

New Products

Continuous-wave gas-phase laser was developed jointly by the manufacturer and Spectra-Physics Inc. The laser uses a mixture of helium and neon as the active medium to produce a continuous beam of highly directional coherent radiation. The radiation is also highly monochromatic with wavelength 11,530 Å. When focused to a parallel beam, spread is less than 1 minute of arc. The resonator is a fused-silica plasma tube, 60 cm long, with multilayer dielectric coated confocal reflectors of high-optical-quality fused silica. An excitation unit, a 40.68-Mcy/sec oscillator of 40 watts nominal output, is integrally mounted to the plasma-tube housing with necessary impedance matching network. Power supply is separately housed. Output of the laser in continuous operation is about 1 mw from each end.—J.S. (Perkin-Elmer Corp., Dept. S452, Norwalk, Conn.)

All-purpose centrifuge (Beta-Fuge model A) has speeds to 17,700 rev/min and develops forces to 40,000 grav. It handles 11 different rotors and is reported to be the first centrifuge to spin 3300-ml rotor volume with forces in excess of 14,000 grav. Capacity is from 96 to 3300 ml. Temperature range is from -20° to $+40^{\circ}\text{C}$. This unit is especially designed for high-speed centrifugation and is powered by a $1\frac{1}{2}$ -hp universal motor drive. The self-centering rotor support with automatic imbalance trip switch assures longer bearing life. A time-tested forced air circulation system provides efficient refrigeration. The unit has a convenient control panel and an all-transistorized control system. It incorporates automatic, electro-dynamic braking plus rotor speed-limiting switches. An indicator on the control panel warns when the brushes are worn or need replacement and employs a safety cut-off that stops the motor when a brush change is required. A continuous-flow system

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

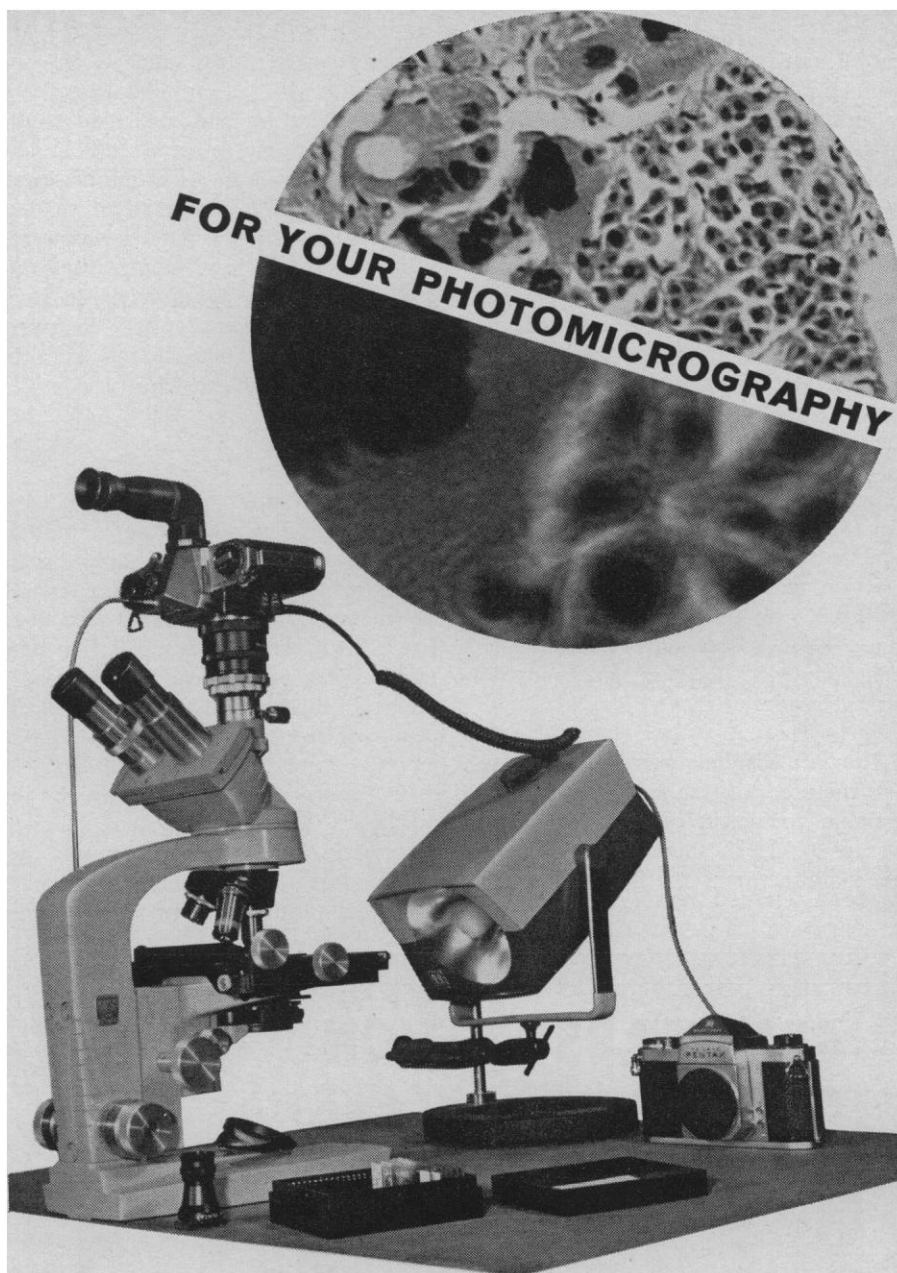
Robert L. Bowman (R.L.B.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

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

The information reported is obtained from manufacturers and other sources considered reliable. Neither *Science* nor any of the writers assumes responsibility for the accuracy of the information.

Address inquiries to the manufacturer, mentioning *Science* and the department number.

16 NOVEMBER 1962



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The photomicrographs at upper right are of an adrenal cortical carcinoma at 100x and 400x magnification. They were taken with the setup pictured above—a standard laboratory microscope, a Honeywell Pentax 35mm single lens reflex camera with microscope adapter and right-angle finder, and a Honeywell Strobolar (electronic flash) light source. A second Honeywell Pentax body, loaded with color film, stands by.

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can be used with liters of material and sedimentation collected directly in polyethylene liners.—R.L.B. (Lourdes Instrument Corp., Dept. S489, 656-78 Montauk Ave., Brooklyn 8, N.Y.)

Frequency response analyzer (model 711A-R) is designed to determine the frequency response between two points, *A* and *B*, when an oscillator signal cannot be injected at *A* and both signals *A* and *B* are highly nonlinear and noisy. The instrument operates over the frequency range 0.01 to 1000 cy/sec and uses Fourier analysis techniques to accomplish the frequency response determination. The method is said to provide up to 40 db harmonic and noise rejection and to result in an accuracy of ± 0.25 db amplitude and 2 deg phase.—J.S. (Boonshaft and Fuchs, Inc., Dept. S501, Hatboro Industrial Park, Hatboro, Pa.)

Tungsten disulfide powder is a lamellar-structured dry solid lubricant with dynamic coefficient of friction said to average 0.025 to 0.060. According to the manufacturer, the powder has a high affinity for all surfaces including

metals, plastics, glass, and so on, and is resistant to galling and seizure at high temperature and high load conditions. It is stable in air to 950°F, and its oxidation rate in air at temperatures above 1000°F is slower than that of molybdenum sulfide. The dry powered lubricant has a low vaporization rate and is stable in vacuum or in inert atmosphere to over 2400°F. Pressures as high as 400,000 lb/in.² can be handled. Average particle size is 1.5 μ .—J.S. (Bemol Inc., Dept. S469, 131 State St., Boston 9, Mass.)

Triaxial testing apparatus for large specimens is designed to accommodate soil, gravel, and aggregate sample specimens up to 15 inches in diameter and 32 inches long. The large specimen size allows testing of samples that contain aggregates measuring up to 3 inches in diameter. Total axial load capacity of the triaxial device is 78,000 pounds. Lateral pressures up to 400 lb/in.² may be applied through the machine's hydraulic system. Design features include a direct electronic digital load readout and a test chamber head that can be lifted by the hydraulic

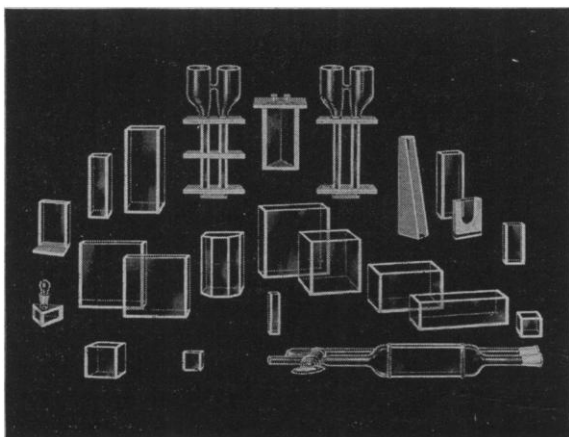
ram on its return to normal position after a test. The entire ram assembly and head can then be rotated out of the way by means of a roller arrangement for access to the specimen.—J.S. (Soiltest, Inc., Dept. S497, 4711 W. North Ave., Chicago 39, Ill.)

Notes on Systems Application of Regulated Power Supplies is the title of a 40-page reference handbook intended to assist the design engineer in making optimum use of the versatility of available power supplies. Information includes: how to select a power supply; power supply classifications; glossary of power-supply terms; and theoretical discussions of applications of a voltage correcting system. Included also are sections on master-slave connections for complementary tracking, series and parallel tracking, compliance voltage extension, and parallel operation. Several pages are devoted to methods of controlling dissipation, programming of power supplies, and derating. The handbook should be requested on company letterhead.—J.S. (Kepco, Inc., Dept. S498, 131-38 Sanford Ave., Flushing 52, N.Y.)

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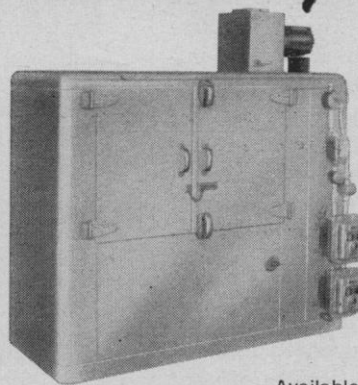
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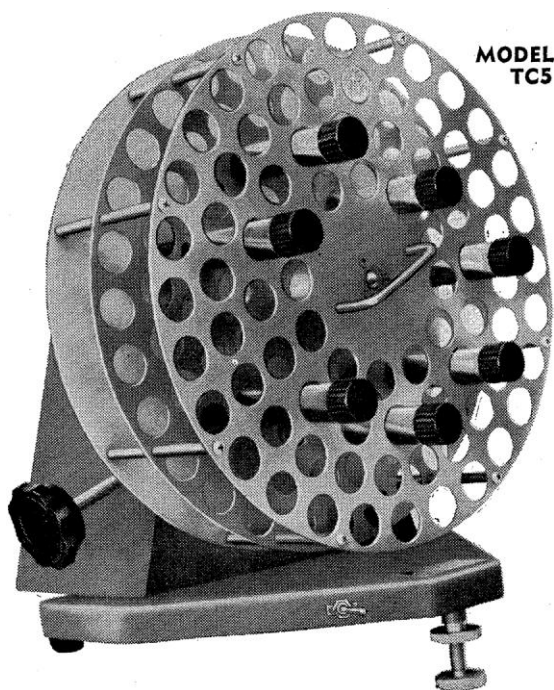
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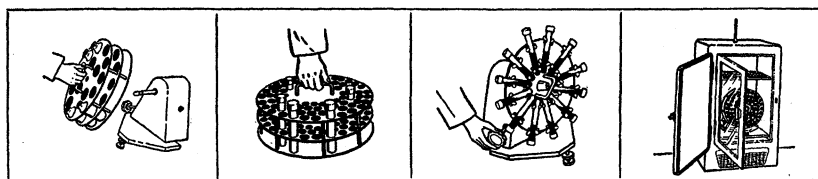
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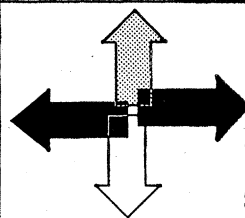
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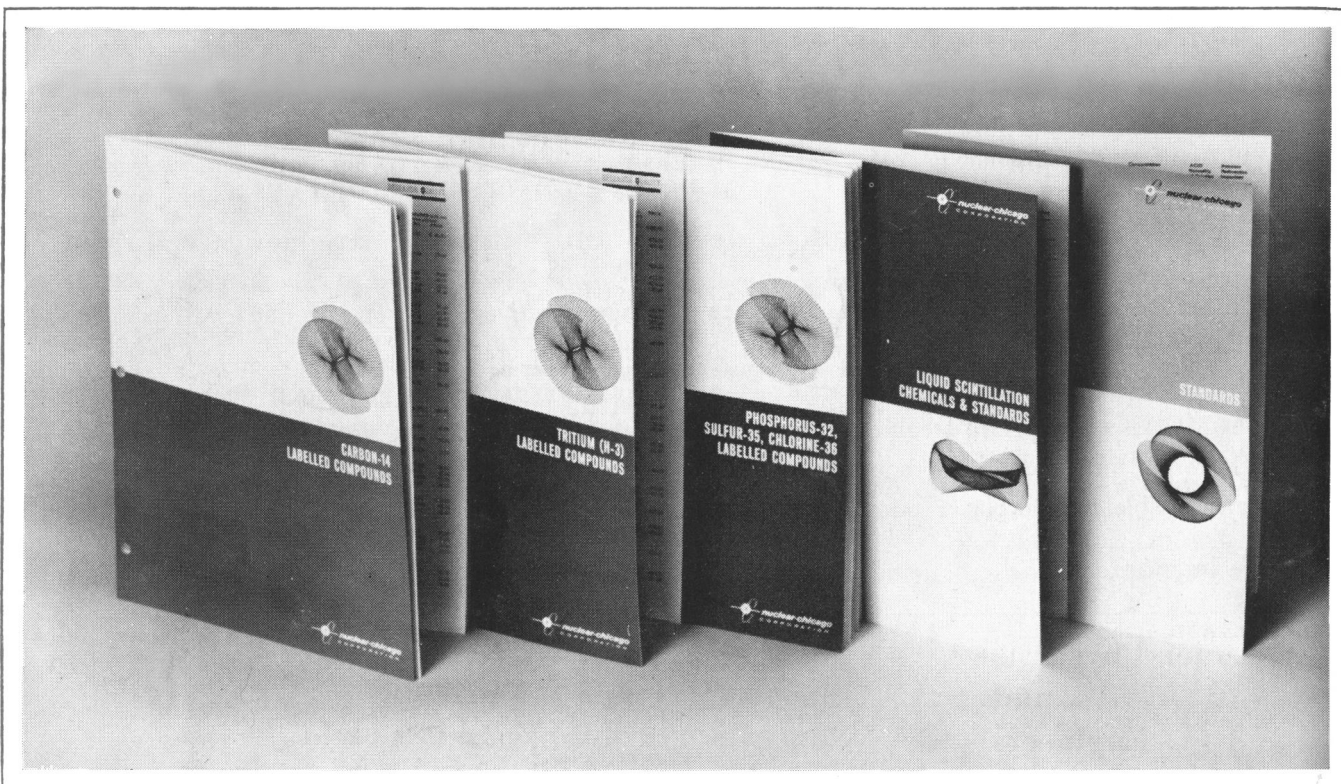
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