New York, N.Y. (D. W. Fawcett, Dept. of Anatomy, Cornell Univ. Medical College, 1300 York Ave., New York 21.)

13-15. American Public Health Assoc. (Southern Branch), Memphis, Tenn. (L. M. Groves, Shelby County Health Dept., Memphis.)

15-16. Eastern Psychological Assoc., Atlantic City, N.J. (C. H. Rush, Standard Oil Co. (N.J.), Rockefeller Plaza, New

York, N.Y.)

18-21. American Astronomical Soc.,

Hvnek, Smithsonian Pittsburgh, Pa. (J. A. Hynek, Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge 38, Mass.)

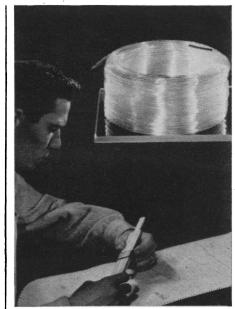
18-22. Association of American Geographers, Dallas, Tex. (A. C. Gerlach, Map Div., Library of Congress, Washington

18-22. European Soc. of Opthalmology, 1st cong., Athens, Greece. (P. Velissar-opoulis, c/o Opthalmology Clinic, Faculty of Medicine, 26, rue de l'Université, Athens, Greece.)

19-21. Active Networks and Feedback Systems, 10th intern. symp., New York, N.Y. (H. J. Carlin, Microwave Research Inst., Polytechnic Inst. of Brooklyn, 55 Johnson St., Brooklyn 1, N.Y.)

19-21. American Soc. of Lubrication Engineers, annual, Cincinnati, Ohio. (C. L. Willey, ASLE, 84 E. Randolph St., Chicago, Ill.)

(See issue of 15 January for comprehensive list)



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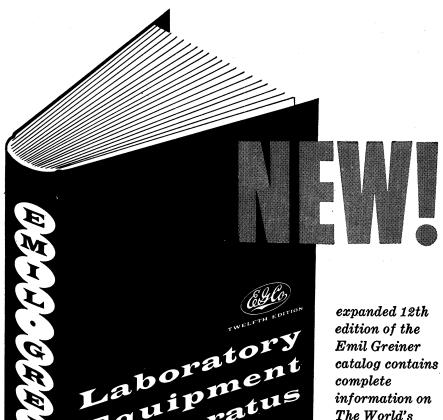
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Editor: Stephen Rothman 199

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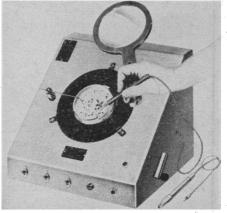
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New Products

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither Science nor the writer assumes responsibility for the accuracy of the information. A coupon for use in making inquiries concerning the items listed is included in the post card insert.

- ELECTRON ACCELERATOR for irradiation furnishes 0.5 Mev electrons with 7.5 kw output at constant potential. Scan widths up to 36 in. are available. High voltage is produced by a cascaded rectifier driven in parallel from an RF oscillator at 300 kcy/sec. Dimensions are 3 ft in diameter by 6 ft long, exclusive of beam extension system. (Radiation Dynamics, Inc., Dept. Sci289, Westbury, L.I., N.Y.)
- OSCILLATOR, model 350, can be programmed to generate up to 11 frequencies in any desired sequence. Accuracy is said to be ±0.01 percent of generated frequency over the range 100 cy to 100 kcy/sec. Operating modes include automatic stepping, push-button stepping, and manual setting by means of six decimal switches. (Digital Instrument Laboratories, Dept. Sci290, East Los Angeles, Calif.)
- WIND VANE measures both vertical and horizontal wind components. Maximum overshoot is 15 percent. A companion recorder provides a permanent record of the instrument output. (Gelman Instrument Co., Dept. Sci306, Chelsea, Mich.)
- BACTERIAL COLONY COUNTER actuates a counting mechanism on contact of a probe with an agar medium and simultaneously makes an identifying puncture. A self-actuating marking pen is used where puncturing is not feasible. The latter leaves a small, easily removable ink spot on the glass or plastic plate. A fixed pushbutton actuator and a hand-held pushbutton are also provided. Count is registered on a four-digit electromagnetic counter. (New Brunswick Scientific Co., Dept. Sci278, New Brunswick, N.J.)



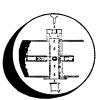
- AIR-PARTICLE SAMPLER incorporates a nine-stage turbine type air mover designed for continuous operation. A metering system indicates on a resettable counter the total volume of air that has passed through the filter during the sampling period. Diameter of the filter holder is 2 in. Other sizes can be furnished. Collection rate is 16,800 lit./hr. Operation is on 115 volts a-c. (Nems Clark Division of Vitro Corporation of America, Dept. Sci298, 919 Jesup-Blair Dr., Silver Spring, Md.)
- BATTERY VOLTAGE REGULATOR is a transistorized magnetic-amplifier device intended to overcome problems of voltage decay in battery supply sources. The device is said to maintain output voltage ±2 percent with battery supply voltage drop of 20 to 30 percent. Efficiency is said to be 80 to 85 percent. Operating temperature range is -20° to +165°F. (Gulton Industries, Inc., Dept. Sci297, 212 Durham Ave., Metuchen, N.J.)
- GRAPHIC PERIODIC ELEMENT SELECTOR illustrates electron structure and furnishes information on atomic number, atomic weight, valence, melting and boiling points, density, abundance, electronegativity, oxidation potential, covalent bond types, ionization potential,

- isotopes, ionic and covalent radius, and heat of formation. A slide-rule arrangement determines ionic character in chemical bonds. (Graphic Calculator Co., Dept. Sci302, 633 S. Plymouth Ct., Chicago 5, Ill.)
- TEST TUBE INCUBATOR of waterless design provides controlled temperature at $37^{\circ} \pm 0.5^{\circ}$ C. The incubator accommodates 40 test tubes from 10 to 13 mm in diameter. Up to 2 ml can be incubated in each tube. Operating temperature is reached in 30 min. Dimensions are 9.5 by 7 by 3 in. Operation is on 115 volts a-c. (Clay-Adams, Inc., Dept. Sci304, 141 E. 25 St., New York 10, N.Y.)
- ORGANIC-CARBON DETECTOR is a portable, self-contained instrument that permits analysis of total organically bonded carbon in atmosphere or gases. Sensitivity is said to be 10⁻⁷ for such compounds as hydrocarbons, aldehydes, ketones, alcohols, and amines. Range is adjustable from 0 to 0.0001 percent to 0 to 10 percent. The instrument operates by feeding the metered sample into a hydrogen flame that ionizes combustibles to effect changes in current flow proportional to total carbon content. Response time is less than 2 sec. (Perkin-Elmer Corp., Dept. Sci317, Norwalk, Conn.)
- IONIZATION CHAMBERS are spherical in shape with elimination of dead space. Saturation is said to be obtained at 90 volts or less for all ordinary currents. Electrode insulators are guarded. An 18-mm spherical joint and valve permit connection to the chamber. A slide chamber of 600-ml capacity holds two sample planchets of diameter 21/4 in. or less. (Applied Physics Corp., Dept. Sci309, 2724 South Peck Rd., Monrovia, Calif.)
- ROUGHNESS METER PROBE extends measurement range of internal diameters down to 1/8 in. A 1/8-in. hole can be penetrated to a depth of ½ in., a 1/4-in. hole to any desired depth. The pickup will measure to within 0.25 in. of a shoulder. Stylus pressure is 1 gm. (Cleveland Instrument Co., Dept. Sci296, Cleveland 3, Ohio)
- SCANNING VACUUM SPECTROMETER employs a grating with 40- by 40-mm ruled area in a Seya-Namioka mounting. Effective aperture ratio is approximately f/8.7 when the full grating aperture is used. The spectrometer is equipped with a 3-in. diffusion pump for evacuating the main chamber. A valve attachment available as an accesory permits the camera to be isolated for loading. Scanning may be motorized

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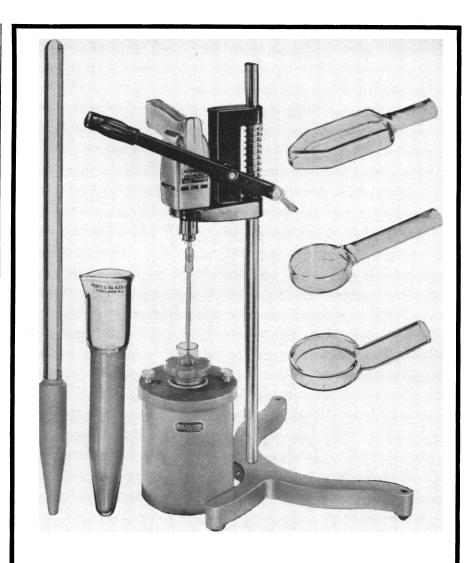
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or manual. Total wavelength range extends to 10,000 A. Entrance and exit slits are bilaterally adjustable. With specially selected gratings, band pass is better than 1 A in the 0-to-1500-A range and better than 2 A up to 3000 A. (Jarrell-Ash Co., Dept. Sci311, 26 Farwell St., Newtonville 60, Mass.)

- THERMISTOR PROBES for surface temperature measurements are spring mounted to provide continuous pressure of 1 to 1.5 lb. Glass-tipped and stainlesssteel probes are available. Temperature ranges between -100° and +290°C can be provided. (Atkins Technical, Inc., Dept. Sci301, 1276 W. Third St., Cleveland 13, Ohio)
- HIGH-PRESSURE GAS-DRYING SYSTEM comprises a dryer, a hygrometer, and a diaphragm-type compressor. Dew points as low as -100°F are produced. The drier uses "Molecular-Sieve" and is completely automatic in operation. (American Instrument Co., Dept. Sci-307, 8030 Georgia Ave., Silver Spring,
- DIGITAL PLOTTER uses two digital-toanalog converters, one each for x and ysignals, and two servo systems that position a printing mechanism according to binary-coded x and y input signals. Charts, 81/2 by 11 in. and 11 by 16 in., are held by a vacuum system. Slewing speed is 5 in./sec, and accuracy is said to be ± 0.1 percent of full scale. Plotting rate for 0.1 percent accuracy is 1.6 points per second, zero to full scale. Up to six identification symbols are provided on the print wheel. (Gerber Scientific Instrument Co., Dept. Sci313, 89 Spruce St., Hanford, Conn.)
- OPERATIONS RECORDER provides six channels of on-off data and one analog channel. Accuracy of the latter is ± 2.5 percent. Frequency response is 0 to 600 cy/sec for the analog channels. The recorder operates only upon change of the incoming signal with chart motion response 19 msec for 63 percent of operating speed. Time of record is recorded to the nearest minute. (Hamilton Watch Co., Hathaway Instrument Div., Dept. Sci314, 5800 East Jewell Ave., Denver 22, Colo.)
- VOLTAGE DIVIDER for alternating current is a six-decade resistive device said to be accurate to ± 0.0002 percent for frequencies from d-c to 4000 cy/sec over the temperature range 20° to 30°C. Accuracy at 10 kcy/sec is said to be decreased to ±0.0005 percent. Over-all resistance is 10,000 ohm and resolution is 0.0001 percent. Circuit design permits grounding either the low end or the output arm of the divider. (Julie Research Corp., Inc., Dept. Sci316, 556 W. 168 St., New York 32, N.Y.)

- CENTRIFUGE, for calibration of vibration measuring instruments, generates sinusoidal accelerations at frequencies up to 20 cy/sec. The machine consists of a small satellite table mounted on a large table so arranged that the angular velocity of the small turntable is zero while it orbits about the main spindle of the machine. Radial separation of the two spindles is adjustable up to 12 in. Speed indication is provided. Slip rings provide electrical connections to rotating objects. (Schaevitz Machine Works, Dept. Sci315, Pennsauken, N.J.)
- ENCAPSULATING COMPOUND is an epoxy resin suitable for dip-coating of small electrical components. The material is thixotropic so that dripping does not occur on withdrawal at cure temperatures as high as 160°C. (Houghton Laboratories Inc., Dept. Sci299, Olean, N.Y.)
- RADIOFREQUENCY VOLTMETER is said to have accuracy of ±1 percent or better from d-c to 100 Mcy/sec. The instrument is a thermocouple type with vacuum theromocouple and multiplying resistor in a shielded case separate from the indicating meter. Construction is of coaxial-cavity type with coaxial input connector. (Rawson Electrical Instrument Co., Dept. Sci312, Cambridge, Mass.)
- REFRACTOMETER makes a continuous comparison between a reference liquid and a flowing sample. Changes in concentration are indicated or recorded. The instrument uses null balance with servomechanism restoration of balance. The stainless-steel sample cell is contained in a water bath for temperature constancy. An external heat exchanger may also be used. (Hilger & Watts, Ltd., Dept. Sci310, 98 St. Pancras Way, Camden Rd., London N.W.1, England)
- INDUCTANCE BRIDGE is designed for measurement of series or parallel components of two-terminal grounded inductors at audio frequencies. Inductance range extends to 1111 hy and minimum indication is 0.001 µh. Directreading accuracy at frequencies up to 1 kcy/sec is said to be ±0.1 percent, and comparison of two inductors of nearly the same nominal value to be possible to ±0.01 percent. The instrument is usable to 10 kcy/sec (higher with some reduction in accuracy). (General Radio Co., Dept. Sci318, West Concord, Mass.)
- ANALOG COMPUTER is a ten-amplifier instrument weighing 23 lb. For solving more complex problems, up to three computers can be slaved together. Each computer includes, in addition to amplifiers, a null voltmeter, five coefficient



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■ RECORDING VACUUM BALANCE is a standard symmetrical beam balance mounted on a heavy aluminum base plate and covered by a bell jar. A set of switch weights operated by cams is suspended from the right stirrup. Beam deflection is detected by a variable inductance transducer in a bridge circuit and recorded. Whenever the recorder pen approaches either edge of the recorder chart, a weight is automatically

added or subtracted. Automatic ranges, equivalent to 40 chart widths, are 400 and 4000 mg, respectively, in two models. Corresponding weighing accuracies are ±0.03 and ±0.2 mg, respectively. A two-pen recorder permits simultaneous temperature recording. (William Ainsworth and Sons, Inc., Dept. Sci327, 2151 Lawrence St., Denver, Colo.)

- POLAROGRAPH RANGE EXTENDER is said to permit measurements at lower concentrations. The accessory provides measuring resistors of higher value for increased current sensitivity, and supplies to the measuring system a suppressing voltage equal and opposite in sense to the capacitance current. The latter is applied at a linear rate of change by a synchronous-motor-driven bridge turning simultaneously with the polarizing bridge. (E. H. Sargent & Co., Dept. Sci300, 4647 W. Foster Ave., Chicago 30, Ill.)
- NOISE MEASURING EQUIPMENT is a narrow-band radio-frequency spectrum analyzer for spurious AM and FM modulations at close to carrier frequency. Carrier-frequency ranges from 5.4 to 14.1 kMcy/sec can be supplied. Spectrum analyzer range is 500 cy to 90 kcy/sec. Resolution is 70 cy or 1 kcy/sec. AM sideband power in a 70 cy/sec band width can be measured down to −135 db relative to total signal power level with ±2 db accuracy. (Ferranti Electric Co., Dept. Sci324, 95 Madison Ave., Hempstead, N.Y.)
- MAGNETIC LIMIT SWITCH is triggered by the proximity of a permanent magnet. Trigger distance can be set in the range 0.02 to 0.2 in. Reverse motion reverses the switch action. The point at which action takes place is said to be reproducible within ±0.001 in, and response time to be less than 1 msec. Amplifier units permit normally off or normally on action. Output signal is 50 μa in the "off" condition and 5 watts at 25 volts d-c in the "on" condition. (Consolidated Controls Corp., Dept. Sci325, Bethel, Conn.)
- ELECTROMECHANICAL POLISHING AP-PARATUS combines electrolytic and mechanical techniques to polish metals such as tungsten, rhenium, molybdenum, and their alloys. Voltage is applied to the specimen while it is slowly abraded on a polishing wheel covered with electrolyte slurry. (William J. Hacker & Co., Inc., Dept. Sci328, West Caldwell, N.J.)
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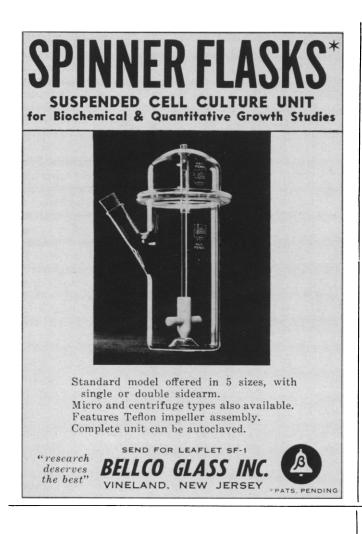
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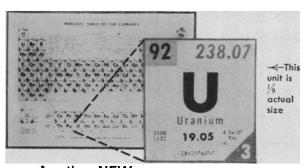
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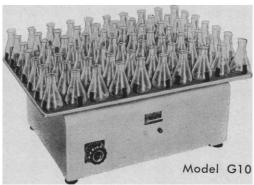


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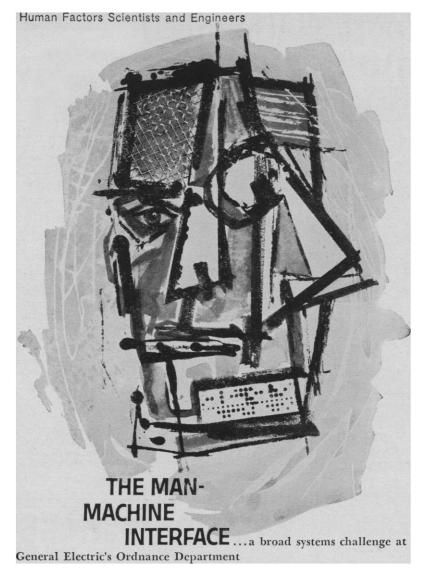
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- PULSED NEUTRON GENERATOR designed to be low in cost consists of a high-voltage transformer, a deuterium neutron target and acceleration tube, and a remote-control electronic rack. The equipment is offered with a choice of mechanical vacuum system or diffusion-pump vacuum system. Yields in excess of 10^s neutrons per second are said to be obtainable in the equipment if a mercury diffusion pump is used. (Atomic Laboratories, Inc., Dept. Sci329, 3086 Claremont Ave., Berkeley, Calif.)
- FUME HOOD for demonstrations provides all-round visibility by means of a transparent enclosure over the top of the table. The table carries its own sink, water, gas, electrical outlets, and fume exhaust system; it is portable. (Laboratory Furniture Co., Inc., Dept. Sci330, Old Country Rd., Mineola, N.Y.)
- FLAME PHOTOMETER for sodium and potassium analysis is automatic in operation. A sample plate is loaded with 40 samples which are then automatically diluted, purified by dialysis, and pumped into a flame unit. Results are recorded continuously on a moving chart. The recorder comprises a balanced-ratio system in which unknown and standard samples are measured against a fixed reference. Sodium and potassium analysis can be run simultaneously or individually. (Technicon Instruments Corp., Dept. Sci331, Chauncey, N.Y.)

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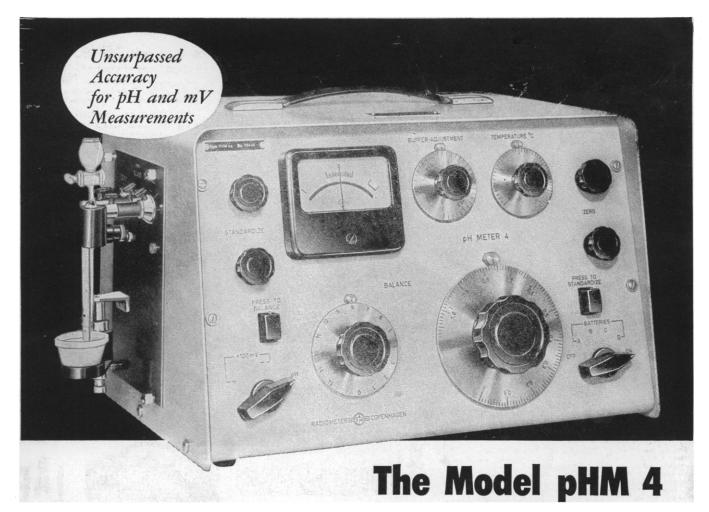
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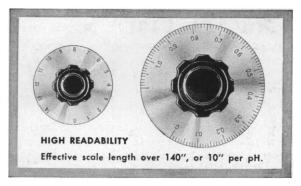
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*The applications described in these bulletins are, No. 1: How to Use Radioisotopic Yield Determination in Quantitative Analysis. No. 2: How to Use Radioisotopic Analysis for Mixing Evaluation. No. 3: How to Use the Radioisotopic Derivative Method in Quantitative Analysis. No. 4: How to Use Radioactivity in Paper Chromatography. No. 5: How to Evaluate an Analytical Method with the Aid of Radioisotopes. No. 6: How to Make Quantitative Determinations by Radiometric Analysis.