permit calculation of a diffusion coefficient.



If you are not familiar with the Ultracentrifuge, we will be happy to send you copies of "An Introduction to Ultracentrifuge Techniques" and the latest issue of "Fractions", a periodical sent to owners of Spinco ultracentrifuges, electrophoresis-diffusion instruments and amino acid analyzers. Write Spinco Division, Beckman Instruments, Inc., Stanford Industrial Park, Palo Alto 5, California.

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Letters

Peking Man

In the "News of science" section of *Science* [**129**, 825 (1959)] you ask, "Where is Peking Man?" and speculate on some of the possible answers to this question. As a former member of the American Embassy guard at Peking, China, at the outbreak of World War II, I would like to rule out the theory that the Peking Man may be at the bottom of the Yangtze River.

The S.S. *Harrison* had just taken the 4th Marines from Shanghai to the Philippine Islands and was returning to China for those of us who were still in North China. The war caught the ship just off the coast of China near Shanghai, and the captain ran it aground. This was hundreds of miles from Chinwangtao, and thus the Peking Man never went aboard the *Harrison*.

I recall seeing some cases in Peking marked for Johns Hopkins University and believe these contained the collection. If so, I am fairly certain they arrived safely in Chinwangtao.

Since we were preparing to leave China on Thursday, 11 Dec. 1941, we had packed up all our guns, ammunition, and other equipment and had sent it to Chinwangtao. Because of the facilities in that small Marine outpost, it is quite likely that the Peking Man was stored with our things.

When the war broke out, the approximately 35 men stationed in Chinwangtao were moved to Tientsin, and we were moved from Peking to Tientsin.

It may be that the Peking Man was discarded as unimportant in the looting of our supplies—that it was thrown out with the usual debris of such lootings. If this was the case, there is a good chance that the collection is still in the vicinity of the camp at Chinwangtao or that it fell into the hands of the Chinese and was used for medicine, as was the practice.

The nature of the packing, however, would indicate to the looters that the contents were of some value, and, for this reason, I doubt very much if the collection was thrown out.

Since the Japanese at the time had a great need for military supplies and since our equipment was all packed and ready to go, it may be that the Peking Man was shipped out with our equipment to some point within the Japanese war theater. If this is the case, the collection could still be in existence in any one of a number of places, from the Aleutians to Borneo.

It seems that a check with Japanese Army records, to locate the soldiers who were stationed at Chinwangtao, would be a logical step in trying to locate the collection. Perhaps the men who were there could tell what happened to it.

One thing is certain: the Peking Man was not on the S.S. *Harrison*.

GERALD L. BEEMAN
Cleveland Museum of Natural History, Cleveland, Ohio

Nuclear Research

There are several errors in the editorial entitled "Capital gain" [*Science* **129**, 1583 (1959)]. The most important one, and the only one I will point out here, is the position stated in the editorial that, due to "special security requirements," the Department of Defense should have no more than (and by implication, less than) a modest share in nuclear research. As the decision to place the Stanford accelerator under the AEC is applauded on this basis, it is further implied that the AEC has no similar "special security requirements."

I challenge the writer of the editorial to visit the following accelerator facilities operating under Navy contract: the Mark III at Stanford, the 450-Mev proton synchrocyclotron at Chicago, the 400-Mev proton synchrocyclotron at Columbia, the 1.5-Bev electron synchrotron at Cornell—or any nuclear physics facility operating under Office of Naval Research contract. I would then like to have him visit Argonne, Brookhaven, the Radiation Laboratory, and other AEC accelerator facilities and make an *honest* report comparing the "special security requirements" of the Department of Defense and the AEC. (He might also be interested in finding out why Fermi chose Navy support for the Chicago accelerator instead of AEC support.)

If he is concerned with the "special security requirements" of the Department of Defense as a whole, then he should be equally concerned with the "special security requirements" of the AEC as a whole. He should also be lamenting the assignment of the Stanford project to the AEC, instead of the National Science Foundation, for example, due to the AEC's "special security requirements" and, more important yet, due to the strengthening of the AEC monopoly on high-energy accelerator physics. This assignment is in direct opposition to the report's strong recommendation of diversity of support—there must have been reason for such a recommendation.

It might also interest the writer of the editorial to find out who kept the Stanford proposal alive and provided the major drive to see that it was finally approved.

ALBERT G. OPITZ
Alexandria, Virginia

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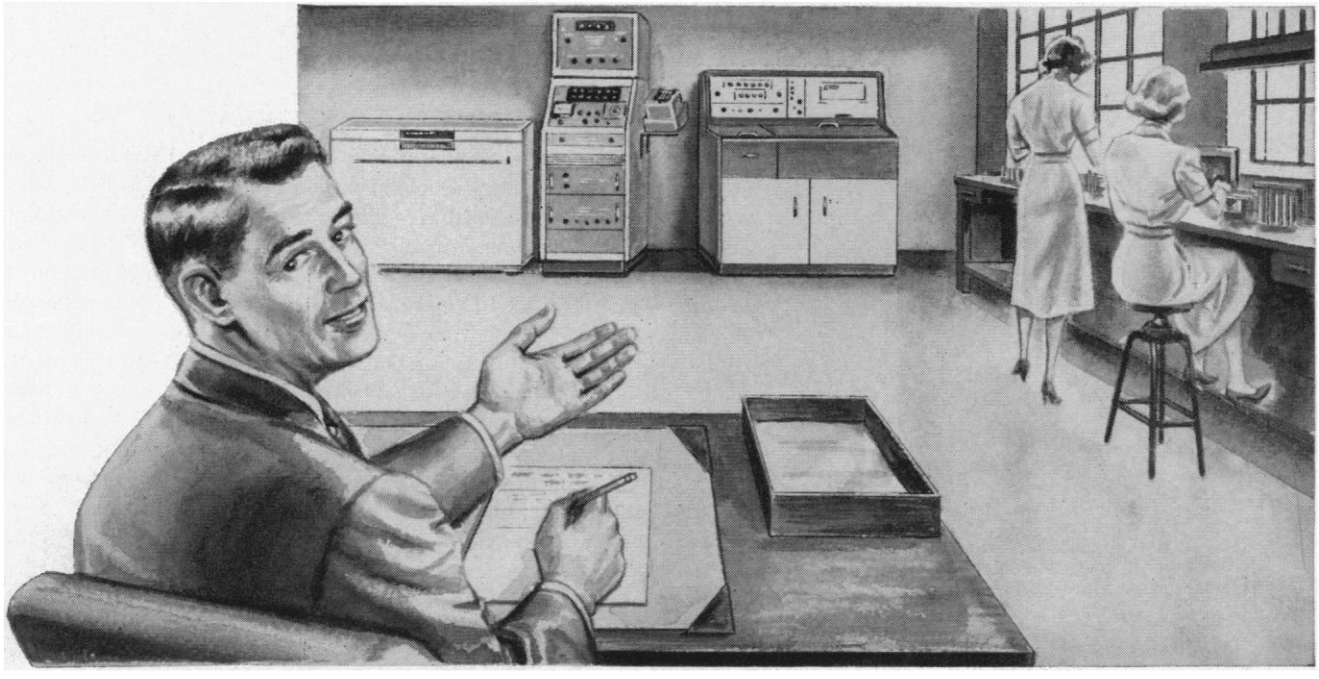

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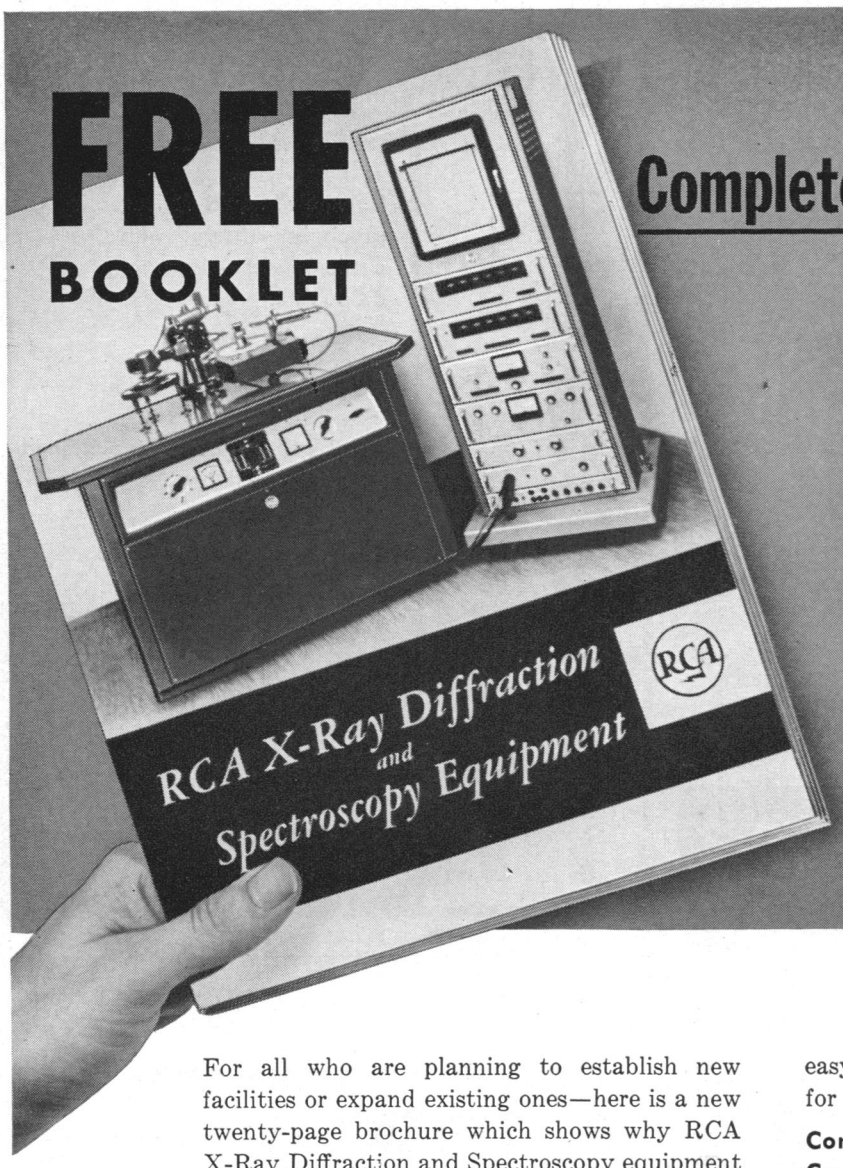

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Meetings

Allergen Standardization

More than 30 of the nation's top research immunologists participated in a one-day scientific conference on the problem of allergen standardization, held at the National Institutes of Health on 13 June. The participating scientists reached general agreement on a concrete program which, it is hoped, will eventually provide model systems for the purification of ragweed pollen and other allergens.

For three decades, allergen standardization has been singled out as the most important consideration in the field of clinical allergy. Most authorities in the field agree that the scientific investigator must be provided with allergenic products meeting rigid norms of potency, purity, and specificity before substantial progress can be made in this area of immunological research. At the present time, investigators are frequently unable to test for specific irritants, since most allergenic extracts are crude preparations composed of several components presumably related to the specific sensitization under investigation.

Aware that newer purification techniques promise progress toward a solution of the problem, the National Advisory Allergy and Infectious Disease Council of the National Institutes of Health last year appointed an *ad hoc* committee to assess present activities in this area and to consider future plans. Members included Jules Freund, National Institute of Allergy and Infectious Diseases; Dan Campbell, California Institute of Technology; Merrill Chase, the Rockefeller Institute for Medical Research; Bram Rose, McGill University, Montreal; William Sherman, Columbia University; Roderick Murray, director, Division of Biologics Standards, National Institutes of Health; Irvin Kerlan, Food and Drug Administration; and Harry Alexander, emeritus professor, Washington University, St. Louis (chairman of the committee).

At a meeting held in November 1958, the members learned that three investigators—A. R. Goldfarb, of the Chicago Medical School; Bram Rose; and Einer Hammarsten of the Karolinska Institute, Stockholm—employing dissimilar chemicophysical methods and working independently, had obtained highly purified and potent fractions of ragweed pollen, the most important single allergen in this country. These fractions, although not yet compared, were presumed to be similar in constitution. As a result, the committee recommended to the council that funds be provided to interested scientific investigators for characterizing and comparing the three products to determine whether or not they were equivalent and, if possible, to create a template for future investigations of other allergens.

The council then established a permanent committee under the chairmanship of Campbell, who was authorized to expand its base to include representatives of other government agencies and of industry when the program reached the proper stage of development.

The recent conference held under the auspices of the council provided a forum at which the scientists were able to reexamine the unsolved elements of the problem and develop a definite course of action in several specific areas. As one of the primary areas, the immunochemical identification of ragweed pollens was assigned to a task force under the direction of Chase. The several chemists who have fractionated this pollen agreed that their respective methods should be repeated by others to assure reproducibility. Previously, steps had been taken by the committee to assure availability of the pollen to the participating chemists.

Rose will head the serological and biological testing phase of the program and explore the possibilities of biolog-

ical testing systems as soon as characterized active fractions are available. Sherman was assigned direction of the future clinical testing phase of the purified fractions.

DAN H. CAMPBELL
Gates and Crellin Laboratories of Chemistry, California Institute of Technology, Pasadena

Instrument-Automation Conference

Programs for 60 technical sessions have been arranged for the 14th annual Instrument-Automation Conference and Exhibit of the Instrument Society of America that will take place in Chicago, 21–25 September. The total number of sessions sets a new ISA conference record.

While the nearly 200 presentations will cover virtually the entire range of recent developments in instrumentation for science and technology, more conference time has been assigned to problems of computer control for industrial processes than to any other subject.

Arrangements have been made through the International Federation for Automatic Control for sessions on instrumentation developments abroad. Technical sessions will be held in the Palmer House and the Hotel Morrison, and some 350 exhibits will be shown in the Chicago International Amphitheatre.

Clinical Chemists

The American Association of Clinical Chemists will hold its 11th annual meeting at Western Reserve University, 27–29 August. Some 58 papers will be presented, and two symposia are scheduled. The first will be on the spectrophotometric method of analysis (visible, ultraviolet, and fluorometric) and the second will be a discussion of the professional status of clinical chemists. Information may be obtained from D. J. Waide Price, Institute of Pathology, Western Reserve University, 2065 Adelbert Rd., Cleveland 6, Ohio.

Nonspecific Resistance

Fort Detrick, in Frederick, Md., will sponsor a symposium on nonspecific resistance to infection on 16 and 17 September. The conference, which is being arranged in cooperation with the American Institute of Biological Sciences, will be held at Hood College, Frederick.

An international representation of specialists in this field of research will summarize their views. Visitors from abroad will include Henry Harris, Sir William Dunn School of Pathology, University of

Oxford, Oxford, England; Derrick Rowley, Wright-Fleming Institute of Microbiology, St. Marys Hospital, London, England; and David W. Henderson, Microbiological Research Establishment, Porton, Wiltshire, England. The program was organized by the conference chairman, Colin M. MacLeod of the University of Pennsylvania, together with Ivan L. Bennett, Jr., and Leighton E. Cluff, of Johns Hopkins University, René J. Dubos of the Rockefeller Institute for Medical Research, and Harold N. Glassman, assistant scientific director at Fort Detrick.

The proceedings will be published, with individual chapters somewhat expanded beyond the verbal presentations. Cluff will prepare a synthesis of the discussion from the floor and, in a foreword to the published volume, MacLeod will give his views on the implications of the symposium for future research.

Chemical Engineers

The 41st national meeting of the American Institute of Chemical Engineers will be held at the Hotel St. Paul, St. Paul, Minn., 27–30 September. Some 2000 participants are expected.

General chairman is W. M. Poda, Economics Laboratory, St. Paul. The technical program is being arranged by A. J. Madden, Jr., of the Institute of Technology, University of Minnesota. The program will include sessions on research, new product development, chemical warfare, safety, missile construction materials, and chemical economics as a unit process. A student program is being prepared by W. E. Ranz and H. S. Isbin of the University of Minnesota.

Forthcoming Events

September

14–18. American Dental Assoc., New York, N.Y. (H. Hillenbrand, 222 E. Superior St., Chicago 11, Ill.)

14–19. High Energy Accelerators and Instrumentation, intern. conf., Geneva, Switzerland. (Conference Secretariat, CERN, Geneva 23.)

14–19. Treatment of Waste Waters, symp., Newcastle upon Tyne, England. (Wastes Symposium, Public Health Engineering Section, Dept. of Civil Engineering, King's College, Newcastle upon Tyne, 2.)

18–21. European League against Rheumatism, cong., Istanbul, Turkey. (H. Kocas, Medical School, Ankara, Turkey.)

18–25. International Council for Philosophy and Humanistic Studies (5th meeting of the general assembly), Ann Arbor, Mich. (ICPHS, 19, avenue Kleber, Paris 16e, France.)

19–22. Planning of Science, intern. symp., Prague, Czechoslovakia. (Secre-

tary, Intern. Symp. on Planning of Science, Gorkho Manesti 23, Prague 3.)

19–26. American College of Gastroenterology, Los Angeles, Calif. (D. Weiss, 33 W. 60 St., New York 23.)

20–25. Biological Standardization, 5th intern., Lyon, France. (C. Merieux, 17, rue Bourgelat, Lyon.)

21–24. International Dental Federation, 47th annual, New York, N.Y. (IDF, 35 Devonshire Pl., London W.1.)

21–25. Instrument-Automation Conf., 14th annual, Chicago, Ill. (R. T. Devore, Instrument Soc. of America, 313 Sixth Ave., Pittsburgh, Pa.)

21–26. Mother-Infant Interaction and Its Relation to Mental Health, Ciba Foundation symp. (by invitation), London, England. (G. E. W. Wolstenholme, Ciba Foundation, 41 Portland Pl., London, W.1.)

21–28. Biology of Sardines (FAO world meeting), Rome, Italy. (FAO, Viale delle Terme di Caracalla, Rome.)

21–3. Permanent Intern. Assoc. of Road Congresses, quadrennial congress, Rio de Janeiro, Brazil. (PIARC, 43, Avenue du President Wilson, Paris 16e, France.)

22–24. Some Aspects of Magnetism, conf., Sheffield, England. (Conference Secretary, Inst. of Physics, 47 Belgrave Sq., London, S.W.1, England.)

22–25. American Roentgen Ray Soc., Cincinnati, Ohio. (C. A. Good, Mayo Clinic, Rochester, Minn.)

22–26. Cancer Cytology, intern. conf., Madrid, Spain. (Miss E. L. Hughes, 3007 Salzedo, Coral Gables, Fla.)

23. Association for the Advancement of Psychoanalysis, New York, N.Y. (New York Acad. of Medicine, 2 E. 103 St., New York.)

23–2. International Film Cong., 13th, London and Oxford, England. (Intern. Scientific Film Assoc., 3 Belgrave Sq., London S.W.1.)

24–25. Solid Propellants Conf. (American Rocket Soc.), Princeton, N.J. (A. F. Denham, ARS, 925 Book Bldg., Detroit 26, Mich.)

24–26. American Assoc. of Medical Clinics, Chicago, Ill. (E. P. Jordan, Box 58, Charlottesville, Va.)

24–26. American Assoc. for the Surgery of Trauma, Bretton Woods, N.H. (W. T. Fitts, Jr., 3400 Spruce St., Philadelphia 4, Pa.)

24–26. Central Assoc. of Obstetricians and Gynecologists, Chicago, Ill. (E. J. DeCosta, 104 S. Michigan Ave., Chicago 3.)

27–30. American Inst. of Chemical Engineers, natl., St. Paul, Minn. (F. J. Van Antwerpen, AICE, 25 W. 45 St., New York 36.)

28–30. American Oil Chemists' Soc., fall, Los Angeles, Calif. (Mrs. L. R. Hawkins, AOCS, 35 E. Wacker Drive, Chicago 1, Ill.)

28–30. Telemetering, natl. symp., San Francisco, Calif. (G. L. Larse, Lockheed Aircraft Corp., Missile Systems Div., Sunnyvale, Calif.)

28–1. Recent Developments in Research Methods and Instrumentation, 9th annual symp. and exhibit, NIH, Bethesda, Md. (J. B. Davis, National Institutes of Health, Public Health Service, Bethesda 14.)

28–2. American College of Surgeons, 45th clinical cong., Atlantic City, N.J. (R. M. Cunningham, Jr., ACS, 40 E. Erie St., Chicago 11, Ill.)

30–1. Industrial Electronics, 8th annual symp., Pittsburgh, Pa. (R. H. Delgado, 954 Brentview Dr., Pittsburgh 36.)

30–1. Mississippi Valley Medical Soc., St. Louis, Mo. (H. Swanberg, 510 Maine St., Quincy, Ill.)

October

1–4. American Soc. of Industrial Designers, Asheville, N.C. (Mrs. R. R. Larisch, ASID, 15 E. 48 St., New York 17.)

1–4. Electrochemical Thermodynamics and Kinetics, annual intern., Vienna, Austria. (M. P. Van Rysselberghe, CITE for the U.S., Dept. of Chemistry and Chemical Engineering, Stanford Univ., Stanford, Calif.)

4–7. American Inst. of Mining, Metallurgical and Petroleum Engineers, fall, Dallas, Tex. (E. O. Kirkendall, AIMMPE, 29 W. 39 St., New York 18.)

4–9. Society of Motion Picture and Television Engineers, semi-annual conv., New York, N.Y. (C. S. Stodter, SMPTE, 55 W. 42 St., New York, 36.)

5–7. Aeronautical Communications, 5th symp., Utica, N.Y. (L. G. Cumming, Inst. of Radio Engineers, 1 E. 79 St., New York 21.)

5–7. Chemical Engineers, annual, Essen, Germany. (Dr. Miessner, VDI-Fachgruppe, Verfahrenstechnik, Rheingauallee 25, Frankfurt-am-Main, Germany.)

5–7. National Assoc. of Corrosion Engineers, Northeast regional, Baltimore, Md. (T. J. Hull, NACE, 1061 M & M Bldg., Houston, Tex.)

5–8. American Acad. of Pediatrics, Chicago, Ill. (E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill.)

5–9. American Soc. of Anesthesiologists, Bal Harbour, Fla. (J. W. Andes, 188 W. Randolph St., Room 1101, Chicago, Ill.)

5–9. Audio Engineering Soc., 11th annual, New York, N.Y. (AES, P.O. Box 12, Old Chelsea Station, New York 11.)

5–10. Society of Automotive Engineers, aeronautical meeting and aircraft manufacturing forum, Los Angeles, Calif. (R. W. Crory, Meetings Operation Dept., SAE, 485 Lexington Ave., New York 17.)

5–16. Institute of the Aeronautical Sciences, biennial Anglo-American conf., New York, N.Y. (R. R. Dexter, IAS, 2 E. 64 St., New York 21.)

6–8. Aeronautical/Astronautical Problems of High Speed Flight, Stanford, Calif. (E. Haynes, Deputy Director, Aero Sciences Directorate, Air Force Office of Scientific Research, Washington 25.)

6–9. High Temperature Technology, intern. symp., Asilomar, Calif. (Public Relations Office, Stanford Research Inst., Menlo Park, Calif.)

7–8. Advanced Propulsion, 2nd symp. (classified), Boston, Mass. (Lt. Col. P. Atkinson, Propulsion Div., Air Force Office of Scientific Research, Washington 25.)

7–9. Vacuum Technology, symp., Philadelphia, Pa. (American Vacuum Soc., Box 1282, Boston, Mass.)

7–11. International Conv. on Nutrition and Vital Substances, 5th, Konstanz-Zurich, Switzerland. (Secretary General, Benmeroderstrasse 61, Hannover-Kirchrode, Germany.)

8–10. American Assoc. of Textile Chemists and Colorists, natl. conv., Washington, D.C. (G. P. Paine, AATCC, P.O. Box 28, Lowell, Mass.)

8–10. American Ceramic Soc., Bedford, Pa. (F. P. Reid, ACS, 4055 N. High St., Columbus 14, Ohio.)

8–10. American Soc. of Tool Engineers, semi-annual, St. Louis, Mo. (H. E. Conrad, ASTE, 10700 Puritan Ave., Detroit 38, Mich.)

8–10. Biology of Pyelonephritis, intern. symp., Detroit, Mich. (E. L. Quinn, Henry Ford Hospital, W. Grand Blvd. at Hamilton, Detroit 2.)

8–10. Optical Soc. of America, annual, Ottawa, Canada. (S. S. Ballard, Dept. of Physics, Univ. of Florida, Gainesville.)

9–13. American Soc. of Civil Engineers, Los Angeles, Calif. (E. S. Kirkpatrick, ASCE, 33 W. 39 St., New York 18.)

11–16. American Acad. of Ophthalmology and Otolaryngology, Chicago, Ill. (W. L. Benedict, 15 Second St., SW, Rochester, Minn.)

11–16. American Inst. of Electrical Engineers, fall general, Chicago, Ill. (N. S. Hibshman, AIEA, 33 W. 39 St., New York 18.)

11–16. American Soc. for Testing Materials, Pacific area natl., San Francisco, Calif. (R. J. Painter, ASTM, 1916 Race St., Philadelphia 3, Pa.)

12–14. Clay Conf., 8th natl., Norman, Okla. (C. G. Dodd, Eighth Natl. Clay

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of the General Program of the AAAS Chicago Meeting by first class mail – early in December

The General Program of the 126th Meeting of the AAAS in Chicago, 26–31 Dec., 1959, will be available to you within the first week in December—whether you can attend the Meeting or not.

Effective this year, the former General Program-Directory, which had become an unwieldy book of more than 400 pages, has been separated into **two** publications, namely:

a) The Directory of AAAS Officers and Activities, 96 pp., already published; and

b) The General Program of the Annual Meeting, c. 200 pp., which will appear early in December.

Both of these, sold at cost, may be purchased separately—in advance (see coupon below), or at the meeting. Some of their *respective* contents are:

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5. The Special Sessions: AAAS Address and Reception, National Geographic Society, Phi Beta Kappa, Sigma Xi, RESA, Tau Beta Pi Association.
6. Details of the Morrison Hotel—center of the Meeting—and of the other session sites.
7. Titles of the latest foreign and domestic scientific films to be shown in the AAAS Science Theatre.
8. Exhibitors in the 1959 Annual Exposition of Science and Industry and descriptions of their exhibits.

The Directory

1. AAAS officers, staff, committees for 1959.
2. Section committees and other AAAS Council members.
3. The 285 affiliated organizations.
4. Historical sketch and organization of the Association.
5. Complete roll of AAAS presidents and their fields.
6. Publications of the Association, including all symposium volumes.
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9. New and current activities of the AAAS.
10. Constitution and Bylaws.

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3. ACADEMIC, PROFESSIONAL, OR BUSINESS CONNECTION .....

4. OFFICE OR HOME ADDRESS .....
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5. FIELD OF INTEREST .....

6. CONVENTION ADDRESS .....
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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
1515 Massachusetts Avenue, NW, Washington 5, D.C.

Conf., University of Oklahoma, Norman.)

12–14. Electronics Conf., 15th annual natl., Chicago, Ill. (NEC, 228 N. La Salle St., Chicago 1, Ill.)

12–16. Macromolecules, intern, symp. (IUPAP), Wiesbaden, Germany. (W. Mauss, Intern. Symp. on Macromolecules, c/o Kalle & Co., Rheingaustrasse 25, Wiesbaden-Biebrich, Germany.)

12–19. Venereal Diseases, intern. cong. (by invitation), London, England. (G. E. W. Wolstenholme, Ciba Foundation, 41 Portland Pl., London, W.1, England.)

13–17. International Union against the Venereal Diseases and the Treponematoses, London, England. (Institut Alfred Fournier, 25, Boulevard Saint-Jacques, Paris 14e, France.)

14–16. Parenteral Drug Assoc., annual conv., New York, N.Y. (H. E. Boyden, Parenteral Drug Assoc., 130 E. 59 St., New York 22.)

14–17. American College of Chest Physicians, 25th, Albuquerque, N.M. (M. Kornfeld, 112 E. Chestnut St., Chicago 11, Ill.)

15–16. American Ceramic Soc., Glass Div., Wernersville, Pa. (F. P. Reid, ACS, 4055 N. High St., Columbus 14, Ohio.)

15–17. Academy of Psychosomatic Medicine, Cleveland, Ohio. (B. B. Moss, Suite 1035, 55 E. Washington St., Chicago 2.)

15–17. National Soc. of Professional Engineers, fall meeting, Seattle, Wash. (P. H. Robbins, NSPE, 309 Bancroft Bldg., Univ. of Nebraska, Lincoln.)

16–17. Association of Midwest College Biology Teachers, conf., Notre Dame, Ind. (G. R. Bernard, Dept. of Biology, Univ. of Notre Dame, Notre Dame, Ind.)

17–18. American Acad. of Psychotherapists, 4th annual conf., New York, N.Y. (AAP, 30 Fifth Ave., New York 11.)

17–25. Plastics Industry, intern. fair, Düsseldorf, Germany. (Nordwestdeutsche Ausstellungs Gesellschaft (NOWEA), Ehrenhof 4, Düsseldorf.)

18–22. Electrochemical Soc., Columbus, Ohio. (R. K. Shannon, ES Inc., 216 W. 102 St., New York 25.)

18–23. American School Health Assoc., Atlantic City, N.J. (A. O. DeWeese, 515 E. Main St., Kent, Ohio.)

18–23. American Soc. of Plastic and Reconstructive Surgery, Miami Beach, Fla. (T. R. Broadbent, 508 E. South Temple, Salt Lake City, Utah.)

19–21. High Polymer, 9th Canadian, Toronto, Ontario, Canada. (K. E. Russell, Dept. of Chemistry, Queen's Univ., Kingston, Ontario.)

19–22. Semiconductor Symp. (Electrochemical Soc.), Columbus, Ohio. (A. C. Beer, Battelle Memorial Inst., 505 King Ave., Columbus 1, Ohio.)

19–23. American Public Health Assoc., 87th annual, Atlantic City, N.J. (B. F. Mattison, 1790 Broadway, New York 19, N.Y.)

19–23. American Soc. of Civil Engineers, annual conv., Washington, D.C. (W. H. Wisley, ASCE, 33 W. 39 St., New York 18.)

19–31. International Cong. of Therapeutics, Strasbourg, France. (Prof. Fontaine, Dayen de la Faulte de Strasbourg, France.)

19–31. Pan American Medical Assoc., 10th conf., Mexico, D.F., Mexico. (J. Eller, PAMCA, 745 Fifth Ave., New York 22.)

20–22. Standards, 10th natl. conf., Detroit, Mich. (K. G. Ellsworth, American Standards Assoc., 70 E. 45 St., New York 17.)

20–23. Clean Air, intern. conf., London, England. (National Soc. for Clean Air, Palace Chambers, Bridge St. London, S.W.1, England.)

22–24. Acoustical Soc. of America, fall meeting, Cleveland, Ohio. (W. Waterfall, ASA, 335 E. 45 St., New York 17.)

22–24. American Documentation Inst., annual, Bethlehem, Pa. (R. S. Taylor, Lehigh Univ., Bethlehem, Pa.)

22–25. British Medical Assoc., annual clinical, Norwich, England. (W. Hedgcock, BMA House, Tavistock Sq., London, W.C.1, England.)

23–24. Canadian Soc. for the Study of Fertility, Montreal, Canada. (J. F. Campbell, 238 Queen's Ave., London, Ont., Canada.)

23–25. American College of Cardiology, 8th annual, Philadelphia, Pa. (P. Reichert, ACC, Empire State Bldg., New York 1.)

23–27. American Heart Assoc., annual, Philadelphia, Pa. (W. F. McGlone, AHA, 44 E. 23 St., New York 10.)

24–29. Darwin Centennial, intern. cele-