# 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).*

■ ALTITUDE TEST CHAMBER includes three modes of application. A combination chamber simulates altitude to 200,000 ft with temperatures from −100° to +400°F. The altitude chamber may be lifted out and operated separately at ambient temperatures. The remaining apparatus operates independently to provide controlled-temperature environments. Sizes from 12 to 36 $ft^3$ are available. (Mantec, Inc., Dept. S746)

■ SINE-WAVE-TO-SQUARE-WAVE CONVERTER utilizes the signal from the driving oscillator to provide operating power for its transistor squaring circuit. The unit is capable of 17 v peak-to-peak output from 5 to 100,000 cy/sec. Rise time is 0.5 percent of period. (Mandrel Industries Inc., Dept. S747)

■ ANGULAR ACCELERATION GENERATOR is a torsional pendulum instrument incorporating a 12-in. test-bed table which provides very low-decrement sinusoidal oscillations to a maximum amplitude of ±180 deg. The period of oscillation is variable from 0.92 to 8 sec, and angular acceleration is variable between 0.48 and 146 $rad/sec.^2$ Test devices weighing up to 25 lb can be accommodated. Angular displacement may be derived from a micropotentiometer or synchro driven from the torsion shaft. (Statham Development Corp., Dept. S753)

■ PHASE NULL METER, small enough to be built into equipment, consists of a phase-sensitive vacuum-tube voltmeter and a calibrated phase shifter. Accuracy is ±1 deg over the ranges ±20 deg and 160 to 200 deg. A push-button polarity switch informs the operator whether the signal is closer to 0- or 180-deg phase relation to the reference. Frequency range is 380 to 420 cy/sec. Input signal range is 300 to 800 mv; reference voltages from 3.15 to 30 v, a-c, can be utilized. (Trio Laboratories, Inc., Dept. S756)

■ OXYGENATOR operates by exposing to an oxygen atmosphere a film of blood on a series of rotating disks of stainless steel mounted within a horizontal cylinder of Pyrex. No foaming or bubbling of the blood is said to occur. Oxygen-$CO_2$ mixtures are delivered the full length of the apparatus by a perforated stainless-steel

tube. Three lengths, 13, 17 and 21 in., with 60, 80 and 100 disks, respectively, are available. Corresponding priming volumes are 1400, 2000 and 2500 ml. (Pemco, Inc., Dept. S765)

■ THICKNESS GAGE uses radiation from a sealed, self-contained gamma-radiation source to measure thickness of continuous sheet materials. Transmitted radiation is sensed by a scintillation method. Response time is in the millisecond range. (Budd Co., Dept. S760)

■ FREEZE DRYER is mechanically refrigerated to temperatures as low as −60°C. The equipment, of mobile design, provides for bulk drying as well as manifold drying. Heat is furnished by quartz infrared tubes mounted inside the stainless-steel vacuum drum. The condenser has a capacity of 16 lit. A McLeod gage provides measurement of vacuum, and a thermistor indicates condenser temperature. (VirTis Company, Inc., Dept. S761)

■ VIBRATION EXCITER of electrodynamic design has a frequency range from 5 to 5000 cy/sec. Force levels of 1025 lb r.m.s. and 3150 lb peak are obtainable in noise testing with 15-to-2000-cy/sec bandwidth. The exciter will operate in altitude environments from 0 to 125,000 ft, in humidity from 0 to 95 percent, and in temperature from 0 to 200°F. Total displacement is 1 in. (MB Manufacturing Co., Dept. S763)

■ OSCILLOSCOPE has identical horizontal and vertical deflection characteristics for use as an *x-y* indicator. It may be converted into a general-purpose instrument by interchanging plugged-in components. Bandpass is from d-c to 10 Mcy/sec, rise time is 0.35 μsec, and deflection factors are selectable from 0.05 to 20 v per division. (Tektronix, Inc., Dept. S766)

■ FRACTIONATING COLUMN of spinning-band design features 2 to 3 ml liquid holdup, approximately 0.1 mm-Hg pressure drop per plate, 30 theoretical plates at total reflex, and 60 percent efficiency at a liquid take-off rate of 43 ml/hr. (Stanford Glassblowing Laboratories, Dept. S767)

■ PRESSURE CHAMBER, ½ in. in diameter by 10 in. high, provides pressures to 30,000 atm. The pressure chamber is inside a thick-walled tube which in turn is surrounded by a stack of restraining rings. A tapered fit between the tube and the rings permits application of squeeze to prevent radial expansion. Pumps are manually operated. Electrically insulated leads may be conducted into the chamber. (Nucor Research, Inc., Dept. S771)

JOSHUA STERN
*National Bureau of Standards*

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## POSITIONS WANTED

Biochemist, Ph.D.; 5 years of clinical and university teaching experience; publications; routine procedures, endocrinology, electrophoresis. Wishes to escape present position where initiative and imagination are stifled by administrative lethargy and rivalries. Box 302, SCIENCE. 12/6

Microbiologist, Ph.D., virology, cellular metabolism, genetics; biochemical, biophysical techniques; medical teaching and research experience; seeking more active position; can do. Box 295, SCIENCE. 11/29

Phytopathologist; Ph.D., 37. Mycology, entomology, bacteriology, and chemistry background; experiment station and industrial experience in plant diseases, bioassay, and fungicides. Research position desired. Box 303, SCIENCE. X

## POSITIONS WANTED

(a) Biochemist; M.S., biochemistry; 10 years, chemist, large industrial company; 4 years as director of biochemistry government research unit. (b) Science Writer; B.S.; 12 years' experience in all phases of writing, editing, and production of magazines and books; managed editorial department of 45 employees. Medical Bureau, Burneice Larson, Director, 900 North Michigan Avenue, Chicago. X

Zoologist–Physiologist, Ph.D. Desires teaching position with opportunity for research. Age, 37. Capable of assuming responsibilities at senior staff level. Now group leader in physiology at government institute. Broad background and interests. Box 301, SCIENCE. X

## POSITIONS OPEN

(a) Analytical Chemist preferably with bioanalytical experience and, also, industrial experience. Biochemist or Development Chemist with master's or higher and experienced in isolation of natural compounds and Chemical Engineer experienced in fermentation or chemical pilot plant work; large industrial company; Pacific Coast. (b) Clinical Physiologist experienced in respiratory physiology; preferably physician, Ph.D. eligible; duties: research teaching at graduate and postgraduate levels; university medical school; new teaching hospital; East. (c) Associate Medical Director; preferably physician experienced in pharmaceutical field; major company, East. (d) Copywriter; science degree with experience in pharmaceutical copywriting; well-known manufacturer of pharmaceutical and biologicals. S-11-29 Medical Bureau, Burneice Larson, Director, 900 North Michigan Avenue, Chicago. X

Bacteriologist, Ph.D. Full-time research appointment (with academic privileges) at established laboratory of midwestern university dental school. Salary range: $5500–$6500, other benefits. Excellent facilities, opportunity to publish an original research on physiology of oral microorganisms. Give detailed qualifications in reply. Box 300, SCIENCE. 12/6

## POSITIONS OPEN

Biochemist. Ideal situation for Ph.D. providing opportunity to become associated and progress with established, leading firm in its field. Present opening is result of recent promotions. Research involves all phases of enzymology, including preparation, isolation, characterization, and application. Industrial experience preferred. This permanent position offers broad scope in application of initiative and ideas. Individual should be qualified to head research team. Minimum age 30. Liberal salary commensurate with qualification. Complete benefit program. Suburban New York City location. Please submit résumé of background, including salary and career objectives. All replies will be acknowledged. Box 305, SCIENCE. X

(a) Biochemist; Ph.D. interested research ultramicro chemistry, development new diagnostic tests; head clinical department, 500-bed general hospital; $8400–$10,000; city 150,000, mideast. (b) Chief Bacteriologist; M.S., Ph.D. experienced clinical work; head department, all new 600-bed medical center hospital; South. (c) Bacteriologist; M.S., Ph.D. to head department, 300-bed general hospital; outstanding facilities, equipment, research possibilities; to $7500; Chicago area. (d) Research Biochemist; M.S., recent Ph.D. for research protein chemistry; important southern university medical school; possible faculty appointment later; to $6000. (e) Biochemist; M.S. to have full charge of department, hospital expanding to over 500 beds; college-affiliated technology school; to $7200; Mideast. Woodward Medical Bureau, Ann Woodward, Director, 185 N. Wabash Avenue, Chicago. X

### PHYSIOLOGIST

Male or female. Recent graduate with B.S. or M.S. in biology to assist in basic research in physiology. Background in histology or endocrinology preferred. Modern laboratory, good starting salary; 37½-hour week. Contact Employment Manager, Ortho Pharmaceutical Corporation, Raritan, New Jersey.

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**STEREOSCOPIC PHASE PHOTOMICROGRAPHY**

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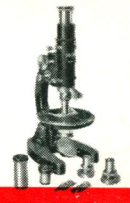
For studying optical properties of specimens. Triple-lens, focusable condenser with swing-out top elements and iris diaphragm. Bertrand lens for examination of interference figures. Two compensation plates. Revolving graduated stage. Coarse and fine focusing. Centerable, strain-free objectives, 4X, 10X, 40X. Eyepieces, micrometer 5X and cross-hair 15X.



**MPS $269**

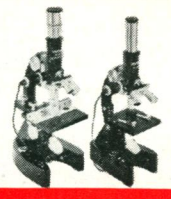
### UNITRON METALLURGICAL — Models MMU, MMA

MMU: for metals and opaque specimens and also transparent specimens under both ordinary and polarized light. Vertical, oblique and transmitted illumination. Transformer housed in microscope base. Focusable stage, polarizing apparatus and filters. Objectives: 5X, 10X, 40X, 100X. Eyepieces: P5X, P10X, K15X.

MMA: a simplified version of MMU, 25 – 600X.

**MMU $287**

**MMA $149**



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MPEA: a simplified version of MPE, 20 – 600X.

**MPE $265**

**MPEA $99**

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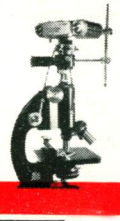
Duplicates the performance of costly apparatus. Mounting brackets adjust to accommodate your present camera (35 mm., No. 120, No. 127, etc.). Viewing telescope permits all adjustments to be made while camera is in place and allows continuous observation of the specimen, even during time exposures.



**ACA $39.95**

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**MSL $110**

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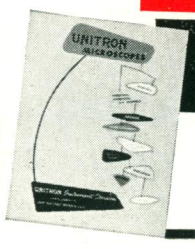


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**STANDARD MODEL NO. 3**

# WILEY LABORATORY MILL

***With harder knife edges for cutting Teflon, resins, etc.***

***New portable stand***

**4275-H3 with 4275-F6 and 4275-Z.**

**WILEY LABORATORY MILL, Standard Model No. 3.** Principal advantages of new Model No. 3 are: harder cutting edges on the knives, making it suitable for a broader range of materials, including Teflon, polyethylene resins, titanium scrap, etc.; quieter performance with less vibration; and improved appearance, i.e. baked gray enamel with parts subject to abrasion chromium plated.

As in the earlier model, four hardened steel knives on a revolving shaft work with a shearing action against six knives bolted into the frame. The shearing action of the cutting edges, between which there is always a clearance, tends to avoid changes in the sample such as temperature rise, loss of moisture, liquefaction, contamination, etc., making this mill satisfactory for many materials which can not be reduced by other mechanical means. A sieve is dovetailed into the frame so that none of the material comes from the grinding chamber until it can pass through the mesh.

Furnished with interchangeable receivers, i.e. either a deep, cast aluminum drawer with rounded inner corners, or a chute for collecting the sample directly in a standard screw neck glass jar, or in a bag, table drawer, etc. Either receiver slides into a new, spring-loaded holding device.

**4275-H3. Wiley Laboratory Mill, Standard Model No. 3,** motor driven, mounted on enclosed base, with chute for collection of sample. With ½ h.p. continuous duty motor, 1725 r.p.m.; starting switch with thermal overload cutout; V-belt, belt guard; three sieves with openings of ½ mm, 1 mm and 2 mm diameter, respectively; jars; set of four wrenches; gun-type grease injector and 1 lb. of lubricant. For use on 115 volts, 60 cycles, single phase, a.c. Power consumption 800 watts. Without Stand or Tray Attachment..... **886.00**

**4275-R3. Ditto,** but with drawer of cast aluminum alloy in place of chute and jars..... **876.50**

**4275-F6. Spillage Tray Attachment,** for use with above. Consists of bracket, which can be attached without tools, and Stainless steel tray 14⅞ inches x 10$\frac{5}{32}$ inches x 2⅛ inches deep. Can be adjusted for drawer or glass jars, sizes 1 pint to 2 quarts, inclusive..... **18.80**

**4275-Z. Portable Stand,** 10 inches high, for mounting above Mills. Consists of rubber insulated platform 23½ inches square, mounted on ball-bearing, swivel casters with foot-operated wheel brakes. Complete with rubber mounting strips and four bolts, washers and nuts for attachment to Mill..... **119.00**

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