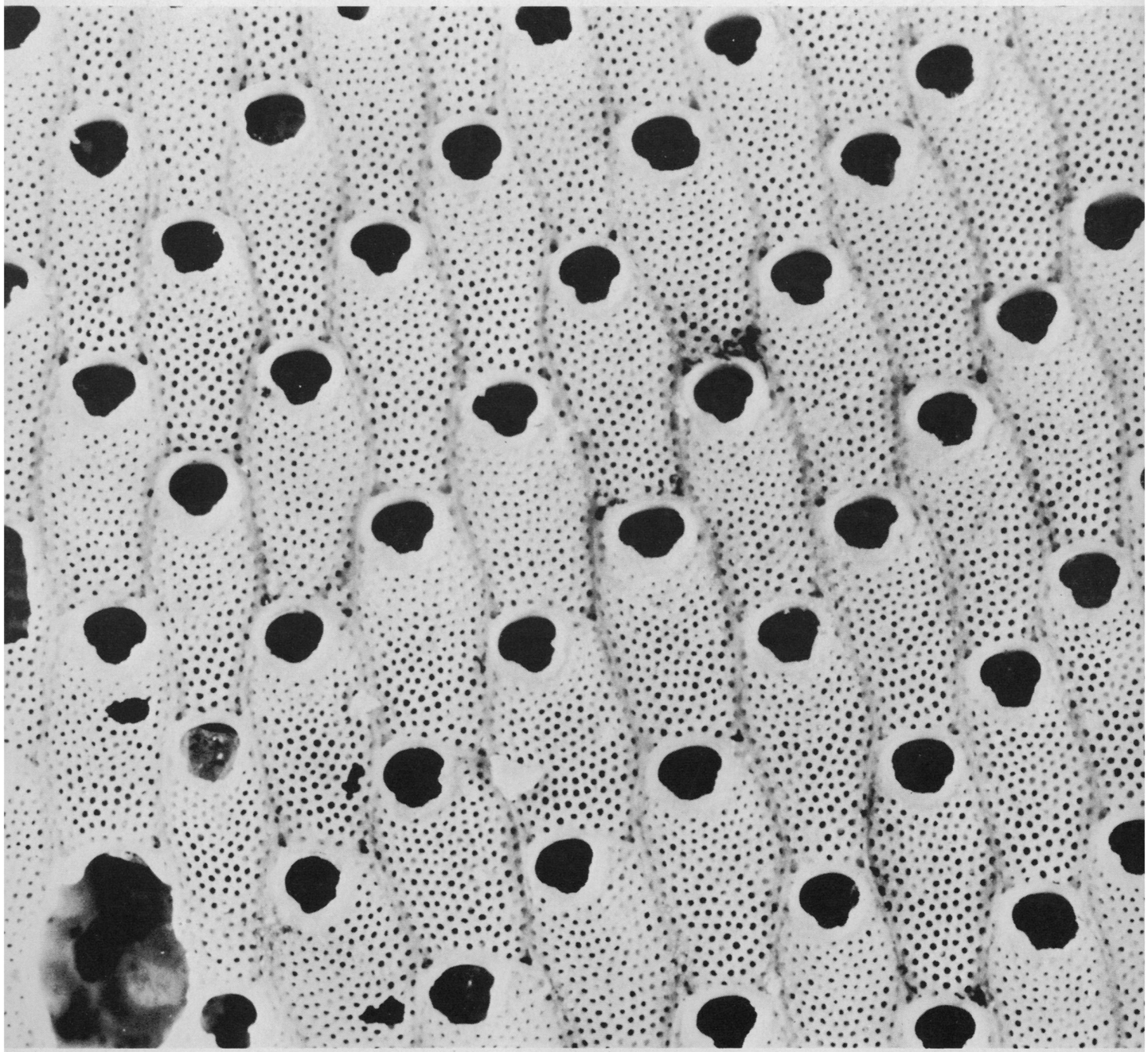
SCIENCE

29 June 1962

Vol. 136, No. 3522

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



Index Issue

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Recent AAAS Symposium Volumes

#69. **Biophysics of Physiological and Pharmacological Actions.**

1961. 612 pages. 212 illustrations.
Edited by: Abraham M. Shanes.
A bird's-eye view of a number of principles now considered important. Useful for teaching, as well as for research purposes.

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#68. **Sciences in Communist China.**

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"Those interested in current concepts of mineralization of calcified tissues will find in this text the sources of current knowledge on the subject."—*American Journal of Orthodontics*, May 1961

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#63. **Congenital Heart Disease.**

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"Should serve as a valuable and concise summation of the more important aspects of congenital heart disease."—*American Journal of Cardiology*, August 1961

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#61. **Biological and Chemical Control of Plant and Animal Pests.**

1960. 286 pages. 11 illustrations.
Edited by: L. P. Reitz.
"The editor and individual authors should be commended on the preparation of this book."—*Journal of Economic Entomology*, December 1960

Retail Price: $5.75. *AAAS Member's Cash Price*: $5.00.

#55. **Photoperiodism and Related Phenomena in Plants and Animals.**

1959, 2nd printing 1961. 922 pages. 256 illustrations.
Edited by: Robert B. Withrow.
". . . contains very many excellent papers. There are few biologists who will not peruse it with pleasure and profit."—*Science Progress*, July 1960

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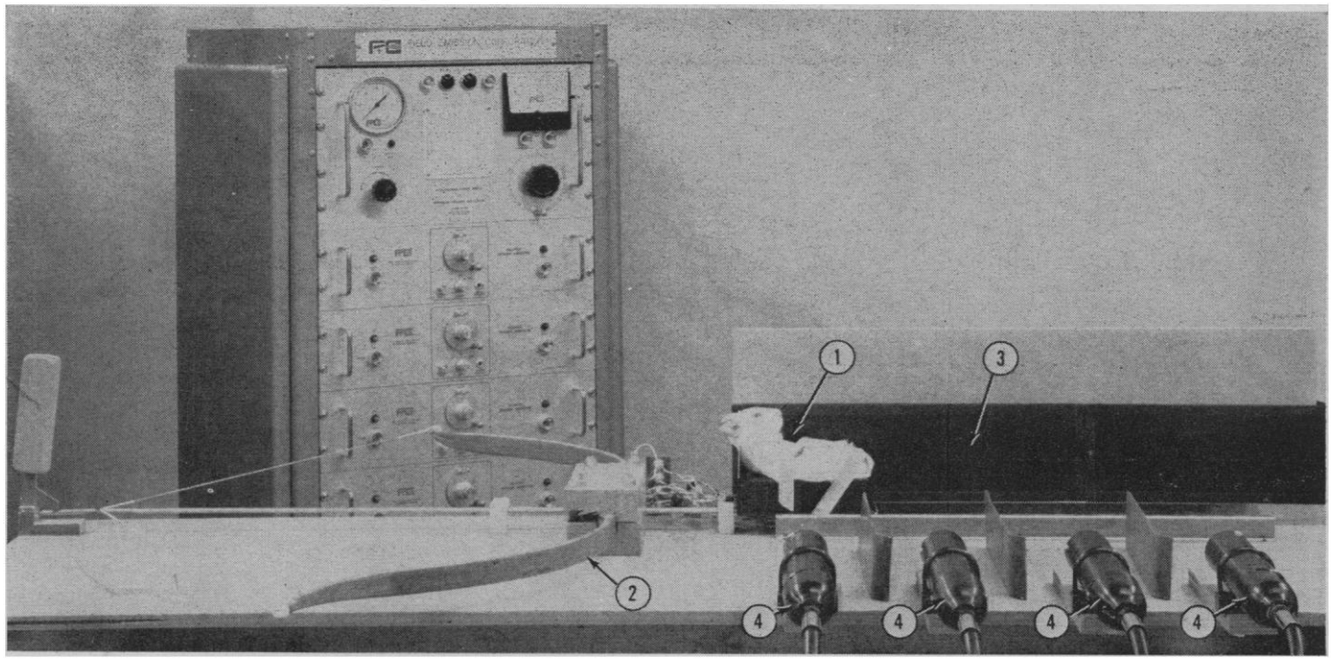

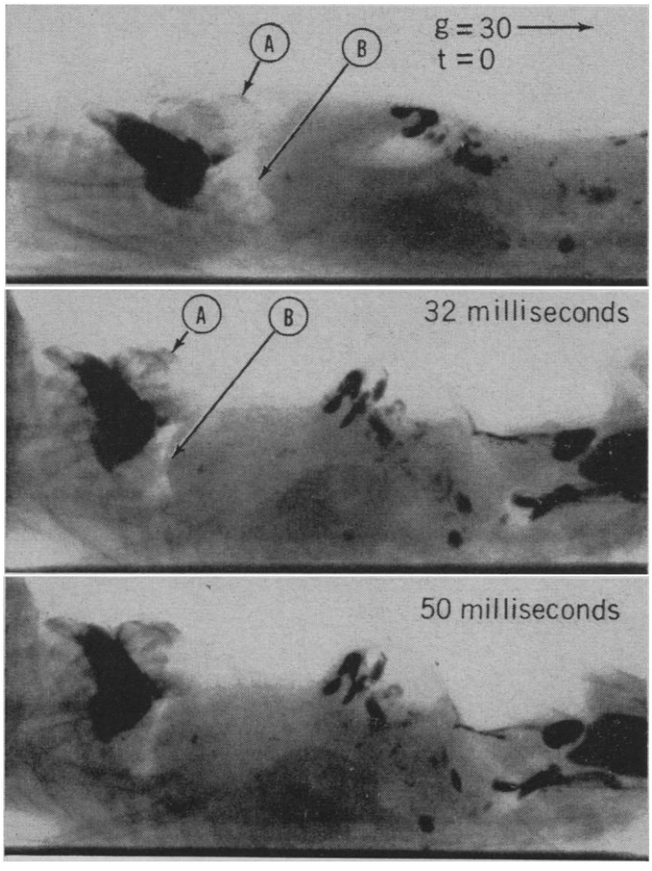

Cineradiographs reveal displacements of internal organs during 30g acceleration; guinea pig (1) was accelerated by crossbow (2) past x-ray film (3); four x-ray tubes (4) fired in time sequence; the short exposure time (0.1 microsecond) gives sharp radiographs while the pig is in motion; multiple x-ray sources are used in order to gain the advantage of a stationary film.

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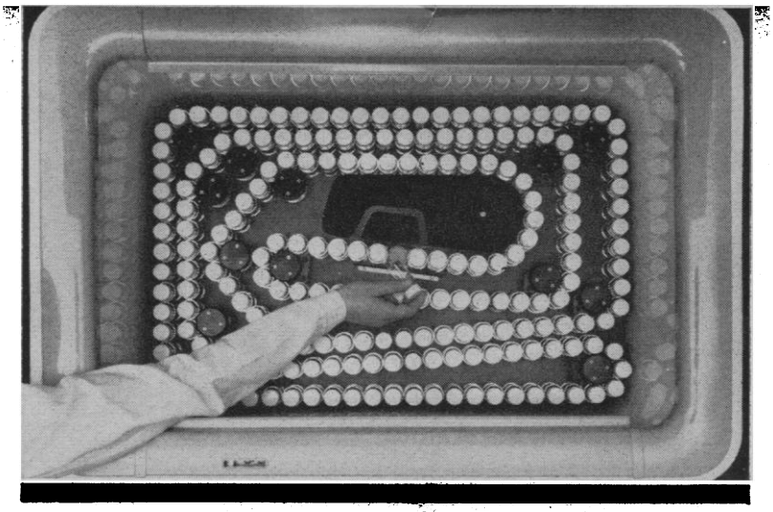

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Weights and Measures

Recently, after several decades of relative quiescence, the question of adopting the metric system in the United States is again being debated. Symposia on the question were held at the 1958 and 1959 meetings of the AAAS and at the Tenth National Conference on Standards in October 1959. A subcommittee of the House Committee on Science and Astronautics, in July 1961, unanimously recommended favorable action on a bill to authorize the Bureau of Standards to conduct a 3-year factual study of the pros and cons of the question and to submit annual reports to the Secretary of Commerce for transmission to Congress. This bill, H.R. 2049, was not voted upon at the last session of Congress. Representative Miller, chairman of the Committee on Science and Astronautics, will reintroduce the bill at this session.

The main arguments for and against adoption of the metric system are as follows.

Pro: The metric system is in universal use among scientists. *Con*: Scientists working with engineers who use the English system find little difficulty in converting from one system to the other, and in any case interconvertibility is no great problem since work is usually done in single units that are scaled up or down. The international inch, adopted in 1959, equals exactly 25.4 millimeters, thus simplifying conversion.

Pro: The metric system permits greater speed and accuracy in calculations and hence great economy in time and money. *Con*: The main advantage of the metric system is that it is decimalized. The increasing use of the decimal inch, mile, and gallon tends to offset the advantages that the metric system has hitherto enjoyed.

Pro: The metric system is becoming the dominant system: 74 countries now use this system; 40 of them have made the shift during this century. Consequently, for full participation in world trade, it is important to use the metric system. *Con*: English units are in fact still in use in many metric-system countries: oil pipes and fittings, automobile tires, bicycle chains and gears are predominantly on the inch system. What is important is not that the units of measurement be standard throughout but that there be a single standard throughout a particular industry.

Pro: The shift to the metric system is inevitable and in fact has already begun with the recent conversion of most of the American pharmaceutical manufacturers to this system, the partial conversion of the optical industry, the planned shift of the Army and Marine Corps to the metric system for all linear measures by 1 January 1966, and the Weather Bureau's use of both systems in its maps. *Con*: It may be advantageous for certain industries to make the shift, but the great bulk of industry is firmly committed to the English system and has an enormous investment in drawings, gears, dies, machine and hand tools, screw threads, and so on. The cost of a shift would be astronomical, and the problem of reeducating engineers and machinists to the metric system, formidable. To shift would be to court economic disaster.

Rebuttal: The shift could be accomplished over a 33-year period and introduced only in some industries, not in all. The economic arguments against shifting are exaggerated and fail to take account of obsolescence.

The validity of the arguments can scarcely be assessed without a considerable study of the facts. We need to know whether we can afford not to adopt the metric system. The study called for by Representative Miller's bill should make a reasoned answer possible.—G.DuS.

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Meetings

Forthcoming Events

August

2–7. Long-Range Goals for Ethical Humanism, intern. congr. Blindern, Norway. (Secretariat, Intern. Humanist and Ethical Union, 152 Oudegracht, Utrecht, Netherlands)

5–8. Heat Transfer, conf. & exhibit, Houston, Tex. (A. B. Conlin, Jr., Amer. Soc. of Mechanical Engineers, 29 W. 39 St., New York 18)

5–11. Industrial Research, annual conf., New York, N.Y. (M. F. Garvey, 301A Seeley W. Mudd Bldg., Columbia Univ., New York 27)

5–11. Radiation Research, intern. congr., Yorkshire, England. (A. Howard, Mount Vermon Hosp., Northwood, Middlesex, England)

6–10. Society for Clinical and Experimental Hypnosis, natl. convention—International Soc. for Clinical and Experimental Hypnosis, intern. congr., Portland, Ore. (J. G. Watkins, Clinical Psychology Dept., V.A. Hospital, Portland 7)

6–10. World Federation for Mental Health, annual, Lima, Peru. (Secretary General, 19 Manchester St., London, W.1, England)

6–17. International Commission for Prevention of Alcoholism, annual, Seattle, Wash. (ICPA, 6830 Laurel St., NW, Washington 12, D.C.)

7. World Medical Esperanto Assoc., annual, Copenhagen, Denmark. (M. Jarnuszkiewicz, Majowieska 69, Krakow, Poland)

7–8. Forest Products Utilization, annual conf., Blacksburg, Va. (C. J. Holcomb, Virginia Polytechnic Inst., Blacksburg)

7–9. Low-Level Wind Conf., El Paso and Dallas, Tex. (American Meteorological Soc., 45 Beacon St., Boston 8, Mass.)

8–10. Standards Laboratories, natl. conf., Boulder, Colo. (A. E. Hess, Circuit Standards Div., Natl. Bureau of Standards, Boulder)

8–10. X-ray Analysis Applications, annual conf., Denver, Colo. (W. M. Mueller, Metallurgy Div., Denver Research Inst., Univ. of Denver, Denver 10)

8–14. Trace Gases and Natural and Artificial Radioactivity in the Atmosphere, symp., Utrecht, Netherlands. (E. C. Junge, Intern. Assoc. of Meteorology and Atmospheric Physics, 26 Blueberry Lane, Lexington, Mass.)

8–15. Fertility and Sterility, intern. congr., Rio de Janeiro, Brazil. (J. A. Cabello, Parque Melitón Porras 161, Miraflores, Lima, Peru)

10–11. Man-Machine Competition, mtg., Seattle, Wash. (Inst. of the Aerospace Sciences, 2 E. 64 St., New York 21, N.Y.)

10–18. Poultry, intern. congr., Sydney, Australia. (World's Poultry Science Assoc., 674 W. Lane Ave., Columbus 10, Ohio)

11–13. International Mathematical Union, genl. congr., Saltsjöbaden, Sweden. (R. Thorn, Intern. Congr. of Mathematicians, c/o Kungl. Järnvägsstyrelsen, Stockholm C, Sweden)

12–16. American Veterinary Medical Assoc., Miami Beach, Fla. (H. E. Kingman, Jr., AVMA, 600 S. Michigan Ave., Chicago, Ill.)

13–16. Biological Problems in Water Pollution, seminar—Effects of Radioactivity on Aquatic Environment, Concentration of Radioactive Materials and Suggested Safe Limits, symp., Cincinnati, Ohio. (C. M. Tarzwell, Taft Sanitary Engineering Center, 4676 Columbia Pkwy., Cincinnati 26)

13–16. Pacific Energy Conversion Conf., San Francisco, Calif. (R. S. Gardner, Amer. Inst. of Electrical Engineers, 33 W. 39 St., New York 18, N.Y.)

13–16. Science Writers, intern. seminar, Seattle, Wash. (E. H. Kone, American Inst. of Physics, 335 E. 45 St., New York 17)

13–17. Antarctic Logistics, symp., Boulder, Colo. (invitation only). (Natl. Acad. of Sciences, 2101 Constitution Ave., NW, Washington 25, D.C.)

13–17. Clay Minerals, annual conf., Ottawa, Ont., Canada. (D. Hunka, Natl. Research Council, Ottawa)

13–17. Lunar Exploration, intern. conf., Blacksburg, Va. (J. B. Eades, Jr., Dept. of Aerospace Engineering, Virginia Polytechnic Inst., Blacksburg)

14–16. Cryogenic Engineering, annual conf., Los Angeles, Calif. (K. D. Timmerhaus, Chemical Engineering Dept., Univ. of Colorado, Boulder)

14–16. Precision Electromagnetic Measurements, intern. conf., Boulder, Colo. (J. F. Brockman, Natl. Bureau of Standards, Boulder)

15–17. Electronic Packaging, annual symp., Boulder, Colo. (A. Brown, 352 Chemistry Bldg., Univ. of Colorado, Boulder)

15–22. Mathematics, intern. congr., Stockholm, Sweden. (B. Eckman, Intern. Mathematical Union, c/o Ecole Polytechnique Fédérale, Zurich, Switzerland)

16–18. Communications Technology, seminar, San Diego, Calif. (R. C. Cannon, California Western Univ., 3902 Lomaland Dr., San Diego 6)

16–18. Food Microbiology, intern. symp., Montreal, Canada (by invitation). (D. A. A. Mossel, c/o Central Inst. for Nutrition Research, Catharijnesingel 61, Utrecht, Netherlands)

17–24. International Soc. for Human and Animal Mycology, congr., Montreal, Canada. (R. Vanbreuseghem, Institut de Médecine Tropicale, 155 rue Nationale, Antwerp, Belgium)

19–22. American Soc. of Animal Science, Corvallis, Ore. (C. E. Terrill, Animal Husbandry Research Div., Agricultural Research Center, Beltsville, Md.)

19–23. Conservation Education Assoc., annual, Stevens Point, Wis. (O. C. Sand, 17715 Westview Dr., New Berlin, Wis.)

19–23. Health, annual conf. and exhibit, University Park, Pa. (M. Cashman, Pennsylvania Dept. of Health, P.O. Box 90, Harrisburg)

19–25. Microbiology, intern. congr., Montreal, Canada. (N. E. Gibbons, Natl. Research Council, Ottawa 2, Ont., Canada)

19–26. Image Formation and Vision, intern. conf., Munich, Germany. (H. Schober, Intern. Commission for Optics, München 19, Arnulfstr. 205, AEC-Haus, Germany)

19–31. International Union of Geodesy and Geophysics, general assembly, Berkeley, Calif. (American Geophysical Union, 1515 Massachusetts Ave., NW, Washington 5, D.C.)

20–22. Progress in Nuclear Science and Engineering Education, conf., Gatlinburg, Tenn. (University Relations Div., Oak Ridge Inst. of Nuclear Studies, P.O. Box 117, Oak Ridge, Tenn.)

20–23. American Soc. of Agonomy, annual, Ithaca, N.Y. (ASA, 2702 Monroe St., Madison 5, Wis.)

20–23. Problems of Gyroscopy, symp., Celerina, Upper Engadine, Switzerland. (H Ziegler, Comité Scientifique, UITAM, École Polytechnique Fédérale, Zurich, Switzerland)

20–24. Chemistry Congr., Abo, Finland. (E Wänninen, Turun Yliopiston Kemian Laitos Vattenborgsvägen 5, Abo 2)

20–24. Scientific Committee on Antarctic Research, mtg., Boulder, Colo. (by invitation). (Natl. Acad. of Sciences-Natl. Research Council, 2101 Constitution Ave., NW, Washington 25, D.C.)

20–24. Soil Science Soc. of America, annual, Ithaca, N.Y. (M. Stelly, American Soc. of Agronomy, 2702 Monroe St., Madison 5, Wis.)

20–24. Structural Design of Asphalt Pavements, intern. conf., Ann Arbor, Mich. (W. K. Parr, Box 619, Univ. of Michigan, Ann Arbor)

20–25. American Soc. of Limnology and Oceanography, Madison, Wis. (G. H. Lauff, Dept. of Zoology, Univ. of Michigan, Ann Arbor)

20–25. Limnology, intern, congr., Madison, Wis. (J. C. Wright, Birge Hall, Univ. of Wisconsin, Madison 6)

21–24. Electronics, exhibit and convention, Los Angeles, Calif. (Technical Program Chairman, WESCON Business Office, 1435 S. La Cienega Blvd., Los Angeles 35)

21–24. Far Infrared Spectroscopy, intern. symp., Cincinnati, Ohio. (Office of Information, Wright Air Development Div., Wright-Patterson Air Force Base, Ohio)

21–24. Fracture in Crystalline Solids, intern. conf., Maple Valley, Wash. (Amer. Inst. of Mining, Metallurgical and Petroleum Engineers, 345 E. 47 St., New York 17, N.Y.)

21–25. International Inst. of Refrigeration, commissions mtg., Washington, D.C. (W. Pentzer, National Research Council, 2101 Constitution Ave., Washington 25)

21–25. International Scientific Committee for Trypanosomiasis Research, mtg., Dalaba, Guinea, Africa. (Commission for Technical Cooperation in Africa South of the Sahara, Private Mail Bag 2359, Lagos, Nigeria, Africa)

21–28. Acoustics, intern. congr., Copenhagen, Denmark. (F. H. B. Interslav, Tekniske Højskole, Østervoldgade 10, Copenhagen)

21–6. Pan American Sanitary Conf., Minneapolis, Minn. (Pan American Sanitary Bureau, 1501 New Hampshire Ave., NW, Washington 6, D.C.)

22–23. International Commission on Radiological Units and Measurements, mtg., Montreal, Canada (members only). (H. O. Wyckoff, X-ray Section, Natl. Bureau of Standards, Washington 25, D.C.)

22–24. Calorimetry, annual conf., Berkeley, Calif. (J. A. Morrison, Div. of Pure Chemistry, Natl. Research Council, Ottawa, Ont., Canada)

22–24. X-ray Optics and Microanalysis, intern. conf., Stanford, Calif. (L. Zeitz, Biophysics Laboratory, Stanford Univ., Stanford)

22–25. Neurology Congr., Oslo, Norway. (S. Rufsum, Rikshospitalet, Oslo)

22–26. American Assoc. for the Advancement of Science, Alaska Div., Juneau, Alaska. (A. Sosnkowski, Alaska State Museum, Box 2051, Juneau)

23–24. Thin Films Conf., Denver, Colo. (R. B. Feagin, Univ. of Denver Research Inst., Denver 10)

23–25. Obstetrics and Gynecology, congr., Copenhagen, Denmark. (P. Lange, Eivindsvej 36 Chl., Copenhagen)

23–26. International Union of the History and Philosophy of Science, Philosophy Div., genl. assembly, Helsinki, Finland. (R. Taton, 64 rue Gay-Lussac, Paris 5°, France)

24–25. Friends of the Pleistocene, Rocky Mountain section, annual field trip, Twin Falls, Idaho. (H. E. Malde, U.S. Geological Survey, Federal Center, Denver, Colo.)

24–31. Child Psychiatry, intern. congr., Scheveningen, Netherlands. (Secretary, c/o Holland Organizing Center, Lange Voorhout 16, The Hague, Netherlands)

24–25. Plant Phenolics Group of North America, annual, Corvallis, Ore. (V. C. Runeckles, Imperial Tobacco Co. of Canada, P.O. Box 6500, Montreal, Quebec)

24–1. Surveying, intern. congr., Vienna, Austria. (A. Barvir, Intern. Federation of Surveyors, Krotenthallergasse 3, Vienna 8)

24–2. International Pharmaceutical Students' Federation, congr., Barcelona, Spain. (A. Damen, IPSF, Spaargarenstraat 26, Oegstegeest-Leiden, Netherlands)

25–26. International Chiropractors Assoc., annual, Davenport, Iowa. (G. R. Price, 741 Brady St., Davenport)

25–31. Environmental Control of Plant Growth, intern. symp., Canberra, Australia. (L. T. Evans, C.S.I.R.O., Div. of Plant Industry, P.O. Box 109, Canberra City, A.C.T., Australia)

26. American Assoc. of Electromyography and Electrodiagnosis, annual, New York, N.Y. (M. K. Newman, 16861 Wyoming Ave., Detroit 21, Mich.)

26–29. American Inst. of Chemical Engineers, natl. mtg., Denver, Colo. (F. H. Poettmann, Ohio Oil Co., P.O. Box 269, Littleton, Colo.)

26–29. Soil Conservation Soc. of America, Washington, D.C. (H. W. Pritchard, 838 Fifth Ave., Des Moines 14, Iowa)

26–31. American Inst. of Biological Sciences–American Assoc. for the Advancement of Science, Pacific Div., Corvallis, Ore. (AIBS, 2000 P St., NW, Washington 6, D.C.)

26–31. International Commission for Uniform Methods of Sugar Analysis, session, Berlin, Germany. (F. Schneider, Langer Kamp 5, Braunschweig, Germany)

26–1. International Federation of Information Processing Societies, annual, Munich, Germany. (I. L. Auerbach, Auerbach Electronics Corp., 1634 Arch St., Philadelphia 3, Pa.)

26–1. Radiology, intern. congr., Montreal, Canada. (C. B. Peirce, Suite 204, 1555 Summerhill Ave., Montreal 25)

26–2. History of Science, intern. congr., Ithaca, N.Y. (26–31 Aug.), and Philadelphia, Pa. (31 Aug.–2 Sept.). (Secretary, Intern. Congr. of the History of Science, Cornell Univ., Ithaca)

(See issue of 22 June for comprehensive list)