

12-16. American College of **Cardiology**, 13th annual, New Orleans, La. (P. Reichert, Empire State Bldg., New York, N.Y. 10001)

13-14. Texas **Industrial Pharmacy Seminar**, Austin. (L. R. Parker, Pharmacy Extension Service, Univ. of Texas, Austin)

15-16. **Atomic Energy**, Japanese natl. symp., Tokyo. (Atomic Energy Soc. of Japan c/o Atomic Energy Research Inst., 1-1 Shiba-tamura-cho, Minato-ku, Tokyo)

16-22. **National Engineers' Week**, sponsored by the National Society of Professional Engineers, 2029 K St., NW, Washington, D.C. 20006)

17-19. **American Standards Assoc.**, 14th annual conf., Washington, D.C. (ASA, 10 E. 40 St., New York, N.Y. 10016)

17-20. **Metals for Use at High Temperature**, intern. symp., New York, N.Y. (D. A. Parks, Inst. of Metals Div., Metallurgical Soc., 345 E. 47 St., New York, N.Y. 10017)

17-21. **Information Storage and Retrieval**, 6th, Washington, D.C. (L. W. Hattery, American Univ., 1901 F St., NW, Washington, D.C. 20006)

19-21. **National Soc. of College Teachers of Education**, Chicago, Ill. (E. J. Clark, Indiana State College, Terre Haute, Ind.)

19-21. **Solid-State Circuits**, intern. conf., Philadelphia, Pa. (L. Winner, 152 W. 42 St., New York, N.Y. 10036)

19-22. **American Educational Research Assoc.**, Chicago, Ill. (J. R. Gerberich, 1201 16th St., NW, Washington, D.C.)

19-5. **Pan American Medical Assoc.**, 39th congr., the Americas, during a cruise aboard the S.S. *Independence*. (J. J. Eller, 745 Fifth Ave., New York, N.Y.)

23-27. **Technical Assoc. of the Pulp and Paper Industry**, 49th annual, New York, N.Y. (TAPPI, 360 Lexington Ave., New York, N.Y. 10017)

23-28. **Otorhinolaryngology and Bronchoesophagology**, 9th Pan American congr., Bogota, Colombia. (C. M. Norris, 3401 N. Broad St., Philadelphia, Pa. 19140)

24-25. **Atmospheric Movements of Radioactive Materials**, Geneva, Switzerland. (World Meteorological Organization, Geneva)

24-25. **Writing-Improvement Programs for Engineers**, seminar, New York, N.Y. (C. A. Meyer, RCA Commercial Engineering, Harrison, N.J.)

24-28. **Institution of Electrical Engineers**, intern. conf. on transmission aspects of communications networks, London, England. (IEE, Savoy Pl., London, W.C.2)

25-26. **Dairy Engineering**, natl. conf., East Lansing, Mich. (C. W. Hall, College of Agriculture, Michigan State Univ., East Lansing)

26-28. **Biophysical Soc.**, Chicago, Ill. (W. Sleator, Jr., Washington Univ. Medical School, 660 Kingshighway, St. Louis 10, Mo.)

26-28. **Scintillation and Semiconductor symp.**, Washington, D.C. (G. A. Morton, RCA Laboratories, Princeton, N.J.)

27-28. **Cellular Basis for the Action of Cardiac Drugs**, Philadelphia, Pa. (Heart Assoc. of Southeastern Pa., 318 S. 19 St., Philadelphia 3)

17 JANUARY 1964

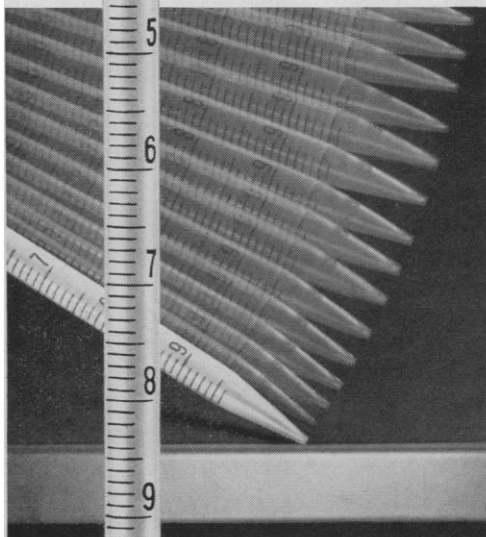
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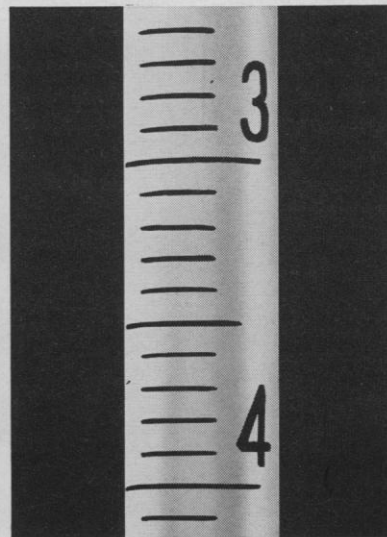
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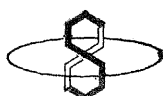
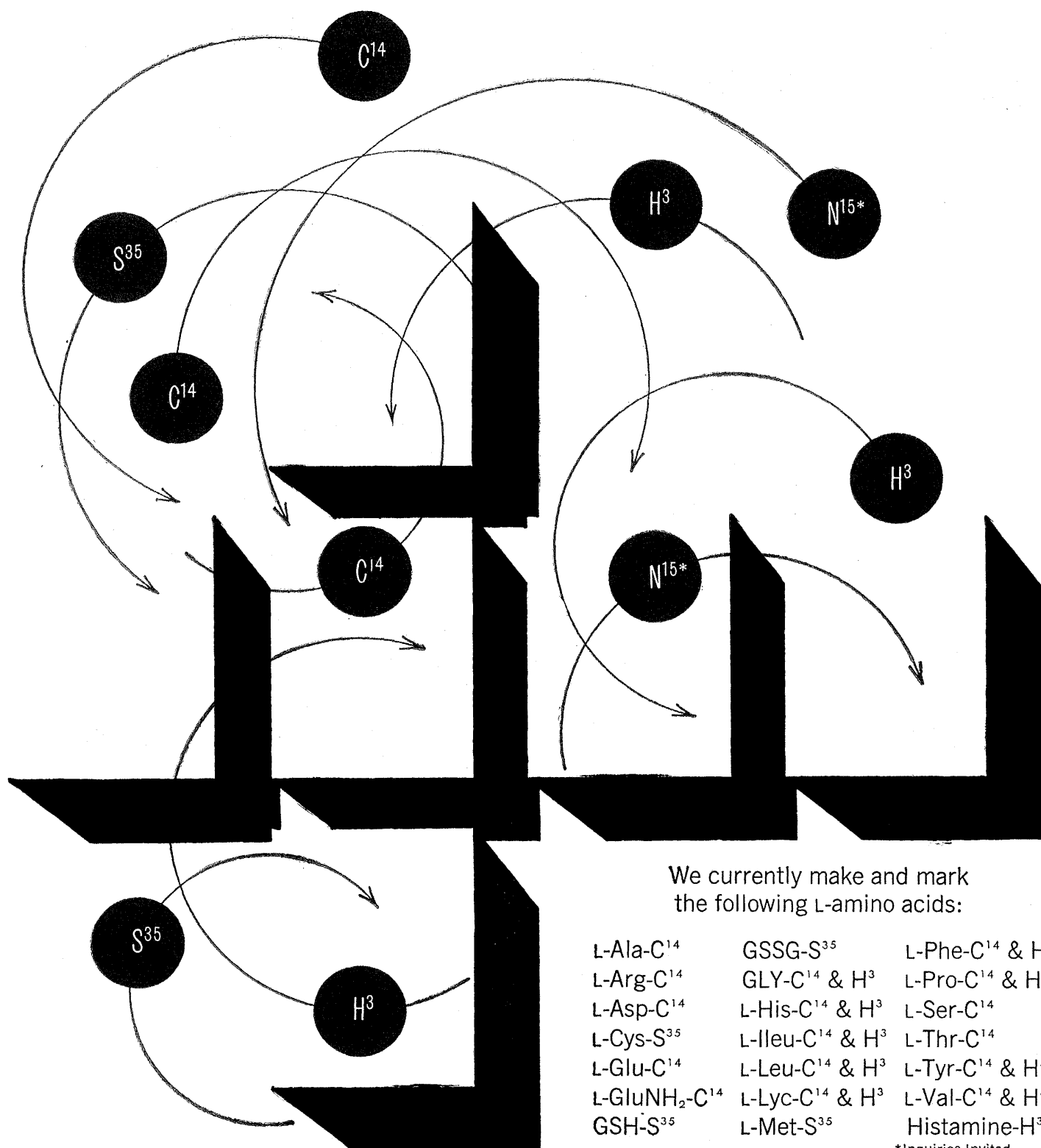
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Automatic liquid nitrogen level control uses a solid-state sensor said to be immune to physical shock and to withstand switching from liquid nitrogen to boiling water without damage. Heat transfer from the sensor is 0.05 watt while the sensor is immersed in liquid. The single sensor will monitor variation in upper and lower liquid levels. The sensor distinguishes between liquid and vapor and splashing will not trigger a false signal. The control unit may be placed up to hundreds of feet distant from the sensor.—J.S. (John & Frame Co., Dept. S132, Box 27, Livermore, Calif.)

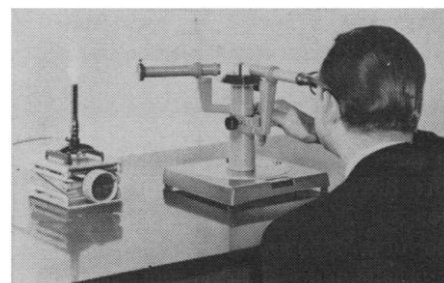
Portable dust monitor is a convenient instrument for determining the size and nature of dust particles down to $2\ \mu$ in diameter contained in 5-cc samples of air. The instrument, small enough to be hand held, consists of an intake pump, a glass collecting disk, and a microscope. The pump is

a spring-loaded piston fitted to a cylinder of 5 cc capacity. The glass disk is $2\frac{13}{16}$ inches in diameter and is divided into 30 numbered sectors on the side opposite the collecting surface. The microscope, mounted above the collecting surface, uses a $\times 12$ objective with a $\times 18$ eyepiece to give an overall magnification of 216. To collect samples, the glass plate is carefully cleaned and coated with the special adhesive supplied. After reassembly, the collecting chamber is rotated until the glass is positioned with sector No. 1 under the air inlet. The pump is now depressed against its spring, and the inlet cover opened. When it is desired to collect a sample, the pump is released and the dust contained in 5 cc of air is deposited on the section 1 of the glass disk. To examine this sample, the chamber is rotated until sector 1 is under the microscope. Each sample may be examined, or all 30 samples may be collected and examined at a later time. Sizing of particles is accomplished by comparing the particles to three black dots of 2, 4, and $6\ \mu$ printed on a graticule. A dark ground illuminator attachment which makes the outlines of the particles appear bright on a dark field facilitates sizing and counting of $1\text{-}\mu$ particles.—D.J.P. (The Konimeter by Watson and Sons Ltd. of England; distributed by William J. Hacker and Co., Inc., Dept. S152, Box 646, West Caldwell, N.J.)

Glass-insulated microwire is designed for use over an extreme range of temperatures. Useful operating temperature range for copper-core wire is -225° to $+550^\circ\text{C}$ and for manganin-core wire, -225° to 400°C . Breakdown temperature is 600°C . The wire is available in experimental quantities with minimum possible outside diameter 0.01 mm and minimum possible core diameter 0.001 mm. At normal room temperature, the insulation resistance of a 5-inch length of wire surrounded by mercury is 10^7 megohms at 500 volts. In liquid solder at 200°C the insula-

tion resistance drops to 10^8 megohms and at 500°C the insulation resistance drops to 1 megohm. When the temperature is brought back to normal room temperature the leakage resistance returns to normal. The insulation resistance remains 10^7 megohms at -197°C and transfer from liquid nitrogen to boiling water does not crack the glass insulation. Current-carrying capacity equivalent to 60,000 amp/in.² has been measured in a glass-insulated wire with a core diameter 0.015 mm. Ultimate tensile strength of a 0.03-mm diameter wire was 75 kg/mm², and of an 0.005-mm diameter wire, 300 kg/mm². The microwire is available with copper, manganin, gold, and silver cores.—J.S. [Applied Research (Instruments) Ltd., Dept. S134, Emefco House, Bell St., Reigate, Surrey, England]

Student spectrometer consists of a telescope with achromatic objective and eyepiece with reticle and sliding focus adjustment; a collimator with achromatic optics and adjustable slit; and a prism table with holder adaptable to the 60° prism supplied with the instrument or to a diffraction grating which is available as an accessory. The col-



limator and telescope assemblies are mounted on a heavy rectangular base with a movable triple-scale plate calibrated in angstrom units and in degrees with fixed verniers for each scale. A pair of telescoping light shields to cover the prism table during observations are also included. Convenient thumbscrews permit rapid and easy adjustment and firm clamping of all moving parts on the student spectrometer. A fine adjustment is also provided for angular rotation of the telescope. In addition to the diffraction grating accessory for use on the prism table, a reticle illuminator is also available at extra cost. This unit illuminates the reticle of the telescope eyepiece for identifying very faint spectral lines.—R.L.B. (Central Scientific Co., Dept. S145, 1700 Irving Park Rd., Chicago 13, Ill.)

The material in this section is prepared by the following contributing writers:

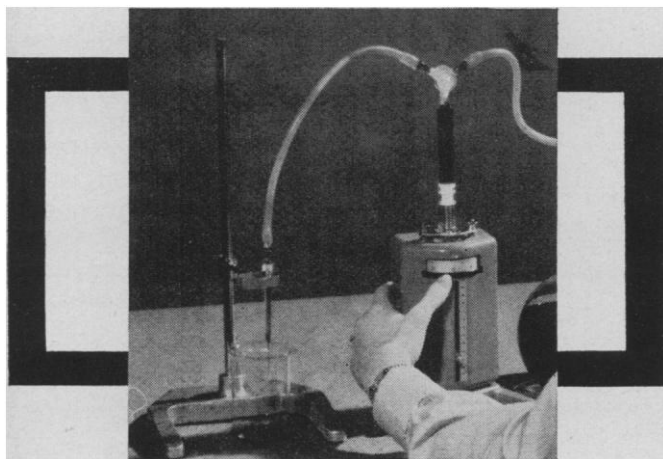
Robert L. Bowman (R.L.B.), with the assistance of Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

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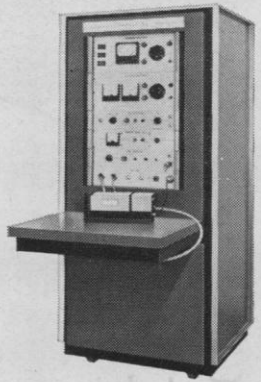
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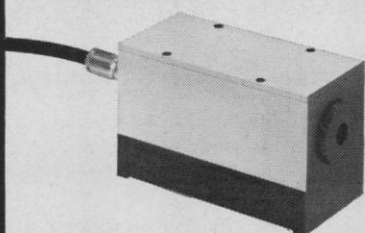
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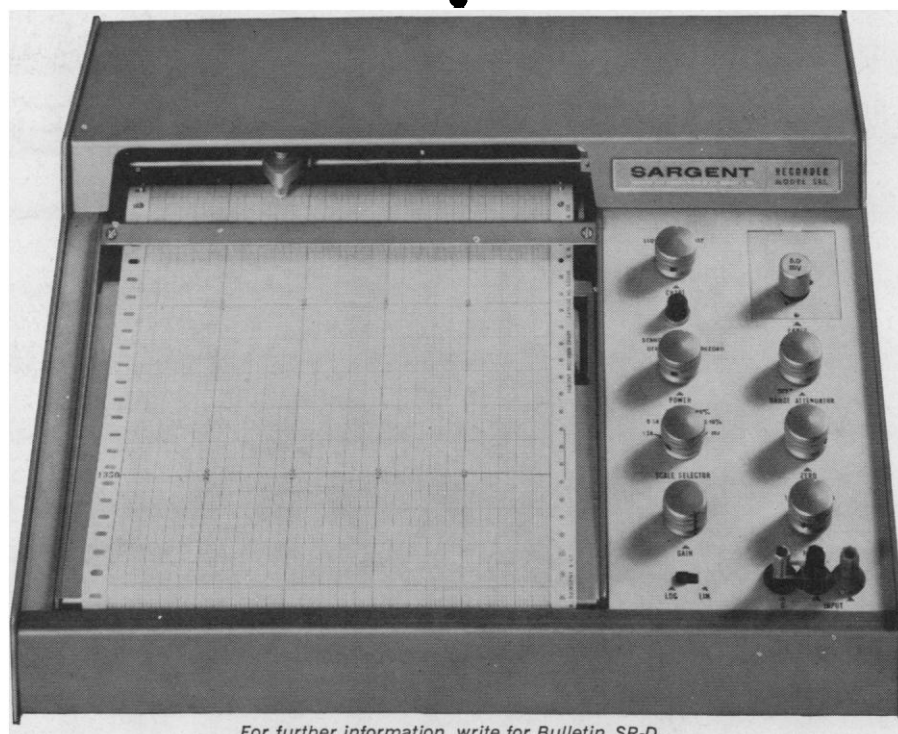
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