gal. (11, Blvd. de Waterloo, Brussels, Belgium.)

15–19. American Assoc. of Immunologists, annual, Chicago, Ill. (F. S. Cheever, Graduate School of Public Health, Univ. of Pittsburgh, Pittsburgh 13, Pa.)

15–19. American Soc. for Experimental Pathology, annual, Chicago, Ill. (C. C. Erickson, Inst. of Pathology, Univ. of Tennessee, 858 Madison Ave., Memphis.)

15–19. American Soc. for Pharmacology and Experimental Therapeutics, Chicago, Ill. (H. Hodge, Dept. of Pharmacology, Univ. of Rochester, Rochester, N.Y.)

15–19. Federation of American Societies for Experimental Biology, annual, Chicago, Ill. (M. O. Lee, FASEB, 9650 Wisconsin Ave., Washington 14.)

15–19. High Energy Nuclear Physics Conf., 7th annual, Rochester, N.Y. (R., Marshak, Univ. of Rochester, Rochester.)

15–20. American Inst. of Nutrition, annual, Chicago, Ill. (R. W. Engel, Dept. of Biochemistry and Nutrition, Virginia Polytechnic Inst., Blacksburg 13, Va.)

16–18. Nuclear Tests for Nondestructive Testing Applications, symp., Chicago, Ill. (American Soc. for Testing Materials, 1916 Race St., Philadelphia 3, Pa.)

17–19. American Assoc. of Anatomists, annual, Baltimore, Md. (L. B. Flexner, School of Medicine, Univ. of Pennsylvania, Philadelphia 4.)

18–20. Assoc. of Southeastern Biologists, annual, Athens, Ga. (J. C. Dickinson, Jr., Univ. of Florida, Gainesville.)

18–20. Ohio Acad. of Science, annual, Bowling Green. (R. W. Dexter, Dept. of Biology, Kent State Univ., Kent, Ohio.)

18–20. Southern Soc. for Philosophy and Psychology, annual, Gatlinburg, Tenn. (W. B. Webb, U.S. Navy School of Aviation Medicine, Pensacola, Fla.)

18–20. Venereal Disease Postgrad. Conf., 26th, Memphis, Tenn. (H. Packer, Dept. of Preventive Medicine, Univ. of Tennessee College of Medicine, Memphis 3.)

18–21. American Soc. of Ichthyologists and Herpetologists, 37th annual, New Orleans, La. (F. R. Cagle, Dept. of Zoology, Tulane Univ., New Orleans 18.)

19–20. Arkansas Acad. of Science, annual, Fayetteville. (L. F. Bailey, University of Arkansas, Fayetteville.)

19–20. Seismological Soc. of America, annual, Los Angeles, Calif. (P. Byerly, Bacon Hall, Univ. of California, Berkeley 4.)

20–26. Industrial Health Conf., 12th natl., St. Louis, Mo. (E. C. Holmblad, Industrial Medical Assoc., 28 E. Jackson Blvd., Chicago 4, Ill.)

22–24. National Acad. of Sciences, annual, Washington, D.C. (H. L. Dryden, NAS, 2101 Constitution Ave., NW, Washington 25.)

23–25. Chemistry and Biology of Mucopolysaccharides, Ciba Foundation Symp. (by invitation only), London, England. (G. E. W. Wolstenholme, 41 Portland Pl., London, W.1.)

23–25. Solid State Devices in Electric Circuits, symp., New York, N.Y. (J. Griesmann, Microwave Research Inst., 55 Johnson St., Brooklyn 1, N.Y.)

23–26. American Industrial Hygiene Assoc., annual, St. Louis, Mo. (G. D. Clayton, AIHA, 14125 Prevost, Detroit 27, Mich.)

23–27. Separation of Isotopes, colloquium of IUPAP, Amsterdam, Netherlands. (J. Kistemaker, Laboratorium voor Massaspectrografie, Hoogfe Kadijk 202, Amsterdam C.)

24–25. Industrial Research Conf., Chicago, Ill. (C. E. Barthel, Armour Research Foundation, Illinois Inst. of Technology, 10 W. 35 St., Chicago 16.)

24–25. Recent Advances in the Study of Venereal Disease, 8th annual symp., Washington, D.C. (W. J. Brown, Program Committee Chairman, Communicable Disease Center, Atlanta, Ga.)

24–26. Purity Control by Thermal Analysis, IUPAC, Amsterdam, Netherlands. (W. M. Smit, Central Inst. for Physico-Chemical Constants, Biltstraat 172, Utrecht, Netherlands.)

24–26. Sanitary Engineering Conf. on Solids Handling and Anaerobic Digestion, New York, N.Y. (W. W. Eckenfelder, Jr., Civil Engineering Dept., Manhattan College, New York 71.)

24–27. Plant Quality, 2nd internatl. colloquium, Paris, France. (L. Genevois, Faculté des Sciences, Université de Bordeaux, 20, Cours Pasteur, Bordeaux, France.)

25–26. Institute of Environmental Engineers, 1st annual tech. conf., Chicago, Ill. (G. D. Wilkinson, IEE, 9 Spring St., Princeton, N.J.)

25–26. Midwest Benthological Soc., annual, Urbana, Ill. (A. Lopinot, 205 W. Osie, Gillespie, Ill.)

25–27. American Physical Soc., Washington, D.C. (K. K. Darrow, APS, Columbia Univ., New York 27.)

25–29. Pan American Cancer Cytology Cong., Miami, Fla. (J. E. Ayre, New York Univ., New York, N.Y.)

26–27. Alabama Acad. of Science, annual, Jacksonville. (H. A. McCullough, Dept. of Biology, Howard College, Birmingham, Ala.)

26–27. American Assoc. of University Professors, annual, New York, N.Y. (R. F. Fuchs, AAUP, 1785 Massachusetts Ave., NW, Washington 6.)

26–27. Iowa Acad. of Science, annual, Cedar Falls. (J. L. Laffoon, Dept. of Zoology and Entomology, Iowa State College, Ames.)

26–27. Kentucky Acad. of Science, Mammoth Cave. (G. Levey, Berea College, Berea, Ky.)

26–27. Mississippi Acad. of Sciences, annual, Columbus. (C. Q. Sheely, State College, Miss.)

26–27. Montana Academy of Sciences, 17th annual, Billings. (L. H. Harvey, Montana State Univ., Missoula.)

26–27. South Dakota Acad. of Science, annual, Sioux Falls, S.D. (J. M. Winter, Botany Dept., Univ. of South Dakota, Vermillion.)

26–27. West Virginia Acad. of Science,

annual, Keyser. (M. Ward, Glenville State College, Glenville, W. Va.)

26–28. Cooper Ornithological Soc., annual, Los Angeles, Calif. (J. Davis, Hastings Reservation, Jamesburg Route, Carmel Valley, Calif.)

27–2. Scientific Apparatus Makers Assoc., 39th annual, White Sulphur Springs, W. Va. (SAMA, 20 N. Wacker Dr., Chicago 6, Ill.)

28. American Soc. of Hospital Pharmacists, New York, N.Y. (Mrs. G. N. Francke, 1812 Norway Rd., Ann Arbor, Mich.)

28–30. American Assoc. of Colleges of Pharmacy, annual, New York, N.Y. (G. L. Webster, Univ. of Illinois College of Pharmacy, 808 S. Wood St., Chicago 12.)

28–2. Southwestern and Rocky Mountain Division–AAAS, annual, Tucson, Ariz. (F. E. E. Germann, 1800 Sunset Blvd., Boulder, Colo.)

28–3. American Pharmaceutical Assoc., annual, New York, N.Y. (R. P. Fischelis, APA, 2215 Constitution Ave., NW, Washington 7.)

28–3. Soc. of American Bacteriologists, annual, Detroit, Mich. (J. H. Bailey, Sterling-Winthrop Research Inst., Rensselaer, N.Y.)

29–30. National Assoc. of Boards of Pharmacy, annual, New York, N.Y. (P. H. Costello, NABP, 77 W. Washington St., Chicago 2, Ill.)

29–1. American Assoc. of Spectrographers, 8th annual, Chicago, Ill. (T. H. Zink, H. Cohn & Sons, 4528 W. Division St., Chicago 51.)

29–1. American Geophysical Union, 38th annual, Washington, D.C. (W. E. Smith, AGU, 1515 Massachusetts Ave., NW, Washington 5.)

29–1. American Oil Chemists' Soc., 48th annual, New Orleans, La. (R. T. O'Connor, Southern Regional Research Laboratory, New Orleans.)

29–2. Flight Test Instrumentation Symp., 3rd annual, Los Angeles, Calif. (E. Spencer, Los Angeles Section, Instrument Soc. of America, 5225 Wilshire Blvd., Los Angeles 36.)

29–2. International Acad. of Proctology, 9th annual, New York, N.Y. (A. J. Cantor, IAP, 147–41 Sanford Ave., Flushing 55, L.I.)

29–4. Irrigation and Drainage, 3rd internatl. cong., San Francisco, Calif. (W. E. Blomgren, 260 Leetsdale Dr., Denver 22, Colo.)

30–1. Metal Powder Assoc., 13th annual, Chicago, Ill. (MPA, 130 W. 42 St., New York 36.)

May

1–2. Image Formation and Measurement with Electronic Techniques, symp., Boston, Mass. (F. Brech, 26 Farwell St., Newtonville, Mass.)

1–3. Electronic Components Conf., Chicago, Ill. (R. M. Soria, 1830 S. 54 Ave., Chicago 50.)

1–3. Society for Experimental Stress Analysis, spring, Boston, Mass. (W. M. Murray, SESA, P.O. Box 168, Cambridge 39, Mass.)

2–4. American Philosophical Assoc., annual, Chicago, Ill. (W. H. Hay, Bascom Hall, Univ. of Wisconsin, Madison 6.)

2–4. Animal Disease and Human Health Conf., New York, N.Y. (Mrs. E. T. Miner, New York Acad. of Sciences, 2 E. 63 St., New York 21.)

2–4. Illinois State Acad. of Science, annual, Normal. (R. A. Evers, Illinois Natural History Survey, Urbana.)

2–4. Kansas Acad. of Science, annual, Manhattan. (C. T. Rogerson, Dept. of Botany, Kansas State College, Manhattan.)

2–4. Midwestern Psychological Assoc., annual, Chicago, Ill. (D. W. Fiske, Dept. of Psychology, Univ. of Chicago, Chicago 37.)

2–5. Society for American Archaeology, annual, Madison, Wisc. (D. A. Baerreis, Dept. of Sociology and Anthropology, Univ. of Wisconsin, Madison 6.)

3. Engineers and Architects Conf., 4th annual, Columbus, Ohio. (G. B. Carson, College of Engineering, Ohio State Univ., Columbus 10.)

3–4. Minnesota Acad. of Science, Rochester. (B. O. Krogstad, Univ. of Minnesota, Duluth 5B.)

3–4. North Carolina Acad. of Science, annual, Winston-Salem. (J. A. Yarbrough, Meredith College, Raleigh, N.C.)

3–4. North Dakota Acad. of Science, annual, Grand Forks. (B. G. Gustafson, Chemistry Dept., Univ. of North Dakota, Grand Forks.)

3–9. Food Additives, 3rd symposium, Como, Italy. (International Bureau of Analytical Chemistry of Human and Animal Food, 18, avenue de Villars, Paris 73, France.)

4–5. American Psychosomatic Soc., 14th annual, Atlantic City, N.J. (I. A. Mirsky, APS, 551 Madison Ave., New York 22.)

4–5. Population Assoc. of America, annual, Philadelphia, Pa. (D. O. Price, Inst. for Research in Social Science, Univ. of North Carolina, Chapel Hill.)

5–9. American Ceramic Soc., 59th annual, Dallas, Tex. (C. S. Pearce, ACS, 4055 N. High St., Columbus 14, Ohio.)

5–10. International Cong. of Otolaryngology, 6th, Washington, D.C. (P. H. Holinger, 700 N. Michigan Ave., Chicago 11, Ill.)

7. International Hydrographic Conf., 7th, Monte Carlo, Monaco. (International Hydrographic Bureau, Quai des Etats-Unis, Monte Carlo.)

7–24. World Health Assembly, 10th Geneva, Switzerland. (World Health Organization, Palais des Nations, Geneva.)

8–9. European Federation of Chemical Engineering, 12th, Amsterdam, Netherlands. (Federation, Frankfurt/Main, 7, Germany.)

8–11. American Astronomical Soc., Cambridge, Mass. (J. A. Hynek, Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge 38.)

8–11. American Helicopter Soc., 13th annual, Washington, D.C. (H. M. Lounsbury, AHS, 2 E. 64 St., New York 21.)

9. Dietary Essential Fatty Acids, Assoc. of Vitamin Chemists, Chicago, Ill. (M. Freed, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32.)

9–10. Microwave Ferrites and Related Devices and Their Applications, New York, N.Y. (S. Weisbaum, Bell Telephone Laboratories, Murray Hill, N.J.)

9–10. Operations Research Soc. of

America, 5th annual, Philadelphia, Pa. (M. L. Ernst, P.O. Box 2176, Potomac Sta., Alexandria, Va.)

9–11. Virginia Acad. of Science, Old Point Comfort. (F. F. Smith, Box 1420, Richmond, Va.)

9–12. American Psychoanalytic Assoc., Chicago, Ill. (J. N. McVeigh, APA, 36 W. 44 St., New York 36.)

10–11. Indiana Acad. of Science, Turkey Run State Park, Ind. (H. Crull, Dept. of Mathematics, Butler Univ., Indianapolis 7.)

12–13. International Soc. of Bronchoesophagology, cong., Philadelphia, Pa. (C. L. Jackson, 1901 Walnut St., Philadelphia 3.)

12–16. Electrochemical Soc., Washington, D.C. (H. B. Linford, 216 W. 102 St., New York 25.)

12–16. Institute of Food Technologists, annual, Pittsburgh, Pa. (C. S. Lawrence, IFT, 176 W. Adams St., Chicago 3, Ill.)

13–15. Radiation Research Soc., annual, Rochester, N.Y. (A. Adelmann, Nuclear Science and Engineering Corp., P.O. Box 10901, Pittsburgh 36, Pa.)

13–15. Recent Developments in Research Methods and Instrumentation, symp., Bethesda, Md. (J. A. Shannon, National Institutes of Health, Bethesda.)

13–15. Structure of Electrolytic Solutions, NSF symp., Washington, D.C. (H. B. Linford, Electrochemical Soc., 216 W. 102 St., New York 25.)

13–16. Semiconductor Symposium, 5th annual, Washington, D.C. (H. M. Pollack, Semiconductor Div., RCA, 415 S. 5 St., Harrison, N.J.)

13–17. American Psychiatric Assoc. annual, Chicago, Ill. (D. Blain, APA, 1785 Massachusetts Ave., NW, Washington 6.)

14–16. International Soc. of Audiology, cong., St. Louis, Mo. (S. R. Silverman, 818 S. Kingshighway, St. Louis 10.)

15–16. Space Age Symposium, Southern Research Inst., Birmingham, Ala. (R. D. Osgood, Jr., Southern Research Inst., 917 S. 20 St., Birmingham 5.)

16–18. Engineering Industries Exposition, New York, N.Y. (H. Becher, New York State Soc. of Professional Engineers, 1941 Grand Central Terminal Bldg., New York 17.)

17. Maryland Acad. of Sciences, annual, Baltimore, Md. (T. King, Maryland Acad. of Sciences, Enoch Pratt Free Library Bldg., Baltimore 1.)

17–19. American Inst. of Industrial Engineers, 8th annual, New York, N.Y. (J. L. Southern, AIIE, 145 N. High St., Room 303, Columbus 15, Ohio.)

19–23. American Assoc. of Cereal Chemists, annual, San Francisco, Calif. (C. L. Brooke, Merck & Co., Inc., Rahway, N.J.)

19–24. National Conf. on Social Welfare, annual, Philadelphia, Pa. (F. Schmidt, NCSW, 22 W. Gay St., Columbus 15, Ohio.)

20–21. Society of American Military Engineers, annual, Washington, D.C. (National Headquarters, SAME, 808 Mills Bldg., Washington 6.)

20–22. International Voice Conf., Chicago, Ill. (H. Von Leden, 30 N. Michigan Ave., Chicago 2.)

20–24. Mass Spectrometry, New York, N.Y. (R. A. Friedel, U.S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa.)

20–25. International Conf. of Epizootics, annual, Paris, France. (12, rue de Prony, Paris 17e.)

20–31. International Federation of Agricultural Producers, 9th general assembly, Lafayette, Ind. (IFAP, 712 Jackson Pl., NW, Washington, D.C.)

22–24. American Inst. of Chemists, annual, Akron, Ohio. (L. Van Doren, AIC, 60 E. 42 St., New York 17.)

22–24. American Soc. for Quality Control, annual, Detroit, Mich. (L. S. Eichelberger, A. O. Smith Corp., Milwaukee 1, Wisc.)

22–25. International Scientific Radio Union, national spring mtg., Washington, D.C. (J. P. Hagen, U.S.A. National Committee URSI, National Acad. of Sciences, 2101 Constitution Ave., NW, Washington 25.)

23–25. Acoustical Soc. of America, New York, N.Y. (W. Waterfall, ASA, 57 E. 55 St., New York 22.)

25–26. International Cong. for the Study of the Bronchi, Lisbon, Portugal. (F. Lopo de Carvalho, 138 rua de Junqueira, Lisbon.)

25–28. International Cong. of Acupuncture, 9th, Vienna, Austria. (Austrian Assoc. for Acupuncture, 57 Schwenderstrasse, Vienna.)

26–30. Special Libraries Assoc., annual, Boston, Mass. (Miss M. E. Lucius, SLA, 31 E. 10 St., New York 3.)

29–2. American College of Chest Physicians, annual, New York, N.Y. (M. Kornfeld, ACCP, 112 E. Chestnut St., Chicago 11, Ill.)

30–31. Rheology of Elastomers, conf., Welwyn Garden City, Herts., England. (N. Wookey, British Soc. of Rheology, 52, Tavistock Rd., Edgware, Middlesex, England.)

30–1. Endocrine Soc., 39th annual, New York, N.Y. (H. H. Turner, 1200 N. Walker St., Oklahoma City 3, Okla.)

31–2. Society for Applied Anthropology, annual, East Lansing, Mich. (W. F. Whyte, New York State School of Industrial and Labor Relations, Cornell Univ., Ithaca, N.Y.)

June

1–2. American Diabetes Assoc., 17th annual, New York, N.Y. (ADA, 1 E. 45 St., New York 17.)

1–2. Soc. for Investigative Dermatology, annual, New York, N.Y. (H. Beerman, 255 S. 17 St., Philadelphia 3, Pa.)

2–6. Air Pollution Control Assoc., golden anniversary, St. Louis, Mo. Jointly with American Meteorological Soc., American Soc. of Heating and Air Conditioning Engineers, American Inst. of Chemical Engineers, and American Soc. of Mechanical Engineers. (H. C. Ballman, APCA, 4400 Fifth Ave., Pittsburgh 13, Pa.)

2–7. Society of Automotive Engineers, summer, Atlantic City, N.J. (Meetings Div., SAE, 29 W. 39 St., New York 18.)

2–8. International Cong. of Photobiol-

ogy, 2nd, Turin, Italy. (G. Matli, Istituto di Fisica dell'Universita di Torino, Via Pietro Giuria 1, Corso Massimo d'Azeglio 46, Turin.)

3–5. American Soc. of Refrigerating Engineers, Miami Beach, Fla. (R. C. Cross, ASRE, 234 Fifth Ave., New York 1.)

3–5. Chemical Inst. of Canada, 40th annual, Vancouver, B.C. (CIC, 18 Rideau St., Ottawa 2, Ont.)

3–7. American Medical Assoc., annual, New York, N.Y. (G. F. Lull, AMA, 535 N. Dearborn St., Chicago 10, Ill.)

3–7. American Soc. of Civil Engineers, Buffalo, N.Y. (W. H. Wisely, ASCE, 33 W. 39 St., New York 18.)

3–7. Hospital Cong., 10th international, Lisbon, Portugal. (J. E. Stone, 10 Old Jewry, London, E.C.2, England.)

4–9. Blood Circulation, international symp., London, England. (D. G. James, c/o 11 Chandos St., London, W.1.)

5–7. Therapeutics, 5th international cong., Utrecht, Netherlands. (F. A. Nelemens, Bureau Provisoire, Vondellaan 6, Utrecht.)

6–7. Production Techniques, 1st natl. symp., IRE, Washington, D.C. (A. A. Lawson, Melpar, Inc., 3000 Arlington Blvd., Falls Church, Va.)

6–8. National Soc. of Professional Engineers, Dallas, Tex. (P. H. Robbins, NSPE, 2029 K St., NW, Washington 6.)

8–11. American Planning and Civic Assoc., annual, Little Rock, Ark. (Miss H. James, APCA, 901 Union Trust Bldg., Washington 5.)

9–12. American Inst. of Chemical Engineers, Seattle, Wash. (F. J. Van Antwerpen, AIChE, 25 W. 45 St., New York 36.)

9–13. American Rocket Soc., semiannual, San Francisco, Calif. (J. J. Harford, ARS, 500 Fifth Ave., New York 36.)

9–13. American Soc. of Mechanical Engineers, semiannual, San Francisco, Calif. (C. E. Davies, ASME, 29 W. 39 St., New York 18.)

10–12. American Nuclear Soc., 3rd annual, Pittsburgh, Pa. (W. W. Grigorieff, ANS, P.O. Box 963, Oak Ridge, Tenn.)

10–12. Canadian Soc. of Microbiologists, annual, London, Ont., Canada. (J. A. Carpenter, Dept. of Bacteriology, Ontario Agricultural College, Guelph.)

10–14. Molecular Structure and Spectroscopy Symp., Columbus, Ohio. H. H. Nielsen, Dept. of Physics and Astronomy, Ohio State Univ., Columbus 10.)

10–14. Technical Writers' Institute, 5th annual, Troy, N. Y. (J. R. Gould, TWI, Rensselaer Polytechnic Inst., Troy.)

11–13. American Meteorological Soc., Monterey, Calif. (K. C. Spengler, AMS, 3 Joy St., Boston 8, Mass.)

11–15. Ionization Phenomena in Gases, 3rd internatl. conf., Venice, Italy. (U. Facchini, Laboratori CISE, Via Procaccini 1, Milan, Italy.)

12–15. Colloquium of College Physicists, 19th annual, Iowa City, Iowa. (J. A. Van Allen, Dept. of Physics, State Univ. of Iowa, Iowa City.)

16–20. American Soc. of Mammalogists, annual, Lawrence, Kansas. (B. P. Glass, Dept. of Zoology, Oklahoma A.&M. College, Stillwater.)

16–21. American Soc. for Testing Materials, Atlantic City, N.J. (R. J. Painter, ASTM, 1916 Race St., Philadelphia 3, Pa.)

17–19. Astronomical Soc. of the Pacific, annual, Flagstaff, Ariz. (S. Einarsson, Univ. of California, Berkeley 4.)

17–19. Health Physics Soc., 3rd annual, Pittsburgh, Pa. (H. W. Patterson, Radiation Lab., Univ. of California, Berkeley 4.)

17–20. Carbon Conf., 3rd, Buffalo, N.Y. (Carbon Conf., Univ. of Buffalo, Buffalo 14.)

17–20. Institute of Aeronautical Sciences, natl. summer, Los Angeles, Calif. (S. P. Johnston, IAS, 2 E. 64 St., New York 21.)

17–21. American Soc. for Engineering Education, annual, Ithaca, N.Y. (W. L. Collins, Univ. of Illinois, Urbana.)

17–21. Canadian Medical Assoc., 90th annual, Edmonton, Alberta, Canada. (CMA, 244 George St., Toronto, Ont., Canada.)

17–22. Coordination of Galactic Research, internatl. symp., Stockholm, Sweden. (P. T. Oosterhoff, University Observatory, Leiden, Netherlands.)

17–22. Internal Combustion Engine Cong., 4th internatl., Zurich, Switzerland. (C. C. M. Logan, British National Committee, 6 Grafton St., London, W.1.)

19–21. Association for Computing Machinery, annual, Houston, Tex. (J. Moshman, ACM, 2 E. 63 St., New York 21.)

EQUIPMENT NEWS

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Science *does not assume responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to* Science, *Room 740, 11 W. 42 St., New York 36, N.Y. Include the name(s) of the manufacturer(s) and the department number(s).*

■ SERIAL MARKER photographically assigns a 4- or 5-digit number to a light-sensitive emulsion. In the darkroom, before development, the film or plate is held against a Lucite window through which a number is projected by pressing a switch. The number is advanced by pressing a second button. Resetting may be accomplished by rotating a knob. (Spex Industries, Inc., Dept. S189)

■ RADIOACTIVE MESCALINE [2-(3,4,5 trimethoxyphenyl) ethylamine-1-C^{14} sulfate] is available in research quantities with a specific activity of about 4 μc/mg for research concerning mental illness and nervous disorders. (Beta Laboratories Inc., Dept. S192)

■ GLASS—its manufacture, applications, and history—is the subject of a 64-page booklet entitled *This Is Glass.* (Corning Glass Works, Dept. S198)

■ PIPETTE DRYER handles pipettes up to 375 mm in length and accommodates standard pipette washer racks up to 6 in. in diameter. The dryer is made of an anodized aluminum cylinder; it has a 300-watt heater and is suitable for operation on a-c or d-c power. (Chicago Surgical and Electrical Co., Dept. S197)

■ CHILLING MACHINE permits control of temperatures from 25°F to – 135°F. The chamber has a capacity of 2 ft^3. Thermal capacity is approximately 400 Btu/hr at – 120°F. (Cincinnati Sub-Zero Products, Dept. S199)

■ MICROWAVE GENERATORS and sources cover frequencies from 18,000 to 50,000 Mcy/sec. The interchangeable tuning units require no further adjustment after plug-in to the basic unit. Self-contained instruments provide continuous-wave or modulated signals of known frequency. (Polarad Electronics Corp., Dept. S200)

■ TIME-SIGNAL RECEIVER is specifically designed to receive radio transmissions from National Bureau of Standards stations WWV or WWVH. It uses crystal control for fixed frequency selection. Less than 2 μv of signal is required to produce a signal-to-noise ratio of 10 db on all operating frequencies. (Specific Products, Dept. S209)

■ VACUUM GLAND for laboratory apparatus is available in four standard tapers, 24/40, 29/42, 34/45 and 45/50, for either 6 or 10-mm shafts or tubing. Said to be vacuum-tight to 5×10^{-6} mm-Hg and usable at temperatures up to 200°C, the gland features O-ring seals and a Teflon body. (Arthur F. Smith Co., Dept. S205)

■ DIAPHRAGM FEEDER for removing concentrated chemicals directly from shipping containers permits handling minute amounts of most corrosive chemicals. Pumping rates, from 0.8 to 8.0 gal/24-hr period, can be adjusted by varying the stroke length and the stroking frequencies. (Proportioneers, Inc., Dept. S213)

■ ELECTRON PARAMAGNETIC RESONANCE SPECTROMETER is capable of inducing and observing electron paramagnetic resonance in substances possessing a resultant electronic magnetic moment. In the case of an unpaired electron, a strong magnetic field applies a torque to the axis of the resultant magnetic moment. The resulting rate of gyroscopic precession is characteristic of the particular atom and its environment. A variety of conditions influencing the resultant electron magnetic moment can be studied in this way—for example, free radicals, sites of radiation-damage, and impurities in semiconductors. The laboratory spectrometer operates at X-band frequency (nominally 9.5 kMcy/sec). The sample requirement can be defined in moles of electron spins and is usually a small fraction of 1 cm^3. (Varian Associates, Dept. S206)

■ DIRECT-WRITING OSCILLOGRAPH uses a jet of ink directed at the moving chart paper as the writing mechanism. A nozzle attached to a galvanometer movement, fed by a high-pressure membrane pump, produces the jet. Since the jet does not contribute to the moment of inertia of the system, a high resonant frequency of about 650 cy/sec is possible. Compensation circuits in a preamplifier permit recording to 1000 cy/sec. (Elema Aktiebologet, Dept. S202)

■ TELEVISION CAMERA for closed-circuit use measures 1⅞ by 2⅜ by 4½ in. Used with an *F*1.9 lens, the camera requires 10 ft-ca of scene illumination for clear-contrast pictures. Photoelectric iris control provides accommodation to variation of lighting of 100 to 1. The camera requires 350 w of 115-v, 60-cy/sec power (Radio Corporation of America, Dept. S212)

■ TORQUE TRANSDUCERS for the ranges 0.05 and 0.5 in. lb operate without brushes and slip rings and without contact between the torque shaft and pickup

housing. They operate on the variable permeance principle. Sensitivity and linearity are not affected by shaft speed. (Crescent Engineering and Research Co., Dept. S214)

■ EVENT RECORDER uses electric writing to record 78 channels of on-off information. Chart speeds of 2 and 10 in./min provide continuous recording for 50 hr and 10 hr, respectively. An internal power supply furnishes writing voltage for the styli. (Brush Electronics Co., Dept. S215)

■ DIGITAL COMPARATOR accepts a parallel binary signal, compares it with another similarly presented signal, and provides as output a difference-modulated alternating signal. If the second signal represents feedback, the output may be used to initiate control operations. The device is transistorized throughout and will operate through a range of temperatures from −55° to +55°C. Band width is limited by carrier frequency. (Norden-Ketay Corporation, Dept. S204)

■ BEAT-FREQUENCY AUDIO OSCILLATOR is completely transistorized and powered by mercury or penlight-cell batteries. Frequency range is 50 cy/sec to 15 kcy/sec with an output of 1 v at 600 ohm. Output is constant to 1 db over the entire range. Dimensions are 6 by 2 by 3¾ in. (Kay Electric Co., Dept. S210)

■ VACUUM-TUBE VOLTMETER measures d-c voltages from 2 mv to 1000 v with 121 Mohm input resistance. Alternating voltages can be measured from 50 cy/sec to ultrahigh frequencies. Three probes cover the frequency range. As an ohmmeter, the instrument is calibrated from 0 to 500 with eight multiplier ranges from × 1 to × 10 Mohm. (Allen B. DuMont Laboratories, Inc., Dept. S226)

■ TIME-GATE COUNTER uses time sampling to accomplish conversion of units of measurands that are presented to the counter as frequency analogs. The sampling interval is adjustable from 0.1 msec to 0.9999 sec in steps of 0.1 msec. The counter thus introduces a calibration constant so that the measured quantity is displayed directly in desired units. A counter with gate times up to 9.9999 sec is also available. (Dynac Inc., Dept. S211)

■ ULTRASONIC GENERATORS provide 500-w output at a varied range of frequencies. Depending on the model, the generators operate at a nominal fixed frequency of 40 kcy/sec or at any frequency between 20 kcy and 2Mcy/sec. (Gulton Industries, Inc., Dept. S229)

JOSHUA STERN
National Bureau of Standards

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POSITIONS WANTED

Bacteriologist–Medical Technician, equivalent M.S.; 4 years of teaching; 15 years as bacteriologist and administrative position in clinical laboratory; publications. Desires teaching in college. Box 92, SCIENCE. 3/15

Biochemist, Ph.D.; seeks position in clinical chemistry in hospital or medical school. A recognized leader in the field, certified by the American Board of Clinical Chemists; presently employed. Box 96, SCIENCE. 3/15, 22, 29

Botanist, Plant Physiologist, Ph.D., 1956 graduate, Canadian. Desires teaching and/or research position. At present on a postdoctorate research fellowship. Currently available. Box 83, SCIENCE. 3/15

College teaching, biology, general botany, general zoology, conservation, natural history; M.S. plus more than 30 graduate credits; many years varied research experience. Box 84, SCIENCE. X

Geneticist, broad background, enjoys teaching; ideal genetics, general courses, vertebrate biology; 10 years' teaching experience; publications. Desires new location. Box 97, SCIENCE. X

POSITIONS OPEN

Assistantships and Fellowships, research and teaching in bacteriology. Specialized research in virology, general, industrial, pathogenic, soil, food and dairy bacteriology. Salary: $1200 to $1700 for 9 months; $1800 to $3000 for 12 months. Write to Department of Bacteriology, Oregon State College, Corvallis, Oregon. 3/8, 15, 22

Bacteriologist, 400-bed hospital, Chicago. $5000–$6000; M.A. desirable. Hospital experience essential. Box 85, SCIENCE. X

Biochemists. Assistant or associate professsors (2); September 1957. To teach biochemistry in an eastern medical school; ample time and facilities for research. Ph.D. degree in biochemistry or M.D. required with several years of experience or postdoctorate work. One must be experienced in radioisotope work preferably with degree from Oak Ridge Institute of Nuclear Studies. The other should have a strong minor in physiology or pharmacology. Salary range $6500–$8500. Box 86, SCIENCE. 3/22, 29; 4/5

Biochemist for 600-bed general hospital. Salary dependent upon degree, experience, and qualifications. Write Personnel Director, Good Samaritan Hospital, Cincinnati 20, Ohio. 3/15, 22

General Geology Professorship. The Faculty of Science, University of Cairo, announces the vacancy of this post and invites nominees to send in their applications addressed to the Dean of the Faculty of Science, Giza, Egypt, within 1 month from the date of this advertisement, together with lists of their publications. The basic salary for the post is from £E 900 to £E 1500 per annum, according to qualifications and experience. Additional allowances are granted for expatriation amounting to £E 700 and for high cost of living amounting to about £E 100 per annum.

Traveling expenses for the professor appointed together with his family, will be paid by the University at the beginning and end of contract. A remuneration of 1 month's salary is granted for every year of service at the end of contract period.

The language of teaching (by foreign professors) is English. X

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ENDOCRINOLOGIST

Ph.D. or equivalent with up to 4 years' experience. Will head an Endocrine Research group working in Adrenal Pharmacology and related fields. Duties include screening and development of new drugs and development of new research projects.

Candidate selected will work for major expanding suburban pharmaceutical manufacturer.

Our employees know of this ad.

Please send résumé to Box 95, SCIENCE. Interviews will be arranged at your convenience.

Instructorships and Professorships in astronomy, physics, mathematics, general science, physical chemistry, and engineering at preparatory and college level in Near East. All teaching in English. Apply Near East College Association, 40 Worth Street, New York 13.

(a) **Medical Director**; newly created department, major pharmaceutical company; duties include directing clinical research; knowledge of fluid therapy advantageous, not required; Midwest. (b) **Ph.D. in Chemotherapy**; training in bacteriology, mycology, allied fields desirable; research experience, preferably industrial, advantageous; pharmaceutical company; East. (c) **Clinical Physiologist**, preferably one whose background has been in respiratory physiology; M.D. preferred; Ph.D. eligible; university research department. (d) **Senior Toxicologist**, Ph.D.; excellently equipped laboratories for scientific criminal investigations. (e) **Biochemist**; Ph.D. or M.D., experienced enzyme chemistry, qualified to direct department, 600-bed teaching hospital; East. (f) **Assistant Professor, Bacteriology**; state university; West. S3-3 Medical Bureau, Burneice Larson, Director, 900 North Michigan Avenue, Chicago. X

Microbiologist. Ph.D. or equivalent to initiate physiological-biochemical study of biological agents possibly involved in formation and subsequent alteration of coals and petroleums. Experience with manometric and chromatographic techniques desirable. Apply with references and curriculum vitae to The Secretary, Research Council of Alberta, 87 Ave. and 114 St., Edmonton, Alberta, Canada. 3/15

OPENINGS IN SEPTEMBER. Associate professor of animal genetics; also assistant professor of plant physiology; teaching, research. Direct graduate students apply immediately. Director, Department of Biology, St. Louis University, 1402 South Grand, St. Louis, Mo. 3/15, 22 29

POSITIONS OPEN

MEDICAL WRITER

To work with Scientific Information Group in compilation of medical data and preparation of manuscripts for medical journal publication. B.S. or M.S. with background in chemical or biological sciences. Previous experience preferred. Write stating qualifications and salary desired to

Personnel Department
WYETH
Box 8299, Philadelphia 1, Pa.

Medical Microbiologist, M.D. or Ph.D. for department of microbiology in large midwest medical center hospital. Applicant should have experience in the broad field of diagnostic microbiology and an interest in research and teaching. Salary open. Box 73, SCIENCE. 3/1, 8, 15

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An independent laboratory has an opening for a classical physicist with experience in thermodynamics and mechanics. This man should be a creative thinker with 3 to 5 years of laboratory experience. Some graduate training is desirable. Submit résumé to:

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P.O. Box 3855
Cleveland 10, Ohio

POSITIONS REQUIRING DEGREES IN MEDICINE OR SCIENCE: (a) **Chemist**; B.S. or M.S., experienced toxicology, clinical chemistry, physical methods, well trained in latest procedures; county health laboratory; to $6200; East. (b) **Bacteriologist**; full charge of department, 100-bed closed staff hospital, affiliated large, outstanding clinic group; important midwestern university center. (c) **Immunochemist**; Ph.D. trained biochemistry, immunology; central allergy research laboratory preparing extracts for test, treatment of allergic patients; $7500, very large eastern hospital. (d) **Principal Chemist**; Ph.D. for administrative appointment, central laboratory, state health department; Southeast. (e) **Senior Research Physiologist–Pharmacologist**; prefer trained reproduction physiology; supervise research group, should be experienced animal physiology laboratory; to $7500; eastern pharmaceutical house. Woodward Medical Bureau, 185 North Wabash, Chicago. X

TECHNICAL WRITER

To work with research scientists in compilation of experimental data and preparation of manuscripts for publication in journals devoted to research in biological sciences. B.S. or M.S. with background in chemical or biological sciences. Previous experience preferred. Write stating qualifications and salary desired to

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THE PLENTIFUL RARE EARTHS

some facts about a clubby clan of elements that are rare in name only

a report by LINDSAY

We got to thinking the other day that perhaps a lot of industry folks are passing up a diamond-studded opportunity because they believe the rare earths are unavailable in commercial tonnages. Nothing could be farther from the truth. Rare earths are *not* rare! Commercial salts of the rare earths are available, right now, for prompt shipment in quantities from a gram to a carload.

That the rare earths are so plentiful is due, in large part, to Lindsay. During the last 50 years, Lindsay has developed the extraction and separation of rare earths to a high degree.

New equipment and processes are now in operation at Lindsay's West Chicago plant and are producing greater quantities of these versatile materials in higher purities than before.

FROM 57 THROUGH 71—Some chemists call rare earths Lanthanides, Lanthanons or the Lanthanum Series. Actually they are not earths, but trivalent metals, a rather amazing family of elements . . . atomic numbers 57 through 71. They are grouped together because they are always found together, with thorium and yttrium, in ores such as monazite, and all have closely related properties. While rare earths are technically metals, Lindsay produces them in chemical salt forms—individually or in combinations.

ATOMIC NUMBER	ELEMENT
39	Yttrium
57	Lanthanum
58	Cerium
59	Praseodymium
60	Neodymium
62	Samarium
63	Europium
64	Gadolinium
65	Terbium
66	Dysprosium
67	Holmium
68	Erbium
69	Thulium
70	Ytterbium
71	Lutetium
90	Thorium

SOME USES FOR RARE EARTHS

LANTHANUM—As lanthanum oxide in a high refractive optical glass, particularly for aerial cameras and other instruments.

CERIUM—Glass polishing. Scavenger in explosives production. Radiation protection glass for atomic reactors. Opacifier for porcelain. Oxidizing catalysts in organic preparations. Ultraviolet light absorber.

MIXED RARE EARTHS—Misch metal for lighter flints and alloy uses. Motion sickness medication. Cores of arc carbon electrodes. Aluminum and magnesium alloys.

PRASEODYMIUM & NEODYMIUM—Dichroic colorants for ceramic glazes and glass. Used in better grade sun glasses. They do not lower light permeability and index of refraction when used as colorant or decolorizer. Ceramic capacitors.

The rare earths are becoming increasingly important in the production of steel and steel alloys. Small quantities added to the metal in the ladle result in a strong, fine-grained steel. Steel thus treated has great resistance to low temperature oxidation and corrosion. Stainless varieties have better hot and cold workability. Silicon and electrical grade steels have better electrical qualities.

Rare earths added to cast iron act as powerful deoxidizers and help remove sulfur from the molten metal. They are responsible for cast iron that is resistant to scaling at higher temperatures and to certain corrosive atmospheres. In malleable metals, they act as a carbide stabilizer.

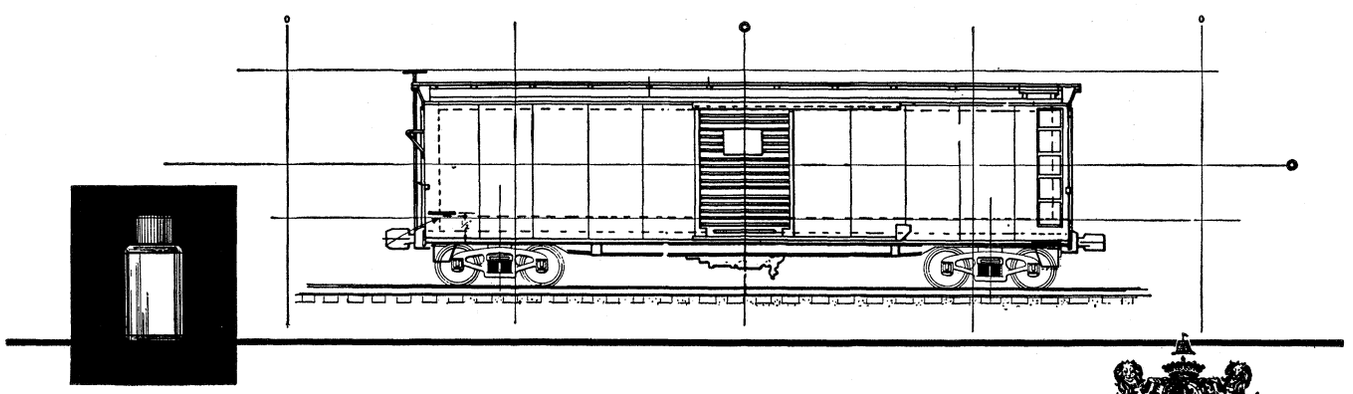
Magnesium-rare earth-zirconium alloys have excellent casting qualities and mechanical properties that make them ideal for important light-weight stressed components of aircraft engines.

Other rare earth compounds are used extensively for waterproofing, mildewproofing, weighting and dyeing of fabrics and compounding printing inks and phosphors.

LIKE AN ICEBERG—You might compare uses for the rare earths to an iceberg. What you see is only a small part of what lies undiscovered under the surface. In all probability, there is a real place for one or more of the rare earths in your operations. New uses—and profitable ones, too—are being discovered constantly. These versatile elements offer so much promise in so many different ways they merit your investigation.

To industries interested in the rare earths, we offer detailed technological data compiled over the years by our research staff. We will also furnish samples for experimentation.

And please remember . . . the rare earths are *plentiful*. Lindsay can supply you with quantities from a gram to a carload.



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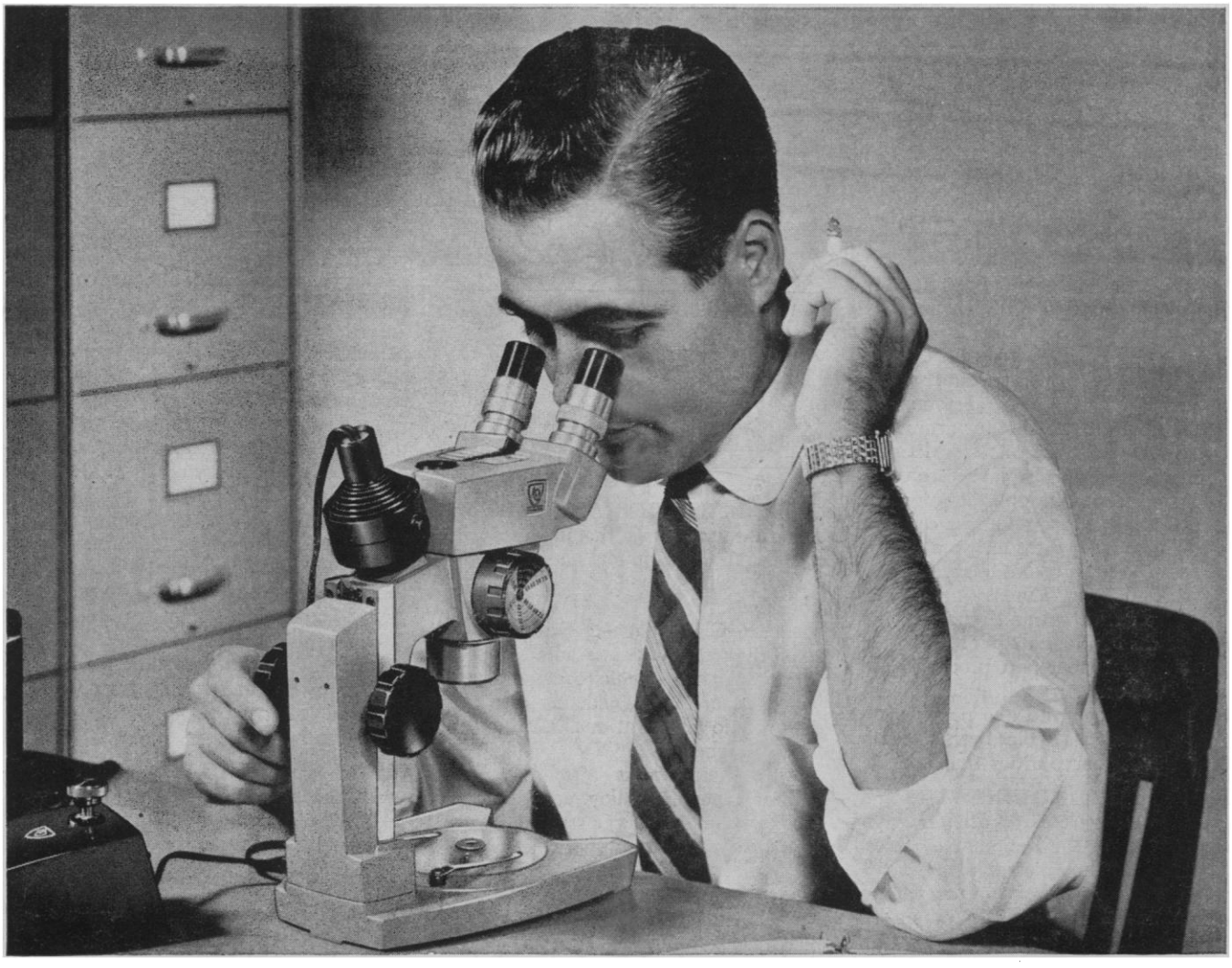

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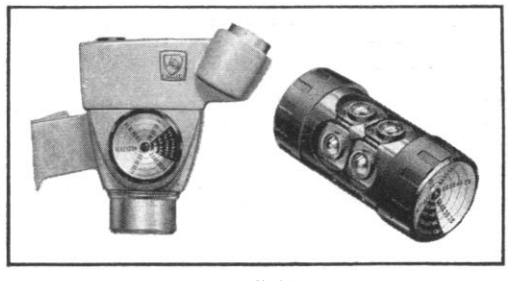

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