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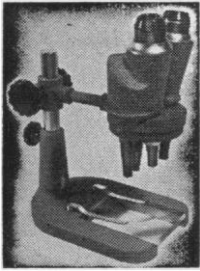
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## EQUIPMENT NEWS

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).

■ QUADRUPLE-BEAM OSCILLOSCOPE is linear to  $\pm 0.5$  db from direct current to 100 kcy/sec. Input may be either differential or single-ended. Features include automatic amplitude calibration, four-step sequence timer, crystal-controlled timing pulse, and provision for synchronization and control of recording cameras. (Electronic Tube Corp., Dept. S462)

■ LABORATORY RELAY is transistorized to improve reliability. Input of 12  $\mu$ a will actuate the relay. A noninductive load of 4 amp is controlled with a guaranteed lifetime of a million contacts. Up to 10 amp can be handled for short periods. Any combination of normally open or normally closed input circuits and normally on or normally off output is provided. No warm-up period is required. (Fisher Scientific Co., Dept. S463)

■ AMPLIFIER is designed to furnish constant voltage output at frequencies ranging from 40 to 1000 cy/sec. for operation of synchronous motors requiring up to 150 va at 115 v. Input may be provided by a signal generator, a tuning-fork, or a crystal-controlled oscillator. Input impedance is 10,000 ohm; gain is 56 db; and signal-to-noise ratio 54 db. (Amplifier Corporation of America, Dept. S466)

■ BLOOD-PRESSURE RECORDER employs the usual measurement procedure followed by the physician, but does so automatically. Measurements are made at intervals of from 30 sec to 1 hour. A self-contained source of air inflates and deflates the sphygmomanometer arm cuff periodically. A microphone and amplifier respond to the arterial sounds when cuff pressure corresponds to systolic and diastolic values. The instrument can be furnished with a settable alarm. (The Colson Corp., Dept. S457)

■ PULSE-HEIGHT ANALYZER can store more than 1 million counts in each of 100 channels. Linearity is better than 0.2 percent. Pulse amplitude discrimination is accomplished by means of amplitude-to-time conversion with crystal-oscillator gating. Magnetic-core memory is used for storage of counts. Counting loss, resulting from conversion to time, is kept to a minimum by providing temporary

2nd printing July 1957

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storage for a second pulse while the first pulse is being analyzed. Data are printed out on ten-column adding machine tape. (Pacific Electro-Nuclear Co., Dept. S489)

■ **CRYSTALLINE MATERIALS** made from glass provide a useful combination of properties. Specific gravity is less than that of aluminum; the materials have a strength-to-weight ratio almost equal to that of aluminum alloy. High-frequency and high-temperature electric properties are excellent. The materials, trade named Pyroceram, are formed by methods used for glass. (Corning Glass Works, Dept. S485)

■ **SPECTROPHOTOMETER**, a single-wavelength, narrow-band instrument, is designed to measure absorbance and optical density changes at 350 m $\mu$ . The instrument, called the "Coenzometer," functions to measure transaminase, lactic dehydrogenase, blood alcohol, turbidity, and pyridine nucleotides for diagnosis of cardiac or hepatic disorder. The instrument operates on standard electric power. (Macalaster Bicknell Co., Dept. S487)

■ **ULTRASONIC GENERATOR** for therapeutic applications features a transducer incorporating a 10-cm<sup>2</sup> quartz crystal. Total dosage intensity is 30 w, with no energy being reflected back into the hand of the operator. The unit complies with all FCC requirements on minimum conducted line and radiation interference. (Dakon Tool and Machine Co., Inc., Dept. S492)

■ **AUTOMATIC CHART READER** moves a recorder chart at a uniform rate, senses the position of the inked trace, and produces an output proportional to the ordinate value of the trace. Output is presented as voltage, shaft-rotation, pulse-width-modulated-carrier, and also in digital form. Accuracy is  $\pm 0.1$  percent of full scale. (Geotechnical Corp., Dept. S506)

■ **ELECTRONIC GALVANOMETER** is a combination of d-c null detector, linear deflection indicator, microvoltmeter, microammeter, and low-level d-c amplifier. Its circuit is fully transistorized and chopper stabilized. Seven decade ranges cover 10  $\mu$ v to 10 v or 0.001  $\mu$ a to 1 ma full scale. The instrument is insensitive to shock, vibration, or stray fields. Sensitivity as a galvanometer is  $2 \times 10^{-11}$  amp per division. (Kin-Tel, Dept. S491)

■ **SPECTRUM ANALYZER** for the range 450 to 550 kcy/sec has resolution ranges from 3.2 kcy/sec to 10 cy/sec. Signals up to 1000 Mcy/sec can be observed by means of an external signal generator and an internal aperiodic mixer which translate



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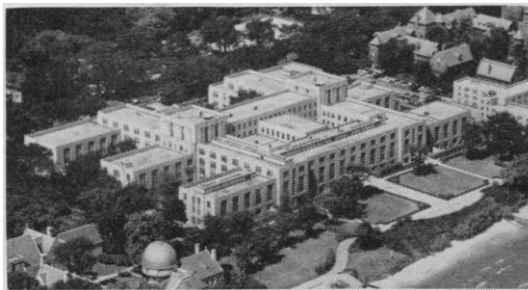
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the spectrum segment to be analyzed to the input range of the instrument. Scan rate is adjustable in steps of 30, 5, 1, and 0.1 cy/sec. (Panoramic Radio Products, Inc., Dept. S391)

■ **STAINLESS STEEL** containing 1 percent boron is available in plate, sheet, strip, and bars. The boron content contributes thermal-neutron absorption properties. The material is workable hot and cold, and is weldable and machinable. (Superior Steel Corp., Dept. S469)

■ **NASOMETER** measures the degree of patency of the nasal respiratory passages. The instrument is actuated by the patient, who exhales through each nasal passage into tubes. Two pens on a strip chart respond to the flow of air, and, if there are no obstructions, draw a symmetrical pattern. (Royson Engineering, Dept. S473)

■ **PHASEMETER** utilizing a passive system is available in a single frequency model between 60 cy/sec and 20 kcy/sec and in a three-frequency unit for any three selected frequencies in the same range. Continuous measurement of phase angle from 0 to 360 deg may be obtained. Linearity error is less than  $\pm 1/2^\circ$ . (Statham Development Corp., Dept. S507)

■ **CAPACITORS** are said to be stable to  $\pm 0.1$  percent over a temperature range from  $-20^\circ$  to  $+150^\circ\text{F}$ . Insulation resistance is 1000 Mohm times capacitance in microfarads at  $250^\circ\text{F}$ . Units are hermetically sealed in nonmagnetic tubes with compression glass seals. They are available in 300-, 600-, and 1000-v ratings. (Electron Products Co., Dept. S467)

■ **PUMP** uses the principle of moving steel fingers, in a wavelike motion over flexible tubing, to pump liquids, gases, and slurries. Tubes of inside diameter from  $1/32$  to  $1/4$  in. are accommodated. Pumping rate is variable from 0.1 to 250 ml/min. (Sigmamotor, Inc., Dept. S475)

■ **TRANSISTOR CIRCUIT SIMULATOR** eliminates "breadboard" layout by simulating complete amplifier stages. Everything required for *R-C* amplifier circuits is built into the instruments, including 2- and 20- $\mu\text{f}$  direct coupling capacitors. Circuit resistances are variable over a wide range. Battery voltage supply for separate bias and load provides 1.5, 3, 4.5, and 6 v. (Sprague Products Co., Dept. S490)

■ **HYDRAULIC VIBRATION EXCITER** is capable of producing sinusoidal motion with a maximum force of 60,000 lb and with an available stroke of 4 in. The

exciter consists of a driving head, hydraulic accumulator, high-pressure hydraulic pump, electronically controlled servo valve, and electronic control system. (MB Manufacturing Co., Dept. S470)

■ **AUTOMATIC BLOOD CELL COUNTER** bases its operation on differences in electric conductivity between blood cells and common diluents. The sample being counted passes through a 0.1-mm orifice. An individual cell, in passing through the orifice, raises the electric resistance of the orifice contents. Resulting voltage pulses, which are proportional to cell size, are displayed on an oscilloscope and counted by a pulse-height discriminator. Counting stops automatically when 0.5 ml has passed through the orifice. Counting time is approximately 25 sec. (Coulter Electronics, Dept. S454)

■ **PLATINUM RESISTANCE THERMOMETERS** for temperature sensing in noncorrosive liquids or gases achieve rapid response by providing almost immediate contact between the environment and the exposed sensing element. The platinum winding is protected by a stainless-steel cage. Thermal response time is less than 2.5 sec in air and less than 50 msec in water. Range of operation is from  $-320^\circ$  to  $+750^\circ\text{F}$  with accuracy better than  $\pm 1$  percent of full scale and repeatability  $\pm 0.2$  percent. Up to 5 v can be delivered without additional amplification. (Trans-Sonics Inc., Dept. S484)

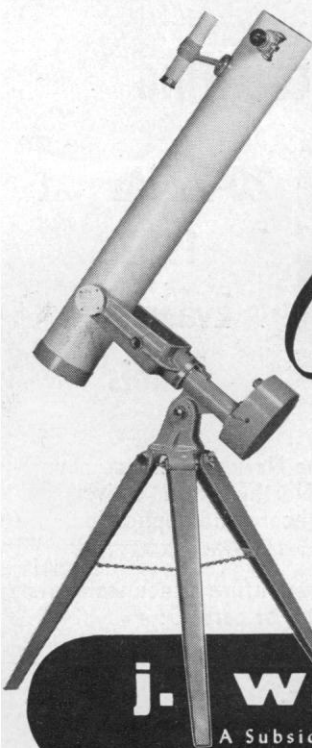
■ **AIR SAMPLING DEVICE** is based on a microventuri principle in which Freon propellant is ejected through a jet nozzle to provide pumping action. The suction end of the aspirator is connected to a standard glass impinger assembly for other than solid particle counts. For dust sampling, a standard Millipore filter attachment is substituted for the glass impinger. (Union Industrial Equipment Corp., Dept. S472)

■ **OHMMETER** is designed to measure low resistance. Readings are obtained from 0.1 to 25 ohm, in two ranges, with accuracy of  $\pm 3$  percent of full scale. Maximum circuit current is 5 ma. One 1.5-v battery furnishes power to the meter. (Simpson Electric Co., Dept. S483)

■ **PORTABLE RECORDING MILLIVOLTMETER** is designed for electrolysis surveys. Movement sensitivities of either 2000 or 10,000 ohm/v can be furnished. Record is made on an 8-in. diameter, carbon-coated chart. The writing stylus is vibrator-actuated so that drag is avoided. The recorder is weatherproof and can be left unattended for up to 1 week. (Bristol Co., Dept. S509)

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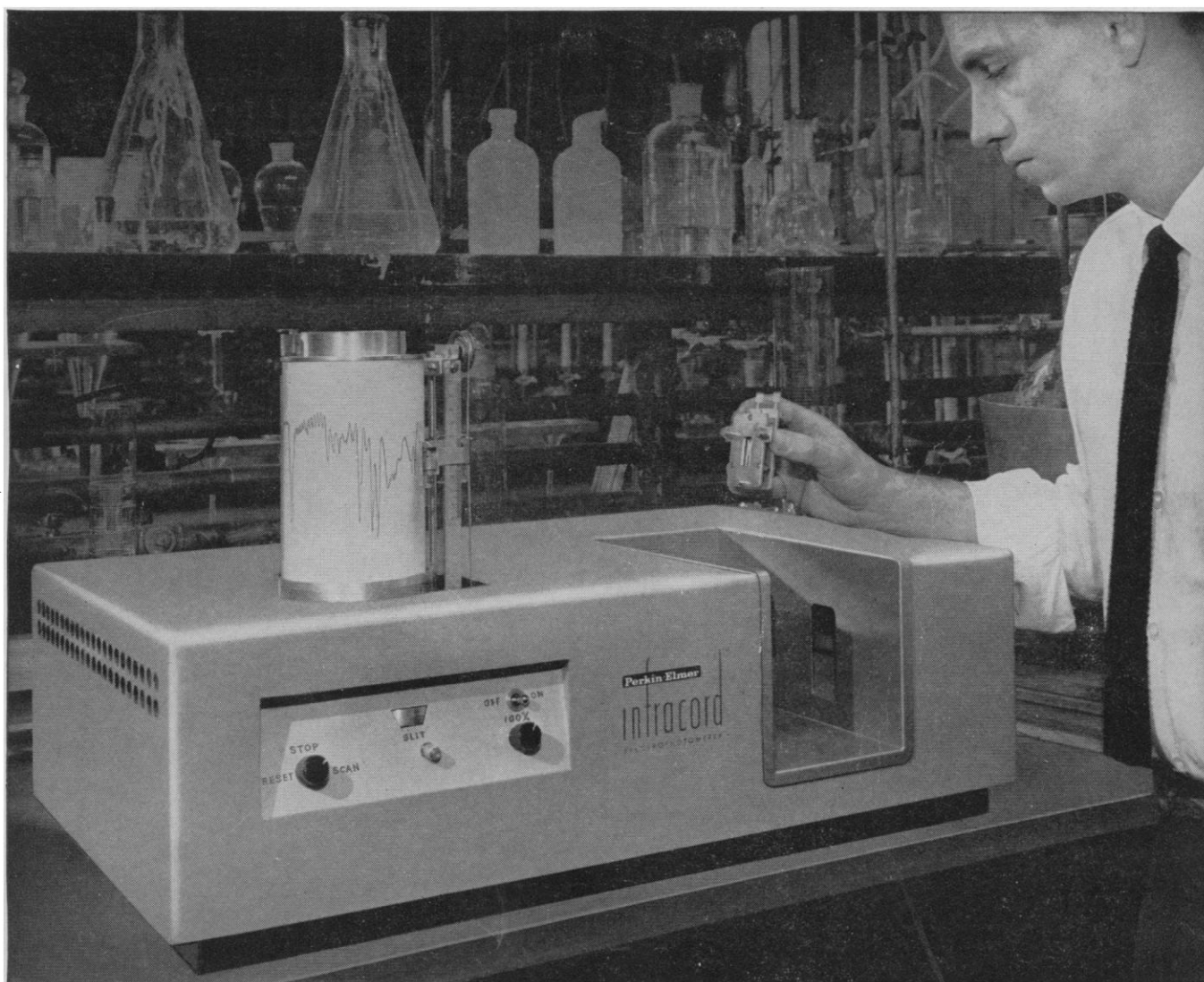
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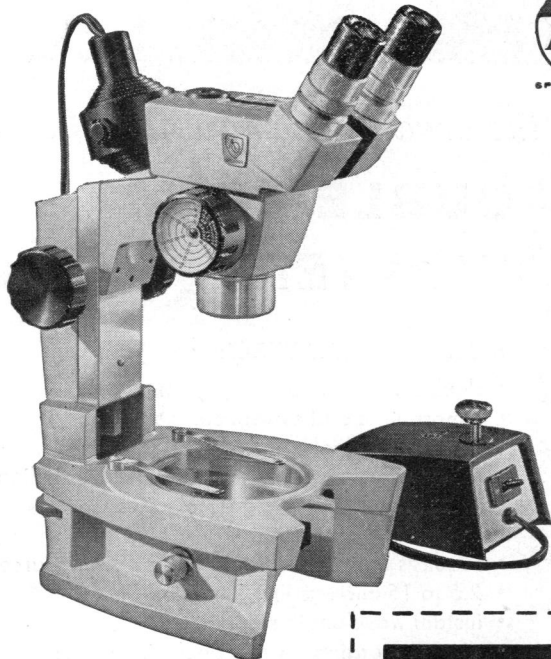
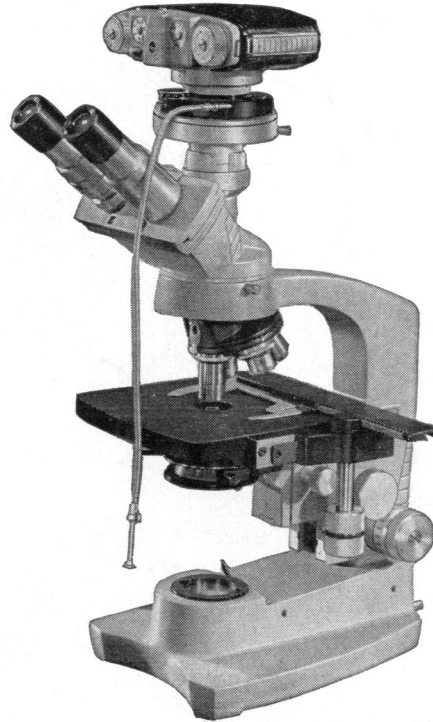
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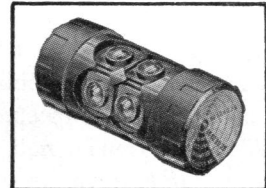
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