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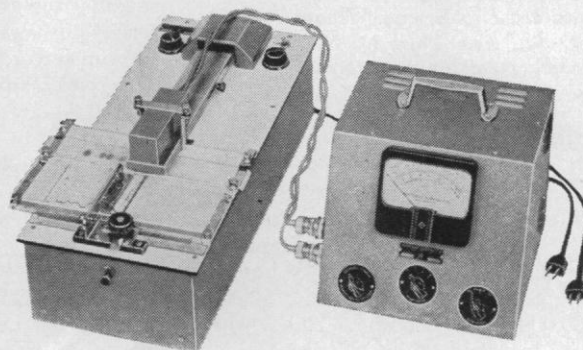
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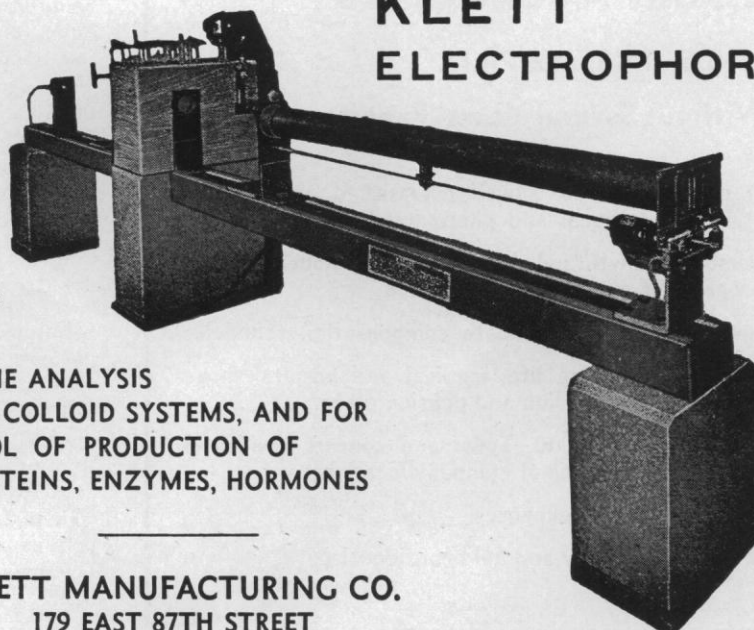
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EQUIPMENT NEWS

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).

■ **GAMMA REFERENCE STANDARDS** are available in the form of Co^{57} , Ba^{133} , Cs^{137} , Mn^{54} , Na^{22} , and Co^{60} sources. Each source is sealed in a cylindrical Lucite sample holder 5 in. long and $\frac{5}{8}$ in. in diameter. The quantity of isotope has been adjusted to yield about 50,000 to 100,000 count/min above 20 kev with activity less than 0.1 μC . (Baird-Atomic Inc., Dept. S513)

■ **WIND-RECORDING SYSTEM** incorporates a drag-free transducer based on the principle of light-beam chopping. Wind direction is sensed by a low-inertia potentiometer. Accuracy for wind speed is ± 4 percent of full scale and for wind direction, ± 3 percent. Switching is provided among four scales with ranges from 6 to 60 mi/hr. (Beckman and Whitley Inc., Dept. S525)

■ **GAS-DENSITY BALANCE** measures the buoyancy effect of a gas in producing a rotational moment in a small dumbbell that is supported on a horizontal quartz fiber. The dumbbell is restored to its null position by application of electrostatic force. The magnitude of the balancing potential required is proportional to the density of the sample and is used to operate a meter or recorder. Ranges of 0.05 total span relative to air anywhere from 0 to 5.00 are available. Sensitivity is $\pm \frac{1}{2}$ percent of full scale, accuracy $\pm 1\frac{1}{2}$ percent of full scale. Response of 95 percent is obtained in 1 min. Output is 0 to 5 mv. (Arnold O. Beckman, Inc., Dept. S560)

■ **TIME-TO-PULSE-HEIGHT CONVERTER** is designed for measurement of time intervals in the range 250 μsec to 1 μsec . The instrument requires that the time interval of interest be defined by an initial and a final pulse. The output is a pulse whose amplitude is proportional, within ± 1 percent, to the time interval being measured. Readout may be accomplished either by a multichannel pulse-height analyzer or by an oscilloscope. Resolution times of the order of 40 μsec are said to have been achieved by the instrument. (El Dorado Electronics Co., Dept. S512)

■ **PROGRAMMER** for six- and eight-channel oscillograph recording systems produces the following automatic sequence for analog computer readout: recorder is turned on; calibration signal voltages are fed to all channels; d-c levels of computer are read; computer output is recorded for predetermined chart length or as controlled by computer; recorder is turned off and programmer is reset. (Sanborn Co., Dept. S502)

■ **NUCLEAR-POWERED ELECTRIC TIMER** has a shelf and use life of more than 25 years. One model of the timer, $2\frac{1}{2}$ in. in diameter by $1\frac{7}{8}$ in. long, provides an electric time delay ranging from several milliseconds to 40 hours with accuracy of ± 3 percent over the temperature range -65° to 165°F . Time delay may be initiated by snap-action switch, pull wire, or electric signal. Power is furnished by a nuclear battery made in current ratings from 50 to 5000 μA and equilibrium voltages in the order of 10,000 v. (Universal Winding Co., Dept. S546)

■ **INFRARED MONOCHROMATOR** is designed to determine the absolute spectral distribution of radiation from airborne targets in the 1.5-to-25- μ region and to determine total radiation. Measurements are recorded on a two-channel recorder. Radiation collected by a Newtonian telescope optical system is reflected alternately to a total radiation detector and a monochromator. Thermistor bolometers are used as detecting elements. (Servo Corporation of America, Dept. S519)

■ **ABRASION TESTER** combines rotary and reciprocating motions to test the durability of materials that are to be subjected to rubbing and twisting types of wear. Both the reciprocating table and the rotating head to which the sample is attached are equipped with ring clamps, which permit substitutions of a variety of surfaces. Provision is made for wet-and-dry tests. (United States Testing Co., Inc., Dept. S520)

■ **MILLIOHMETER**, manufactured by Electronic Instruments Ltd., of England, measures resistance from 20 μohm to 1200 ohm. The instrument is line-operated, using a-c test currents at line frequency. Power dissipated in the test specimen is less than $\frac{1}{8}$ w in the worst case. Accuracy is approximately ± 2 percent of full scale. A calibration circuit permits the accuracy to be checked. (Herman U. Sticht Co., Inc., Dept. S526)

■ **IONIZATION GAGE** measures pressure from 1×10^{-3} to 2×10^{-12} mm-Hg in eight linear ranges. Tube degassing by both resistance and electron bombardment is provided. Degassing current is

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variable, and pressures can be read continuously while the tube is being degassed. Zero drift of the amplifier is less than 2 percent in 24 hr. (Consolidated Electrodynamics Corporation, Dept. S540)

■ **VOLTAGE STANDARD AND NULL METER** can be used to provide reference voltages from 1 to 501 v with standard cell accuracy or to measure voltage over the same range. The instrument's chopper-stabilized circuit compares the output with an internal standard cell. As a power supply, the unit will furnish current up to 20 ma. Stability is ± 0.01 percent, accuracy ± 0.02 percent, line and load regulation 0.002 percent, ripple less than 100 μ v, response time 0.2 msec, and output impedance less than 0.01 ohm. (Kin Tel, Dept. S542)

■ **PORTABLE CARDIOENCEPHALOGRAPH**, intended to aid the anesthesiologist during surgery, measures 13 by 13 by $6\frac{3}{8}$ in. Chart speeds of 2.5 and 25 mm/sec may be interchanged without shifting gears. Calibration of 100 μ v for the electroencephalograph and 1 mv for the electrocardiograph is provided by a Weston cell. The instrument is line-operated and incorporates a regulated power supply. (Gilson Medical Electronics, Dept. S537)

■ **TRANSISTORIZED ELECTROMETER** has eight ranges from 30 mv to 100 v full scale. Gain is 0.05 to 167. Input impedance is 10^{14} ohm. Drift is less than 3 mv/hr after a 1-hour warm-up. Accuracy is within ± 2 percent of full scale. With available accessories, voltages can be measured to 20 kv, currents to 5×10^{-14} amp, and resistance to 10^{16} ohm. Outputs of ± 5 v and ± 1 ma are provided for recorder operation. (Keithley Instruments, Inc., Dept. S570)

■ **MASS SPECTROMETER** operates on the time-of-flight principle of mass separation. Resolving power is sufficient to separate adjacent mass peaks in the 200-atomic-mass unit range. The complete spectrum is analyzed in about 15 μ sec and displayed on a cathode-ray oscilloscope. The analysis is repeated at intervals of 500 μ sec or less. One fixed setting of the instrument covers the entire mass range. Accessories allow the recording of two individually selected mass peaks and their ratio. Also available are devices for counting of individual ions with digital presentation of ratio in the ion-current range from 10^{-15} to less than 10^{-20} amp. The instrument is also suitable for molecular beam work. (Bendix Aviation Corp., Dept. S528)

JOSHUA STERN

National Bureau of Standards

The Beginnings of Embryoni Development

AAAS Symposium Volume No. 48

Published July 1957

Edited by Albert Tyler, California Institute of Technology

R. C. von Borstel, Oak Ridge National Laboratory

Charles B. Metz, The Florida State University

6 x 9 inches, 408 pages, 132 illustrations, references, subject and author index, clothbound

Price \$8.75, AAAS members' prepaid order price \$7.50

A symposium on "Formation and Early Development of the Embryo", held 27 December, 1955, at the Second Atlanta Meeting of the AAAS, served as the basis for this volume. Emphasis was placed on the problems of early development and of the initiation of development. The investigations presented in the various communications cover both descriptive and experimental work on the biological and chemical levels. Apart from their intrinsic interest and the measure of progress that they provide, the specific discoveries and analyses presented serve to exemplify various approaches toward the understanding of the manner in which sperm and egg contrive to produce a new individual.

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Physician with additional training in biochemistry desires full-time salaried position. Experienced in private practice, clinical investigation, and laboratory research; publications; under 40, family; service completed. Box 251, SCIENCE. X

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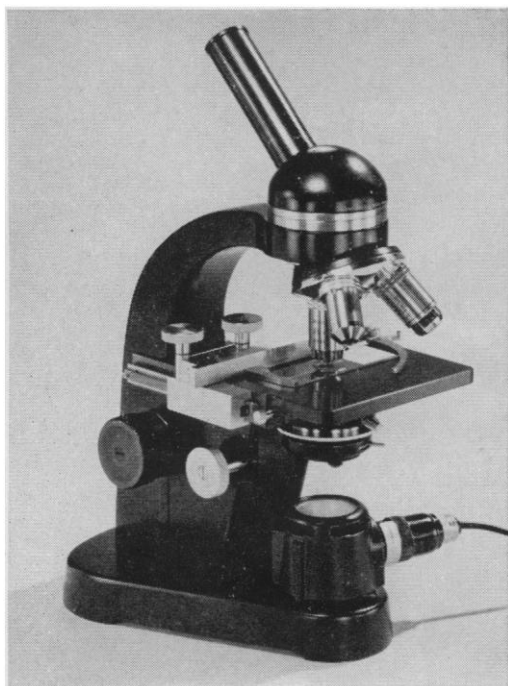
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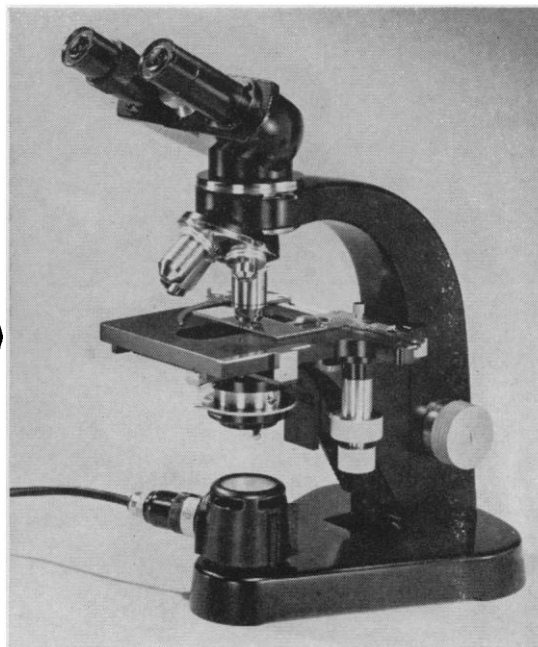
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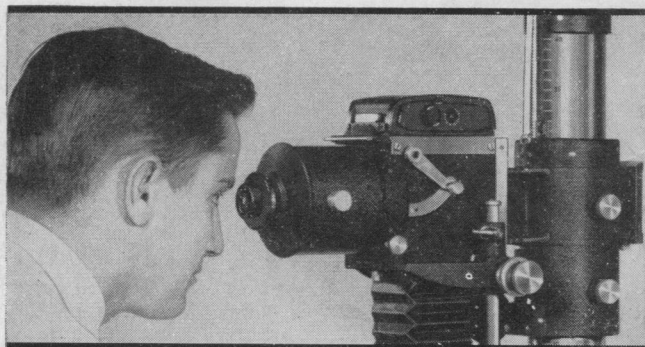
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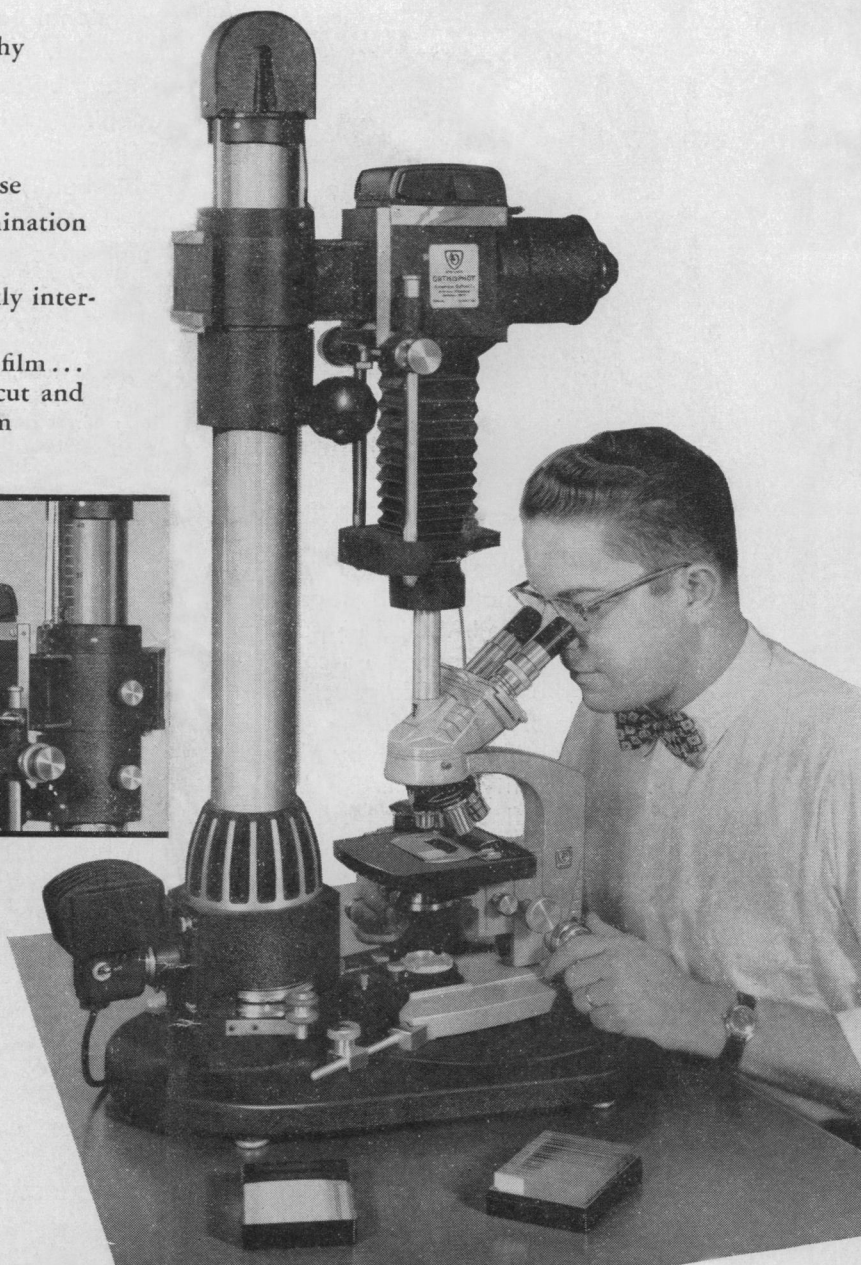
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