

Equipment

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. A coupon for use in making inquiries concerning the items listed is included in the post card insert.

■ **CABLE EVALUATOR** automatically tests for leakage and continuity between any and all wire terminations of a cable harness or device. The unit includes two scanning circuits, a tape reader and code storage unit, a tape punch, an output printer, and leakage- and continuity-detection circuitry. The tape is punched to record continuity found in the test of a reference sample device. Tape produced in this way is used to program the device for comparison tests of other equipment. (James Cunningham Son and Co., Inc., Dept. 409)

■ **X-RAY FLUORESCENCE SPECTROMETER** permits simultaneous analysis of up to 22 elements in the wavelength range 0.35 to 10.2 Å. A ratio-recording system provides inked records showing the concentrations of the elements analyzed. (Applied Research Laboratories, Inc., Dept. 406)

■ **CRYSTAL OVEN** employs a mercury thermoswitch to provide temperature control. Oven temperature is maintained $\pm 0.01^\circ\text{C}$ at fixed ambient and $\pm 0.1^\circ\text{C}$ over an ambient range of 0° to 50°C . The unit operates on 24 v d-c or 6.3 v a-c. Pressurized inert gas above the mercury column prevents mercury separation under shock and vibration. The oven accommodates an HC-6/U crystal holder. (Manson Laboratories Inc., Dept. 410)

■ **STREAK CAMERA** produces a plot of space in one direction versus time in an orthogonal direction of self-luminous events. Standard 35-mm film is used. The image is swept onto the film by a triangular mirror rotated by a high-speed turbine. The fastest drive available ranges from 200 to 5500 rev/sec. Maximum writing rate is approximately 8 mm/ μsec . Control equipment includes a frequency counter for measurement of mirror speed, mirror speed adjustments, and controls for the capping shutter and the explosive-actuated blast shutter used to prevent double exposure. (Beckman and Whitley, Inc., Dept. 411)

■ **NUCLEAR-COUNTER SIMULATOR** for use in developing and testing radiation counting instruments provides recurrent, exponentially shaped voltage pulses simulating the output of a gas-filled nuclear-particle counter tube. Pulse rate is adjustable from 1 to 15 per second and voltage from 0 to 100 mv. (Automation Dynamics Corp., Dept. 414)

■ **VECTOR BRIDGE** provides direct indication of magnitude and phase-angle components of impedance from 60 cy/sec to low radio frequency. Phase range is $\pm 90^\circ$ deg; impedance range is to 100,000 ohm. Accuracy is better than $\pm 1^\circ$ deg for phase angle and ± 1 percent for impedance. An accessory plotting device permits recording of points on rectangular coordinate paper. (Harris Transducer Corp., Dept. 419)

■ **LEAK DETECTOR** of the helium mass-spectrometer type achieves fivefold increase of sensitivity over previous models by introduction of a butterfly valve be-

tween the manifold and the diffusion pump. A leak rate of 2×10^{-10} atmos cm^3/sec of helium will produce 5 percent of full reading. (Consolidated Electrodynamics Corp., Dept. 424)

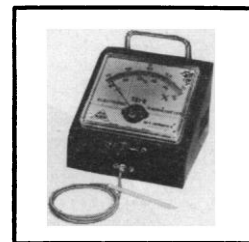
■ **AMINO ACID ANALYZER** combines ion-exchange chromatography with automatic colorimetry to perform quantitative analysis of mixtures of amino acids. The sample to be analyzed is passed through a variety of columns, and the effluent stream is combined with a regulated flow of ninhydrin reagent. The resulting mixture flows into a heated reaction vessel and thence into a photom-

TRI-R VERSATILE LABORATORY INSTRUMENTS

ELECTRONIC

Thermometer

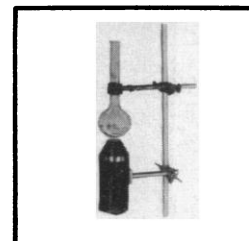
- Rapid, Accurate, Direct Reading
- Low Cost, Portable, Thermistor Type
- Many Ranges from -35 to $+100^\circ\text{C}$.
- Interchangeable & Special Probes
- Controllers & Recorders Available



COMPACT

Magnetic Stirrer

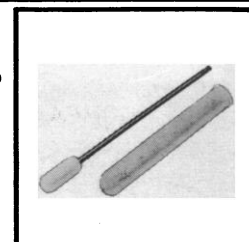
- Stir at Any Angle
- In Open or Closed Vessels
- Under Vacuum or Pressure
- With or without Hotplate



TEFLON

Tissue Homogenizers

- Interchangeable Teflon Pestles
- Precision Bore Pyrex Glass Tubes
- Notched for Quick Change Chuck
- Complete Apparatus Available



AUTOMATIC

Egg-Punch

- For Opening Embryonated Eggs
- Open 60 Eggs Per Minute
- Clean, 1" Circular Fracture
- One Hand Efficient Operation



Write for specifications and details to Dept. S

TRI-R INSTRUMENTS
DEVELOPERS OF ELECTRONIC AND MECHANICAL INSTRUMENTS FOR SCIENTIFIC RESEARCH
144-13 Jamaica Avenue, Jamaica 35, N. Y.

eter assembly. The latter measures absorption at 440 and 570 m μ and performs a third absorption measurement with a shortened light path to provide a wide range of sensitivities. Three separate absorbance curves are printed in multi-color dots by a recorder. (Phoenix Precision Instrument Co., Dept. 428)

■ **SCINTILLATION SCANNER** maps sites of radioactive material in human bodies. Whole-body scanning is fully automatic and is recorded in scale of 1:4. Full-scale scanning can be performed of areas

560 by 420 mm. A wide variety of spacings, scanning speeds, and scaling factors is offered. (LKB Produktor Fabrik Aktiebolag, Dept. 415)

■ **PERFORATED-TAPE READER** operates at 1000 characters per second. Reading is photoelectric. Stopping time is slightly more than 1 msec. The next character is read with 5 msec of reinitiation of the read operation. The reel will hold 350 or 700 ft of tape. Automatic rewind and end-of-tape sensing are provided. (Burroughs Corp., Dept. 430)

■ **TENSILE TESTER** consists of separate loading and recording sections for remote testing. Deformation rate is constant and continuously adjustable from 4 to 4000 in./min. The instrument produces a photographic record calibrated in terms of stress, strain, and time. (Allegheny Instrument Co., Inc., Dept. 416)

■ **TESTING MACHINE** provides automatic simulation of a wide range of stress and strain at elevated temperatures. Capacity is zero to 50,000 lb. Temperature range extends beyond 3000°F. Ram rates up to 3/4 in./sec, temperature rises to 200°F per second, and cycling rates of 10 per second are possible. Variable-reluctance transducers sense strain and load. Measurements are automatically recorded on an 8 1/2- by 11-in. graph. (Marquardt Aircraft Co., Dept. 417)

■ **SOLID-STATE BATTERY** has a potential of 95v in 0.14 in³. It can supply 10⁻³ μ a for 176,000 hr or a flash current of 20 μ a. Voltage per cell is 0.8, and configurations providing 95 v/in. and 625 v/in.³ can be produced. Steady current per square inch of cell area ranges from 10⁻⁵ amp for 100 hr to 10⁻⁸ amp for an estimated period of 100,000 hr for a 10-percent voltage drop. Flash current of 200 μ a/in.² is obtainable. Temperature coefficient is 1.2 $\times$ 10⁻³ v/deg v between -50° and +50°C. (Universal Winding Co., Dept. 418)

■ **FRACTIONATION COMPUTER** accepts electrical input signals from instrument transmitters installed in the fractionation process loop and performs computation designed to maintain product quality. Calculations are based on feed flow rate and product analysis. (Southwestern Industrial Electronics Co., Dept. 422)

■ **AIRBORNE-PARTICLE SAMPLER** is built around a turbine-type blower and has a capacity of 75 ft³/min. Flow is measured by a self-contained variable-orifice meter. A variety of filters is available. (Nucleonic Corp. of America, Dept. 425)

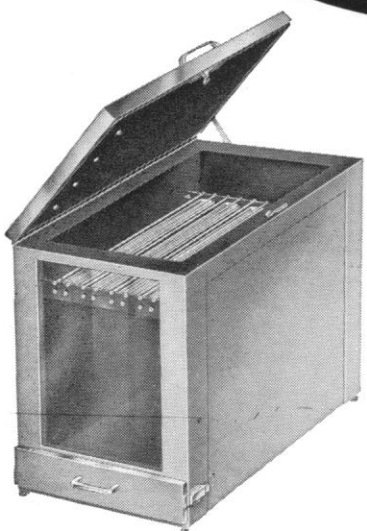
■ **TEMPERATURE RECORDER** has sensitivity and accuracy $\pm$ 0.001°C on a full scale of 0.5°C. The instrument combines a thermistor sensing element and a strip-chart recorder. Any 0.5°C portion of the total range 20° to 30°C may be selected by a switch. Other ranges and multi-point measurement can be furnished. (Fenwal Electronics, Inc., Dept. 426)

■ **COOLING COIL** is a refrigerated coil that can be immersed in liquid or placed in a cabinet as needed. A rolling cabinet houses the compressor and thermostat. A 5-foot, flexible extension hose couples the tinned-copper cooling coil, measuring 8 in. by 4 1/2 in. in diameter, to the cabinet. Temperature control is main-

NEW

LOW COST

CHROMATOCAB®



**HIGH QUALITY
FEATURES**

- Glass wool insulation
- Large capacity troughs
- Full width drawer
- Formica lining
- Solvent refill holes
- Leveling feet

The RSCo Model 125 combines all the functional features which for years have characterized Chromatocabs as the outstanding value in paper chromatography.

COMPARE the PRICE and ask —

Where else can you find in one cabinet the corrosion resistance of a Formica lining PLUS the insulation afforded by glass wool PLUS the convenience of a drawer for cleaning and for set-up of ascending chromatograms?

IN ADDITION —

- An especially large triple-pane window lets you see the troughs when introducing solvent through refill holes in the lid.
- The flat top of the cabinet is Formica-covered to give a durable working surface.

PRICE, complete with 4 trough assemblies..... \$300.00

® REGISTERED TRADEMARK

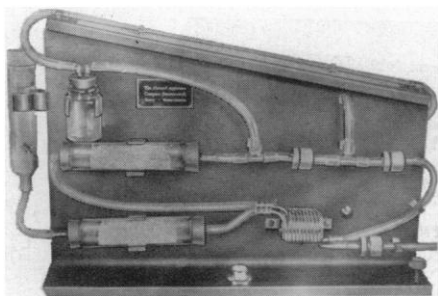
Write for
Bulletin 125-A
or
contact your
authorized
RSCo dealer



RESEARCH SPECIALTIES CO.

200 SOUTH GARRARD BLVD. RICHMOND, CALIFORNIA

CONTINUOUS CO₂ ANALYZER



A simple CO₂ Analyzer based on the critical orifice principle.*

Specifications

Sample flow rate—100 cc./min.

Range—0 to approx. 10% CO₂

Accuracy— $\pm 0.05\%$ CO₂

Response time—2 to 3 min. for final reading

Vacuum requirement—simple water aspirator which reduces pressure to at least half atmospheric

Chemicals—Ascarite, Drierite and gauge oil supplied

The analyzer is particularly suited for continuous analysis of both expired gas and alveolar gas (e.g. as provided by Rahn end-tidal sampler) in student physiology laboratories. The sampling rate is such that the unit can be used in series with a Pauling oxygen analyzer.

*J. Mead. *A critical orifice CO₂ analyzer suitable for student use.* *SCIENCE*, Vol. 121, Pages 103-4, 1955.

CO₂ Analyzer, complete—\$145.00
F.O.B. Dover, Mass.

HARVARD APPARATUS CO., INCORPORATED

Dover, Massachusetts, U.S.A.

(A nonprofit organization)

tained $\pm 2^\circ\text{F}$ from ambient to 5°F . A temperature probe inserted with the cooling coil controls the thermostat. Operation is on 115 v a-c. (Andrew Technical Supply Co., Dept. 429)

■ INDICATOR TUBE of numeral-electrode neon-glow type is available with diameter of 3 in. Digital indication of the tube is said to be readable at distances greater than 150 ft. (Burroughs Corp., Dept. 427)

■ SHAFT-ANGLE DIGITIZER solves the problem of centering of the measuring disk by taking the arithmetic average of two dial readings at diametrically opposite points. Readings are made by two photodiodes counting two waveforms inscribed on the disk. By counting the number of crossings of the two waveforms, digital logic may be applied to follow bidirectional rotation. (Dynamics Research Corp., Dept. 420)

■ FREQUENCY-SELECTIVE VOLTMETER covers the frequency range 1 to 400 kcy/sec. The instrument uses the heterodyne principle and crystal-filter selectivity. A 100-cy/sec-bandwidth filter and a 3-kcy/sec-bandwidth filter are provided. A direct-reading meter is calibrated from -90 to $+32$ dbm with accuracy ± 0.5 db over the instrument range. (Railway Communications, Inc., Dept. 423)

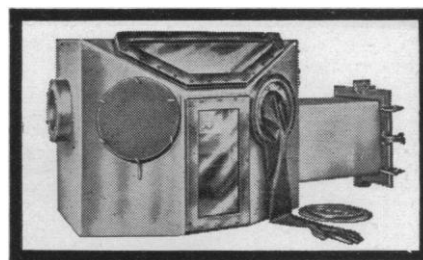
■ SCINTILLATION SPECTROMETER is an automatic instrument that utilizes a step drive to advance the base line sequentially, 1 volt at a time, for up to 100 channels. Counting time for each setting may be from 0.5 to 8 min. Counts are accumulated, and the total is recorded at the end of the chosen period. Count integration for the next channel starts as soon as the previous value has been reset to zero. (Baird-Atomic Inc., Dept. 431)

■ CHLORIDE TITRATOR operates by reacting chloride ions with electrochemically produced silver ions. A constant direct current between a pair of silver electrodes provides silver ions until all chloride has been reacted. At this point unreacted silver ions cause an abrupt increase in conductivity, actuating a relay to interrupt the current and stop a timer. Elapsed time is proportional to chloride content. Titration time usually ranges from 5 to 60 sec. (American Instrument Co., Inc., Dept. 432)

■ POTENTIOSTAT maintains the potential between an electrolyte and a test sample constant by monitoring the potential with a standard electrode. Potential is adjustable between 0 and ± 2 v, and current is variable ± 50 ma. (Shandon Scientific Co., Ltd., Dept. 449)

JOSHUA STERN
National Bureau of Standards

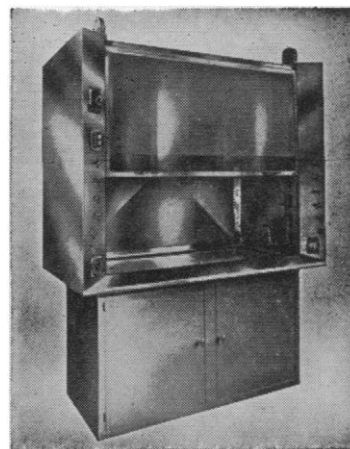
for work in a
controlled
atmosphere



BLICKMAN VACUUM DRY BOX

Designed for safe handling of radio-isotopes, reactor fuel containing Plutonium or U233 and other hazardous substances. With air-lock, it can be sealed to create a vacuum. Fabricated of stainless steel plate—34" long x 26" high x 24" wide at base. Air-lock measures 18" x 12". Send for Technical Bulletin A-2.

FOR SAFE HANDLING OF RADIOACTIVE MATERIALS



BLICKMAN FUME HOOD

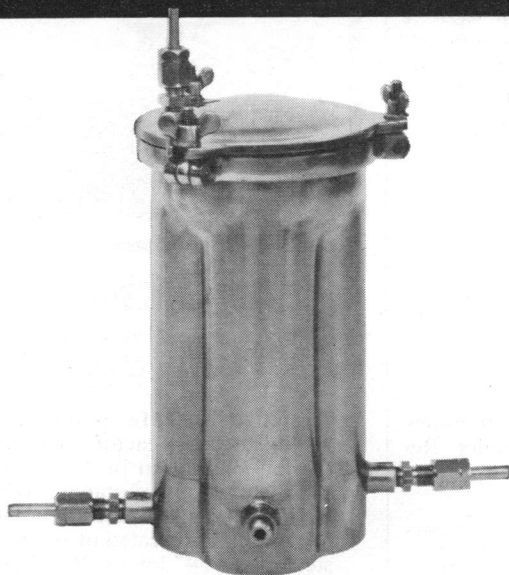
Originally designed and developed for the AEC, this Fume Hood assures maximum safety in the handling of radioactive materials and radioactive isotopes. Sturdy 14-gauge stainless steel, round corner construction provides long life...easy cleaning and decontamination. Send for Technical Bulletin E-3. S. Blickman, Inc., 6910 Gregory Avenue, Weehawken, N. J.

BLICKMAN LABORATORY EQUIPMENT

Look for this symbol of quality

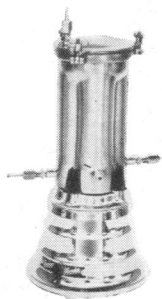


NOW...COLLOIDIZE INFECTIOUS TISSUE WITHOUT ENDANGERING HUMAN LIFE!



New Safety-Sealed **WARING ASEPTIC DISPERSER** Eliminates Aerosol Hazard . . . Lab Air Kept Pathogen-Free . . . Design Permits Temperature Control to Insure Maximum Yield

Here is important safety news for everyone concerned with health hazards while liberating micro-organisms from diseased tissue. This new stainless steel **Waring Aseptic Disperser** does high speed blending while completely sealed. No infectious aerosol escapes. Fluids are aseptically transferred. Agitator has leakproof bearings. Water jacket provides for temperature regulation.



Any standard Waring Blendor base will operate the **Aseptic Disperser**. Colloidization is so fast and effective, maximum yield is attained. Samples can be removed by hypodermic needle. Entire **Waring Aseptic Disperser** can be autoclaved or otherwise sterilized.

WARING PRODUCTS CORPORATION

25 West 43rd St., New York 36, N.Y.
Subsidiary of Dynamics Corporation of America



—WRITE FOR COMPLETE SPECIFICATIONS—

GENTLEMEN:

Send me technical data on the new **Waring Aseptic Disperser**.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY/ZONE _____ STATE _____

New Vacuum Valve Manual Free

Write for Your Copy!



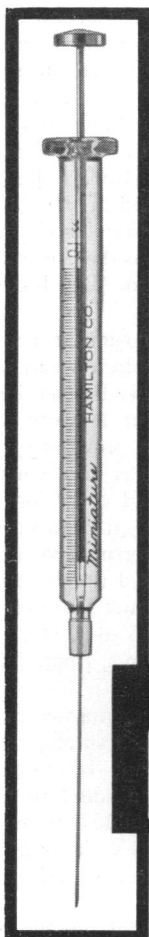
Gives engineering information on types and uses of high vacuum valves. Contains valuable design data on more than 275 valves. Sizes $\frac{1}{8}$ " to 20" manual and remote operation. Lists wye, globe, angle, slide, ball, air release, throttling and quick connect valves. Write for bulletin No. V3 today!

Department 25-X



NRC Equipment Corporation

A subsidiary of National Research Corp.
160 Charlemont Street, Newton 61, Mass.



Accuracy to $\frac{1}{10}$ Microliter! HAMILTON MICROLITER SYRINGES WITH CEMENTED NEEDLES

When accurate liquid discharge is vital, such as in gas or vapor chromatography, these Hamilton Syringes are essential to your analytical work . . .

- * Three models — 100, 50 and 10 microliter capacities — meet all requirements
- * Skilled operators maintain accuracy of discharge to $\frac{1}{10}$ of 1 microliter
- * Precision of graduation is consistently better than 1%
- * Fixed concentric needle minimizes dead volume in the syringe, prevents leakage
- * Syringe is tested to be leak-tight with water at 150 psi
- * Special needle point design easily perforates rubber closures without plugging

Order direct — or write *today* for literature and prices!

THE HAMILTON COMPANY

DEPARTMENT K

1134 WHITLEY STREET • WHITTIER, CALIFORNIA
A Complete Line of Precision,
Radiochemical Handling Equipment

DIRECTORY OF ADVERTISED PRODUCTS

Classified in the following pages are the products advertised in *Science* in the issues from 25 October 1957 through 17 October 1958. This list is intended to aid laboratory workers in finding the manufacturers of all types of laboratory equipment and supplies. At the end of the classified list is a list of companies that advertised in "The Market Place" section during the period 25 October 1957 through 17 October 1958. An index of advertisers in this issue appears on page 1047.

ABSORPTION CELLS

Klett Manufacturing Co.

1957: 1 Nov., 943; 15 Nov., 1036; 29 Nov., 1129; 13 Dec., 1255; 27 Dec., 1357
1958: 3 Jan., 41; 10 Jan., 100; 17 Jan., 159; 24 Jan., 206; 31 Jan., 251; 7 Feb., 299; 21 Feb., 427; 28 Feb., 446; 7 Mar., 536; 14 Mar., 609; 21 Mar., 657; 28 Mar., 709; 4 Apr., 763; 11 Apr., 827; 18 Apr., 885; 25 Apr., 1000; 2 May, 1071; 9 May, 1129; 16 May, 1193; 23 May, 1260; 30 May, 1295; 6 June, 1354; 13 June, 1403; 27 June, 1514; 4 July, 39; 11 July, 98; 18 July, 155; 25 July, 216; 1 Aug., 259; 8 Aug., 315; 15 Aug., 373; 22 Aug., 431; 29 Aug., 484; 5 Sept., 546; 12 Sept., 611; 19 Sept., 677; 26 Sept., 728; 3 Oct., 783; 10 Oct., 855; 17 Oct., 919

ACCELERATORS, VAN DE GRAAFF

High Voltage Engineering Corp.

1957: 29 Nov., 1094
1958: 3 Jan., 2; 24 Jan., 176; 21 Feb., 382; 21 Mar., 624; 18 Apr., 840; 16 May, 1146; 13 June, 1370; 11 July, 60; 22 Aug., 386; 19 Sept., 630; 17 Oct., 868

ANALYZERS

Applied Physics Corp.

1957: 25 Oct., 873

Eldorado Electronics

1958: 25 July, 208; 8 Aug., 319

Technical Measurement Corp.

1958: 3 Oct., 746

ANIMALS, EXPERIMENTAL

Holtzman Company

1957: 25 Oct., 893; 22 Nov., 1085; 20 Dec., 1309

1958: 17 Jan., 166; 14 Feb., 357; 14 Mar., 614

Taconic Farms

1957: 25 Oct., 893; 15 Nov., 1037; 6 Dec., 1213

ANTIBIOTIC SENSITIVITY INDICATORS

Difco Laboratories

1957: 25 Oct., 857; 22 Nov., 1077; 20 Dec., 1303

1958: 17 Jan., 159; 14 Feb., 355; 14 Mar., 609; 2 May, 1071; 30 May, 1300; 27 June, 1507; 25 July, 215; 22 Aug., 431; 19 Sept., 675; 17 Oct., 919

"ATOMOTRON"

Garfield, Oliver, Co., Inc.

1958: 28 Feb., 481

AUTOCLAVES

Parr Instrument Co.

1957: 25 Oct., 871

Wilmot Castle Co.

1957: 6 Dec., 1203

BAGS, AUTOPSY ROOM

Busse Hospital Products

1958: 14 Mar., 607

BALANCES, ANALYTICAL

Acc Glass, Inc.

1957: 25 Oct., 850

Ainsworth, Wm., & Sons, Inc.

1957: 25 Oct., 860; 15 Nov., 1032; 6 Dec., 1188

1958: 28 Feb., 482, 483; 9 May, 1130, 1131; 18 July, 153; 19 Sept., 669

American Hospital Supply Corp., Scientific Products Div.

1957: 25 Oct., 776

Brinkmann Instruments, Inc.

1957: 1 Nov., 937

1958: 7 Feb., 304; 20 June, 1455; 12 Sept., 605

Central Scientific Co.

1957: 25 Oct., 770

Decker Corp.

1958: 21 Feb., 365

Exact Weight Scale Co.

1958: 28 Mar., 715; 18 Apr., 883; 2 May, 1072; 6 June 1344; 8 Aug., 317

Mettler Instrument Corp.

1957: 25 Oct., 800

1958: 14 Mar., 558; 18 July, 106; 12 Sept., 565

Scientific Glass Apparatus Co., Inc.

1958: 31 Jan., 252; 28 Mar., 708

Standard Scientific Supply Corp.

1958: 25 Apr., 1010

Thomas, Arthur H., Co.

1958: 10 Oct., 860

Torsion Balance Co.

1958: 12 Sept., 558

Welch, W. M., Manufacturing Co.

1958: 7 Mar., 532; 5 Sept., 540

BALANCES, ANIMAL

Exact Weight Scale Co.

1958: 6 June, 1344; 8 Aug., 317

Ohaus Scale Corp.

1958: 30 May, 1297; 26 Sept., 732

BAROMETERS

Central Scientific Co.

1958: 11 July, 97; 12 Sept., 611

BATHS

American Hospital Supply Corp., Scientific Products Div.

1958: 15 Aug., 329

Labline, Inc.

1958: 26 Sept., 726

Sargent, E. H., Co.

1958: 16 May, 1142

Scientific Glass Apparatus Co., Inc.

1958: 25 Apr., 996

Standard Scientific Supply Corp.

1958: 5 Sept., 550

BLOCK AND TACKLE

Scott-Mitchell House, Inc.

1958: 26 Sept., 730

BLOOD GAS APPARATUS

Phipps & Bird, Inc.

1958: 11 July, 97; 25 July, 215

Thomas, Arthur H., Co.

1957: 1 Nov., 944

BOOKS AND JOURNALS

Academic Press, Inc.

1957: 6 Dec., 1204; 20 Dec., 1305

1958: 7 Feb., 301; 21 Feb., 419; 25 Apr., 983

Addison-Wesley Publishing Co., Inc.

1958: 19 Sept., 626

Annual Reviews, Inc.

1957: 25 Oct., 869; 15 Nov., 1033; 6 Dec., 1207

1958: 3 Jan., 44; 21 Feb., 415; 21 Mar., 657; 25 Apr., 997; 16 May, 1199; 6 June, 1351; 4 July, 43; 1 Aug., 261; 5 Sept., 551; 3 Oct., 792

Archaeology

1958: 25 Apr., 988

Basic Books

1958: 25 Apr., 1003; 26 Sept., 687, 727

Biological Laboratory

1958: 2 May, 1067

Cambridge University Press

1958: 25 Apr., 985

Chronicle of United Nations Activities

1958: 27 June, 1511

Consultants Bureau, Inc.

1957: 25 Oct., 852; 8 Nov., 984; 22 Nov., 1078; 13 Dec., 1256; 20 Dec., 1302

1958: 3 Jan., 40; 24 Jan., 198; 31 Jan., 248; 14 Feb., 352; 21 Feb., 426; 7 Mar., 533; 28 Mar., 667; 11 Apr., 820; 18 Apr., 882; 25 Apr., 986; 9 May, 1122; 23 May, 1250; 30 May, 1296; 6 June, 1346; 13 June, 1400; 22 Aug., 426; 5 Sept., 548; 19 Sept., 670; 10 Oct., 846

Cranbrook Institute of Science

1958: 25 Apr., 1000

Doubleday & Co., Inc.

1957: 22 Nov., 1081

1958: 14 Feb., 358; 27 June, 1514

Dover Publications, Inc.

1958: 18 Apr., 837

Dutton, E. P., and Co.

1958: 25 Apr., 999

Garfield, Eugene, Associates

1958: 25 Apr., 927

Harper & Brothers

1958: 23 May, 1254

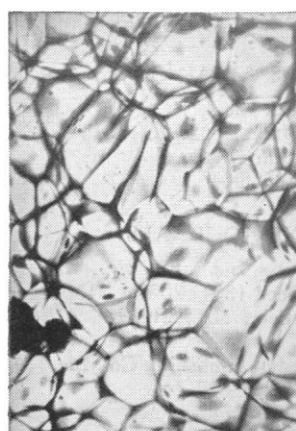
Harvard University Press

1957: 6 Dec., 1206

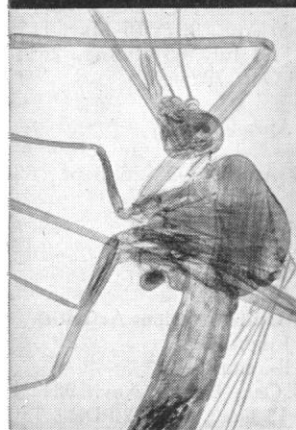
1958: 21 Feb., 416; 5 Sept., 542; 17 Oct., 909
Houghton Mifflin Co.
 1958: 25 Apr., 992
Humanist Advance Committee
 1957: 25 Oct., 886; 13 Dec., 1259
Interscience Publishers, Inc.
 1957: 25 Oct., 778
 1958: 25 Apr., 921
Lea & Febiger
 1957: 6 Dec., 1203
 1958: 25 Apr., 925
Library of Science
 1958: 21 Feb., 364; 22 Aug., 383; 17 Oct., 911
Little, Brown & Co.
 1957: 25 Oct., 879; 29 Nov., 1127; 6 Dec., 1189

Macmillan Co.
 1958: 25 Apr., 919
Macy, Josiah, Jr. Foundation
 1957: 20 Dec., 1307
 1958: 25 Apr., 987; 5 Sept., 545
Maxwell, I. R., & Co., Ltd.
 1957: 25 Oct., 802; 29 Nov., 1092; 20 Dec., 1266
 1958: 11 Apr., 784; 18 Apr., 838; 11 July, 52
McGraw-Hill Book Co., Inc.
 1958: 25 Apr., 915
Mosby, C. V., Co.
 1958: 25 Apr., 929
Muirhead Instruments, Inc.
 1957: 25 Oct., 867
Ohio State University Press
 1958: 28 Feb., 481

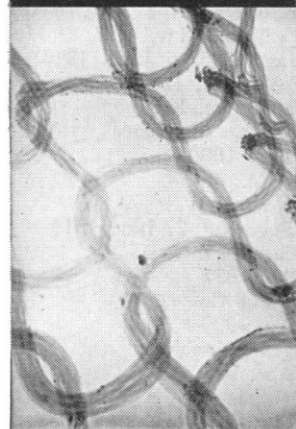
Oxford University Press
 1958: 21 Feb., 434; 25 Apr., 1006; 12 Sept., 613
Pergamon Press
 1957: 1 Nov., 900; 8 Nov., 954; 15 Nov., 996; 22 Nov., 1050; 6 Dec., 1156; 13 Dec., 1220; 27 Dec., 1316
 1958: 3 Jan., 6; 10 Jan., 56; 17 Jan., 112; 24 Jan., 174; 31 Jan., 212; 7 Feb., 260; 14 Feb., 312; 21 Feb., 380; 28 Feb., 448; 7 Mar., 498; 14 Mar., 560; 21 Mar., 622; 28 Mar., 672; 4 Apr., 726; 2 May, 1020; 16 May, 1140; 30 May, 1303; 6 June, 1311; 13 June, 1364; 20 June, 1414; 27 June, 1519; 4 July, 4; 26 Sept., 688
Philosophical Library
 1957: 25 Oct., 858; 1 Nov., 936; 22 Nov., 1042, 1043
 1958: 21 Feb., 423; 28 Feb., 445; 25 Apr., 911
Prentice-Hall, Inc.
 1957: 13 Dec., 1255
 1958: 14 Feb., 355; 14 Mar., 609; 25 Apr., 991; 10 Oct., 855
Princeton University, Industrial Relations Section
 1958: 21 Feb., 428
Reinhold Publishing Corp.
 1958: 10 Jan., 54; 25 Apr., 994
Ronald Press Co.
 1957: 1 Nov., 939; 6 Dec., 1198
 1958: 14 Feb., 351; 25 Apr., 1003; 6 June, 1350; 18 July, 154
Saunders, W. B., Co.
 1957: 8 Nov., 947; 6 Dec., 1139
 1958: 3 Jan., 3; 14 Feb., 307; 14 Mar., 555; 4 Apr., 725; 11 Apr., 779; 18 Apr., 881; 25 Apr., 899; 2 May, 1065; 9 May, 1083; 16 May, 1143; 23 May, 1203; 6 June, 1307; 4 July, 3; 1 Aug., 223; 12 Sept., 559; 10 Oct., 799
Simmons-Boardman Books
 1958: 23 May, 1252
Simon and Schuster, Inc.
 1958: 17 Oct., 914
Society for General Systems Research
 1958: 25 Apr., 991
Stanford University Press
 1957: 6 Dec., 1190
 1958: 25 Apr., 988
Thomas, Charles C.
 1958: 14 Feb., 348
United Nations
 1958: 15 Aug., 328
University of Chicago Press
 1957: 13 Dec., 1223
 1958: 25 Apr., 923; 23 May, 1206
University of Wisconsin Press
 1957: 6 Dec., 1200
Van Nostrand, D., Co., Inc.
 1958: 3 Jan., 39; 25 Apr., 931; 12 Sept., 563; 17 Oct., 863
Wiley, John, & Sons, Inc.
 1957: 15 Nov., 995; 6 Dec., 1142, 1143
 1958: 10 Jan., 51; 14 Feb., 308; 14 Mar., 556; 25 Apr., 902, 903; 10 Oct., 800
Yale University Press
 1958: 23 May, 1254
Year Book Publishers, Inc.
 1958: 31 Jan., 210



METALLURGY

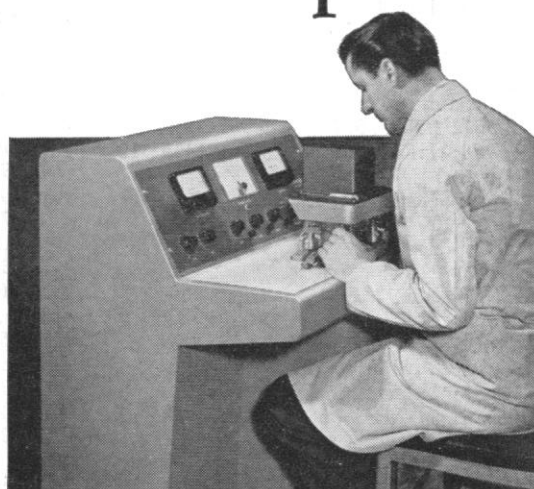


BIOLOGY



TEXTILES

New G-E x-ray microscope...



multiplies penetration, resolution, magnification

New frontiers of research and development are being explored *today* with the General Electric x-ray microscope. Revealing internal structures invisible under conventional microscopy, this versatile instrument's high resolving power permits magnifications up to 1500 times.

Images can be viewed on a fluoroscopic screen, photographed directly on Polaroid® film, recorded on conventional film or presented in stereo for that important third dimension. Specimens do not have to be placed in a vacuum.

You can get complete information from your G-E x-ray representative. Or write X-Ray Department, General Electric Company, Milwaukee 1, Wisconsin, for Pub. SC-104.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

Just published: Vol. 12 (581 pages)

ANNUAL REVIEW OF MICROBIOLOGY

Editorial Committee: S. P. Chilton, C. E. Clifton,
C. A. Evans, R. E. Hungate, T. M. Sonneborn,
W. W. Umbreit

Bacterial Protoplasts
Bacterial Viruses (With Particular Reference to
Adsorption/Penetration)
Newly Recognized Respiratory Tract Viruses
The Use of Bacteria Grown *In Vivo* for Studies on
the Basis of Their Pathogenicity
Parasitic Diseases of Man (Recent)
The Control and Eradication of Animal Diseases in
the United States
Metabolism of Carbohydrates and Related Compounds
Inorganic Nitrogen Metabolism
Microbial Nutrition
Nutrition and Ecology of Protozoa and Algae
Bacterial Genetics
Genetics of Fungi
Review of the Microbiological and Immunological
Literature Published in 1957 in the U.S.S.R.
Antibiotics in the Control of Plant Diseases
Masked Virus Infection in Plants
Plant Tissue Cultures Open a Botanical Frontier
Factors Determining the Pathogenicity of Staphy-
lococci
Microbiological Aspects of Radiation Preservation
of Food
Chemical Disinfectants

\$7.00 postpaid (U.S.A.); \$7.50 postpaid (elsewhere)

ANNUAL REVIEWS, INC.

Grant Avenue, Palo Alto, California

Hemotrol*

Trade Mark

new internal hemoglobin standard

- stable human blood—18 months
- can be used with any method employing any photometer
- internal standard—goes through the entire procedure in parallel with the unknown specimen
- independently standardized by total iron, oxyhemoglobin, and cyanmethemoglobin methods—accurate to 1% of true value

Available at your dealer

Technical data on request

CLINTON LABORATORIES

6010 Wilshire Boulevard, Los Angeles 36, California

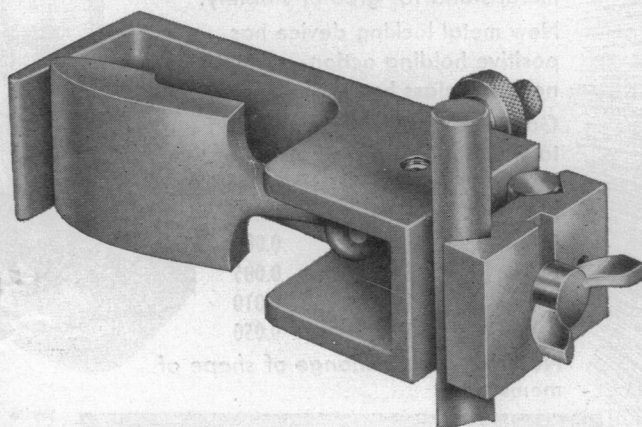
*PATENT APPLIED FOR

NEW

Nylab's

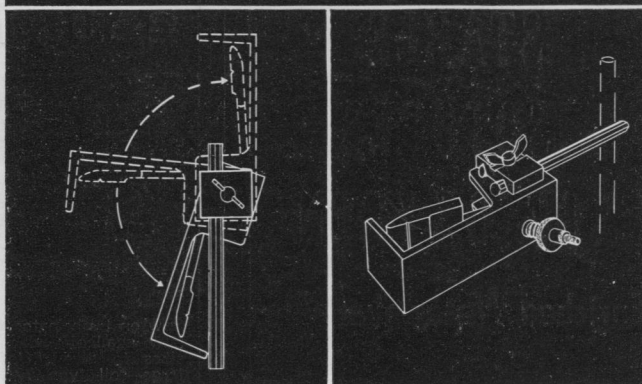
MECHANICAL HAND

Apparatus Clamp



An apparatus clamp that always provides convenience and positive grasping power. ONE STYLE and 2 SIZES meet every clamping requirement. The NYLAB Mechanical Hand can firmly grasp, with equal efficiency, any object from a thin wire to a condenser or flask. Adapts to and holds all conventional shapes.

The most versatile laboratory clamp yet designed!



Bird's-eye-view showing the exclusive swivel feature of Mechanical Hand . . . A new type of V-Block mounting provides complete angular adjustability . . . Flip-over clamping arm (one side for small objects—the other side for large objects) adjusts for apparatus up to 3 1/4" maximum diameter.

Constructed of a strong, corrosion resistant aluminum alloy with small parts of stainless steel.

Small size
Range: 0 to 2 1/4"
Catalog No. 22990-6
\$4.25

Large size
Range: 0 to 3 1/4"
Catalog No. 22990-10
\$4.75



Write for further detailed information.

New York Laboratory Supply Co., Inc.

76-78 VARICK STREET

NEW YORK 13, N. Y.

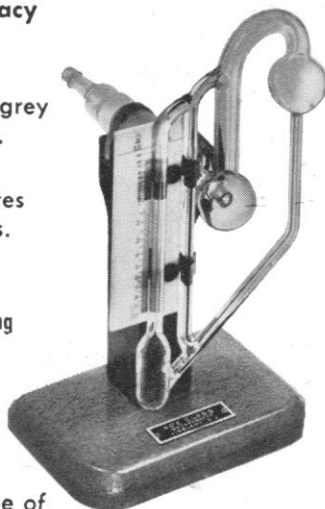
ACE McLEOD GAUGE

ACCURATE TO WITHIN $\pm 3\%$

Trubore tubing assures accuracy and interchangeability within each pressure range. Now supplied with hammer-tone grey metal stand for greater stability. New metal locking device has positive holding action—eliminates need for glass hooks and springs. Gauge will hold at any position to which it is rotated.

Type	Pressure Range mm. Hg.	Lowest Reading mm. Hg.
A	0-1.0	0.001
B	0-5.0	0.005
C	0-10.0	0.010
D	0-15.0	0.050

No error due to change of shape of meniscus



8726

Write Dep't MG E
for details and prices

ACE GLASS INCORPORATED
VINELAND  NEW JERSEY

LOUISVILLE, KY., BOX 996

STABLE ISOTOPES OF OXYGEN

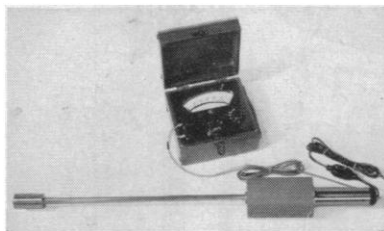
Enriched Water available

Now up to 95 atom % O^{18}
up to 2.0 atom % O^{17}

For information write to:

ISOTOPE DEPARTMENT
**WEIZMANN INSTITUTE
OF SCIENCE**
REHOVOTH, ISRAEL

New higher sensitivity GAUSSMETERS



Rawson-Lush patented Rotating Coil type, now available with a wide range of coil sizes to give different sensitivities. New large coil type 726 indicates the Earth's magnetic field.

FEATURES—Type 726:

- Ranges 3—10—30—100—300—1000 gauss full scale, all in one instrument. Tip diameter $1\frac{1}{4}$ "
- Guaranteed accuracy 1% or better. Readings are obtained on a high-quality laboratory type meter with a five inch scale length, knife edge pointer, mirror scale.
- Does not require field uniformity. Coil gives average field over its volume, so a distorted field can be measured.
- Measures component of the field in a desired direction, as well as total intensity.
- Simple operating principles, simple to use and maintain.
- Compact and portable, just one meter and long probe unit.

Also available—type 504 Fluxmeter, for measuring lines in magnetic circuits. Send for bulletins.

**RAWSON ELECTRICAL
INSTRUMENT COMPANY**

fine instruments since 1918

127 Potter Street Cambridge, Mass.

CAMERAS AND ACCESSORIES

American Optical Co., Instrument Div.

1958: 3 Oct., 796

Brinkmann Instruments, Inc.

1958: 13 June, 1397

Central Scientific Co.

1957: 15 Nov., 1039; 13 Dec., 1218

1958: 10 Jan., 103; 21 Feb., 368; 28

Mar., 719; 4 Apr., 723

Edmund Scientific Co.

1958: 11 July, 103

Phipps & Bird, Inc.

1958: 21 Feb., 430

Polaroid Corp.

1957: 25 Oct., 773

United Scientific Co., Unitron Instrument Div.

1958: 26 Sept., 739

CATALOGS

Allied Radio

1958: 3 Jan., 43; 21 Feb., 419

American-Lincoln Incubator Co.

1958: 17 Oct., 918

American Optical Co., Instrument Div.

1957: 22 Nov., 1088

1958: 18 Apr., 896

Applied Physics Corp.

1957: 6 Dec., 1193

Atomic Accessories, Inc.

1957: 25 Oct., 890

Baird-Atomic, Inc.

1957: 6 Dec., 1194

Bausch & Lomb Optical Co.

1957: 8 Nov., 956; 6 Dec., 1158; 20 Dec., 1270; 27 Dec., 1354

1958: 17 Jan., 114; 31 Jan., 214; 28

Mar., 674; 9 May, 1090; 20 June, 1418;

1 Aug., 226; 15 Aug., 336; 29 Aug., 444;

26 Sept., 692

Beckman Instruments, Inc., Scientific and Process Instruments Div.

1958: 12 Sept., 614

Bellco Glass, Inc.

1957: 25 Oct., 891; 27 Dec., 1357

1958: 14 Mar., 611; 11 Apr., 822; 25 Apr., 1005; 30 May, 1295

California Corporation for Biochemical Research

1958: 18 July 108; 29 Aug., 491

Clay-Adams, Inc.

1957: 6 Dec., 1207

Colorado Serum Co.

1957: 25 Oct., 869; 15 Nov., 1026

1958: 21 Feb., 415; 25 Apr., 999; 16 May, 1196; 13 June, 1397

Corning Glass Works

1957: 6 Dec., 1153

1958: 3 Jan., 5; 14 Feb., 351; 7 Mar., 491; 11 Apr., 818; 2 May, 1079; 5 Sept., 499

Duralab Equipment Corp.

1958: 3 Oct., 791

Edmund Scientific Co.

1958: 6 June, 1310

Fisher Scientific Co.

1958: 8 Aug., 314; 10 Oct., 852

Greiner, Emil, Co.

1958: 12 Sept., 561

Harshaw Chemical Co.

1957: 25 Oct., 877

Lourdes Instrument Corp.

1958: 26 Sept., 725

Metalab Equipment Co.

1957: 25 Oct., 866

Nalge Co., Inc.

1957: 27 Dec., 1356

1958: 17 Jan., 162; 21 Feb., 420; 25 Apr., 914; 16 May, 1188; 13 June, 1396; 18 July, 158; 8 Aug., 318; 19 Sept., 668
National Research Corp., NRC Equipment Corp.

1958: 5 Sept., 542

Nutritional Biochemicals Corp.

1957: 25 Oct., 853; 8 Nov., 952; 22 Nov., 1081; 6 Dec., 1189; 20 Dec., 1304

1958: 3 Jan., 41; 17 Jan., 110; 31 Jan., 251; 14 Feb., 358; 28 Feb., 446; 14 Mar., 611; 28 Mar., 709; 11 Apr., 827; 25 Apr., 991; 9 May, 1132; 23 May, 1253; 6 June, 1351; 20 June, 1455; 4 July, 39; 18 July, 159; 1 Aug., 264; 15 Aug., 375; 29 Aug., 487; 12 Sept., 616; 26 Sept., 724; 10 Oct. 851

Olympus Optical Instrument Co.

1957: 6 Dec., 1197

Research Specialties Co.

1958: 21 Feb., 430

Sanborn Co.

1957: 6 Dec., 1149; 20 Dec., 1269

1958: 17 Jan., 111

Schwarz Laboratories, Inc.

1958: 16 May, 1186

Sigma Chemical Co.

1958: 10 Jan., 99; 14 Feb., 355; 14 Mar., 615; 25 Apr., 997; 23 May, 1259; 20 June, 1449; 18 July, 155; 15 Aug., 373; 10 Oct., 854

Tracerlab, Inc.

1958: 21 Mar., 655

United Scientific Co., Unitron Instrument Div.

1957: 25 Oct., 781; 8 Nov., 986; 22 Nov., 1082; 13 Dec., 1222

1958: 7 Feb., 297; 14 Feb., 350; 21 Feb., 371; 28 Feb., 481; 7 Mar., 493; 14 Mar., 606; 21 Mar., 652; 28 Mar., 712; 4 Apr., 764; 11 Apr., 819; 18 Apr., 835; 25 Apr., 999; 2 May, 1070; 9 May, 1125; 23 May, 1254; 30 May, 1298; 13 June, 1403; 27 June, 1469; 25 July, 171; 5 Sept., 547; 12 Sept., 612; 19 Sept., 668; 3 Oct., 791

Will Corp.

1957: 15 Nov., 1031

1958: 24 Jan., 200; 21 Mar., 654; 25 Apr., 984; 16 May, 1191; 18 July, 157; 22 Aug., 432

Wilmot Castle Co.

1957: 25 Oct., 854

Winthrop Laboratories

1958: 14 Feb., 348; 21 Mar., 657; 25 Apr., 1000

CENTRIFUGES

Beckman Instruments, Inc., Spinco Div.

1957: 25 Oct., 785; 6 Dec., 1147

1958: 28 Feb., 487; 25 Apr., 926; 19 Sept., 622; 17 Oct., 862

International Equipment Co.

1957: 25 Oct., 783; 8 Nov., 949; 22 Nov., 1087; 6 Dec., 1141

1958: 21 Feb., 439; 21 Mar., 621; 25 Apr., 913; 23 May, 1263; 20 June, 1416; 18 July, 111; 19 Sept., 627; 17 Oct., 866
Labline, Inc., Chicago Surgical & Electrical Co. Div.

1958: 2 May, 1069; 29 Aug., 438

Little, Arthur D., Inc., Engineering Div.

1957: 25 Oct., 784

Lourdes Instrument Corp.

1957: 25 Oct., 775

1958: 24 Jan., 171; 7 Mar., 534; 25 Apr., 924; 26 Sept., 725

24 OCTOBER 1958

Two superb microscopes

WILD M 20

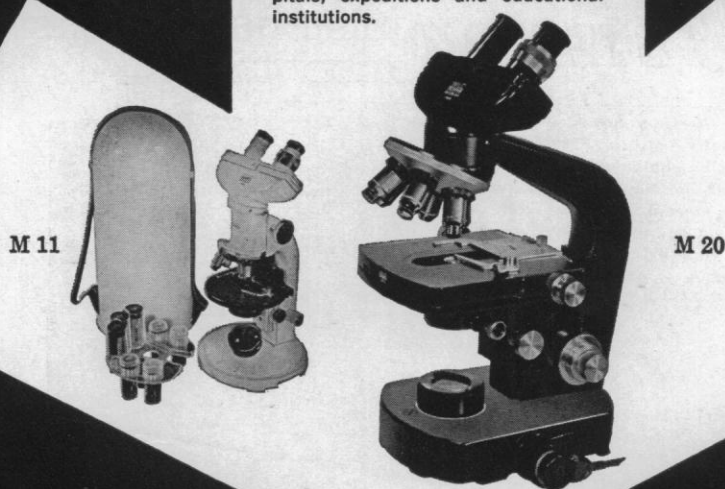
Meets the very highest requirements for research and scientific exploration, and provides unmatched versatility in many fields of microscopy.

Features include sextuple revolving nosepiece if desired • 20 Watt built-in illumination • beam splitting phototube for binocular focusing for photomicrography • phase contrast plus a complete line of attachments for every observation method.

WILD M 11

A highly precise instrument, ideal for the laboratory and many research applications.

Lightweight, easily portable and self-protected by the sturdy steel hood, the Wild M 11 offers a degree of versatility and precision far beyond its price and size. Outstanding optics, low-placed fine adjustment, easily interchangeable accessories and many other features make this a most noteworthy instrument for hospitals, expeditions and educational institutions.



DETAILED DESCRIPTIONS AND TECHNICAL DATA ARE GIVEN
IN BOOKLETS M 20 AND M 11. WRITE FOR YOUR COPIES TODAY!

WILD HEERBRUGG INSTRUMENTS, inc.

Main at Covert Streets • Port Washington, N.Y. POrt Washington 7-4843
SALES • FULL FACTORY SERVICES

Sorvall, Ivan, Inc.

1957: 25 Oct., 791; 6 Dec., 1155
1958: 24 Jan., 207; 21 Feb., 370; 28 Mar., 670; 25 Apr., 918; 23 May, 1208; 20 June, 1415; 18 July, facing 136; 22 Aug., 384; 26 Sept., 690
Standard Scientific Supply Corp.
1957: 25 Oct., 876

CENTRIFUGE ACCESSORIES

American Hospital Supply Corp., Scientific Products Div.
1958: 15 Aug., 329
Beckman Instruments, Inc., Spinco Div.
1957: 25 Oct., 785; 6 Dec., 1147
1958: 17 Oct., 862
Corning Glass Works
1958: 2 May, 1079
International Equipment Co.
1958: 20 June, 1416; 18 July, 111
Lourdes Instrument Corp.
1957: 25 Oct., 775
1958: 7 Mar., 534; 25 Apr., 924
Nalge Co., Inc.
1958: 25 Apr., 914; 18 July, 158
Standard Scientific Supply Corp.
1957: 25 Oct., 876

CHARTS, BIOLOGICAL

Welch, W. M., Manufacturing Co.
1957: 6 Dec., 1189

CHEMICALS, BIOLOGICAL

Arapahoe Chemicals, Inc.
1957: 25 Oct., 861

Borden Co., Chemical Div.

1958: 24 Jan., 204; 21 Feb., 430; 7 Mar., 532; 25 Apr., 993; 23 May, 1260; 17 Oct., 919

California Corporation for Biochemical Research

1958: 18 July, 108; 29 Aug., 491

Clinton Laboratories

1957: 25 Oct., 889
1958: 11 July, 98

Difco Laboratories

1957: 25 Oct., 857; 22 Nov., 1077; 20 Dec., 1303

1958: 17 Jan., 159; 14 Feb., 355; 14 Mar., 609; 2 May, 1071; 30 May, 1300; 25 July, 215; 22 Aug., 431; 19 Sept., 675; 17 Oct., 919

Isotopes Specialties Co., Inc.

1958: 17 Jan., 165; 7 Mar., 532

Mann Research Laboratories, Inc.

1958: 28 Feb., 481; 28 Mar., 713; 25 Apr., 987; 23 May, 1259; 26 Sept., 731

Nutritional Biochemicals Corp.

1957: 25 Oct., 853; 8 Nov., 952; 22 Nov., 1081; 6 Dec., 1189; 20 Dec., 1304

1958: 3 Jan., 41; 17 Jan., 110; 31 Jan., 251; 14 Feb., 358; 28 Feb., 446; 14 Mar., 611; 28 Mar., 709; 11 Apr., 827; 25 Apr., 991; 9 May, 1132; 23 May, 1253; 6 June, 1351; 20 June, 1455; 4 July, 39; 18 July, 159; 1 Aug., 264; 15 Aug., 375; 29 Aug., 487; 12 Sept., 616; 26 Sept., 724; 10 Oct., 851

Pabst Brewing Co., Pabst Laboratories Div.

1957: 1 Nov., 902

Schwarz Laboratories, Inc.

1957: 25 Oct., 851; 15 Nov., 1027; 6 Dec., 1191; 27 Dec., 1355

1958: 24 Jan., 201; 21 Feb., 417; 7 Mar., 547; 16 May, 1186; 20 June, 1457; 18 July, 160; 29 Aug., 485; 5 Sept., 543; 17 Oct., 913

Sigma Chemical Co.

1957: 6 Dec., 1195
1958: 10 Jan., 99; 14 Feb., 355; 14 Mar., 615; 25 Apr., 997; 9 May, 1124; 23 May, 1259; 20 June, 1449; 18 July, 155; 15 Aug., 373; 12 Sept., 609; 10 Oct., 854, 855

Winthrop Laboratories

1957: 25 Oct., 875; 29 Nov., 1129
1958: 14 Feb., 348; 21 Mar., 657; 25 Apr., 1000; 30 May, 1295; 11 July, 94

Worthington Biochemical Co.

1957: 25 Oct., 794

CHEMICALS, GENERAL

Borden Co., Chemical Div.

1958: 24 Jan., 204; 25 Apr., 993

Foote Mineral Co.

1958: 28 Feb., 444; 28 Mar., 671; 23 May, 1205; 11 July, 53; 19 Sept., 625

Harshaw Chemical Co.

1957: 25 Oct., 877; 15 Nov., 1033; 6 Dec., 1211

1958: 10 Jan., 97; 21 Feb., 421; 16 May, 1189; 15 Aug., 367; 19 Sept., 671

Isomet Corp.

1958: 21 Feb., 419; 7 Mar., 548

LaMotte Chemical Products Co.

1957: 25 Oct., 872

Lithium Corporation of America, Inc.

1957: 25 Oct., 788

Mallinckrodt Chemical Works

1958: 25 Apr., 905; 8 Aug., 271; 3 Oct., 743

Schwarz Laboratories, Inc.

1958: 16 May, 1186

Scientific Glass Apparatus Co., Inc.

1957: 25 Oct., 880

Sigma Chemical Co.

1958: 9 May, 1124

Thomas, Arthur H., Co.

1958: 1 Aug., 268

Weizmann Institute of Science, Isotope Dept.

1958: 25 Apr., 999; 16 May, 1190; 13 June, 1398; 11 July, 100; 15 Aug., 368; 12 Sept., 606

CHEMICALS, ORGANIC

Arapahoe Chemicals, Inc.

1958: 25 Apr., 1009

Harshaw Chemical Co.

1958: 21 Mar., 651; 18 Apr., 885; 16 May, 1189; 15 Aug., 367

CHEMICALS, TRACER

Radiochemical Centre

1958: 18 July, 167; 15 Aug., 375; 12 Sept., 605

Research Specialties Co.

1957: 29 Nov., 1132; 6 Dec., 1205
1958: 17 Jan., 110; 16 May, 1199; 5 Sept., 541

Schwarz Laboratories, Inc.

1957: 15 Nov., 1027; 6 Dec., 1191
1958: 24 Jan., 201; 11 Apr., 821; 16 May, 1186; 20 June, 1457; 18 July, 160; 17 Oct., 913



from plan to working lab...overnight with
STEELAB interchangeable
modules

NOW—from any point in the country—you can order STEELAB quality equipment right off-the-shelf for immediate delivery. This means that you can set up an operating lab... exactly to your liking, floor plan and budget... virtually overnight.



SECTIONAL
CABINETS • SINKS • TABLES • FUME HOODS
DESKS • FIXTURES AND ACCESSORIES
Immediate Delivery from Warehousing Distributors
Braun Chemical Company Harshaw Scientific
Braun-Knecht-Heimann Co. Arthur S. La Pine & Co.
Scientific Supplies Co.
plus Field Representatives listed in your classified directory

HUNDREDS OF COMBINATIONS TO CUSTOM-FIT ANY LAB
Write or Call Today for FREE Catalog No. W8-S and "Module Planning Kit"

LABORATORY FURNITURE CO., INC.
MINEOLA, LONG ISLAND, NEW YORK • PHONE: PIONEER 2-3600
Since 1920 — Over 50,000 Installations



*Packaged
Reliability*

from
**COLORADO
SERUM CO.**

If your laboratory and research needs include animal bloods and serums, hemolysin or complements, you can order with confidence from Colorado Serum Co.

35 years of serum production experience, constant research and testing, devotion to product quality, and the maintenance of our own animals insure you that Reliability is included in your order from Colorado Serum Co.

WRITE FOR FREE CATALOG TODAY →

No salesman will call.



COLORADO SERUM CO.



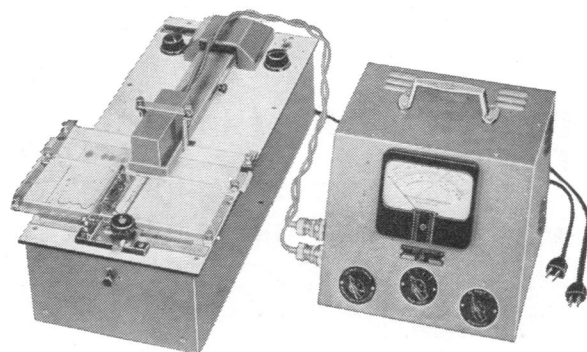
Laboratory and General Office

PEAK OF QUALITY

4950 YORK STREET • DENVER 16, COLORADO • MAin 3-5373

PHOTOVOLT Densitometer

for Partition Chromatography
and Paper Electrophoresis



A photoelectric precision instrument for the rapid and convenient evaluation of strips and sheets of filter paper in partition chromatography and paper electrophoresis.

Write for Bulletin #800 to

PHOTOVOLT CORP.

95 Madison Avenue

New York 16, N. Y.

Also

Colorimeters

Fluorimeters

Nephelometers

pH meters

Reflection Meters

Glossmeters

Electronic Photometers

Multiplier Photometers

Interference Filters

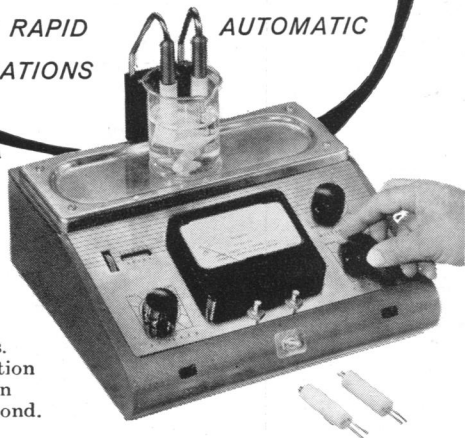
CENCO® COULOMETRIC TITRATOR

FOR RAPID
TITRATIONS

AUTOMATIC

Measures both mercaptans and olefins accurately . . . automatically. Simple to operate. Titrates wide range of concentrations. Registers reaction time directly in tenths of a second.

Write for
Bulletin 1264A.



Licensed under patent rights Standard Oil Co. (Ind.)



CENTRAL SCIENTIFIC CO.

1718-Mirving Park Road • Chicago 13, Illinois
Branches and Warehouses — Mountinside, N. J.
Boston • Birmingham • Santa Clara • Los Angeles • Tulsa
Houston • Toronto • Montreal • Vancouver • Ottawa

dI-ARTERENOL HCl
I-ARTERENOL BITARTRATE
(norepinephrine)
I-EPINEPHRINE BITARTRATE

Also the Corresponding
META-METHYL ETHERS:

dI-METANEPHRINE HCl
and
dI-NORMETANEPHRINE HCl

Available Now For
Laboratory Investigation
And Analytical Standards

SPECIAL CHEMICALS DEPT.

Winthrop
LABORATORIES

1450 Broadway,
N.Y. 18, N.Y.

MODERN MATERIALS

Advances in Development and Applications

Edited by HENRY H. HAUSNER

Volume 1, September 1958, 402 pp., illus., \$12.50

ELECTRONIC DIGITAL COMPUTERS

Their Use in Science and Engineering

By F. L. ALT

August 1958, 336 pp., illus., \$10.00

PROGRAMMING FOR AN AUTOMATIC DIGITAL CALCULATOR

By KATHLEEN H. V. BOOTH

April 1958, 238 pp., illus., \$7.50

MECHANICAL RESOLUTION OF LINGUISTIC PROBLEMS

By A. D. BOOTH, L. BRANDWOOD, and J. P. CLEAVE

February 1958, 306 pp., illus., \$9.80

NUMERICAL METHODS

Second Edition

By A. D. BOOTH

1957, 195 pp., illus., \$6.50

AUTOMATIC DIGITAL CALCULATORS

Second Edition

By A. D. BOOTH and KATHLEEN H. V. BOOTH

1956, 261 pp., illus., \$6.00

RESEARCH FILMS

in Biology, Anthropology, Psychology, and Medicine

By ANTHONY R. MICHAELIS

1955, 490 pp., illus., \$10.00



Detailed literature available upon request

ACADEMIC PRESS INC.

111 Fifth Avenue, New York 3, New York

CHROMATOGRAPHY EQUIPMENT

Angel, H. Reeve, & Co., Inc.

1957: 6 Dec., 1148

Beckman Instruments, Inc., Scientific Instrument Div.

1958: 13 June, 1367; 8 Aug., 270; 26 Sept., 686

California Laboratory Equipment Co.

1958: 11 Apr., 823; 9 May, 1123; 1 Aug., 264

Central Scientific Co.

1958: 7 Mar., 490; 25 July, 215; 5 Sept., 546

Eaton-Dikeman Co.

1958: 16 May, 1194

Labline, Inc.

1957: 25 Oct., 881; 29 Nov., 1127

New York Laboratory Supply Co., Inc.

1958: 21 Feb., 424

Nuclear-Chicago Corp.

1958: 4 Apr., 724; 23 May, 1264

Nuclear Corporation of America, NRD Instrument Co. Div.

1958: 27 June, 1515

Packard Instrument Co.

1958: 10 Jan., 98; 7 Mar., 538; 11 July, 99; 5 Sept., 552; 3 Oct., 790

Photovolt Corp.

1957: 22 Nov., 1081; 13 Dec., 1255

1958: 3 Jan., 41; 7 Feb., 299; 14 Mar., 615; 9 May, 1132; 27 June, 1507; 25 July, 211; 15 Aug., 367; 5 Sept., 545; 19 Sept., 671

Research Specialties Co., Reco Div.

1957: 22 Nov., 1077

1958: 14 Mar., 610; 18 Apr., 888; 4 July, 38; 1 Aug., 260; 26 Sept., 729

Scientific Glass Apparatus Co.

1957: 22 Nov., 1048

1958: 21 Feb., 372

Thomas, Arthur H., Co.

1958: 6 June, 1360

CLEANING EQUIPMENT

Aloe, A. S., Co., Aloe Scientific Div.

1958: 3 Oct., 785; 17 Oct., 919

Branson Ultrasonic Corp.

1958: 17 Oct., 918

Fisher Scientific Co.

1958: 9 May, 1128

Narda Ultrasonics Corp.

1958: 10 Jan., 99; 14 Mar., 615; 25 Apr., 1005; 16 May, 1189; 9 Sept., 677

CLEANSERS

Alconox, Inc.

1958: 19 Sept., 680

American Hospital Supply Corp.,

Scientific Products Div.

1958: 21 Feb., 374

Linbro Chemical Co.

1957: 25 Oct., 855; 6 Dec., 1197

1958: 10 Jan., 97; 21 Feb., 427; 14 Mar., 609; 25 Apr., 1009

Meinecke & Co., Inc.

1958: 14 Feb., 353; 11 Apr., 825; 20 June, 1458; 15 Aug., 372; 12 Sept., 613; 10 Oct., 848

COLORIMETERS

Bausch & Lomb Optical Co.

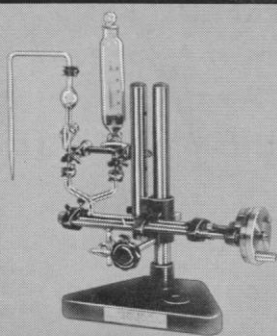
1957: 8 Nov., 956

1958: 9 May, 1090; 1 Aug., 226

New York Laboratory Supply Co., Inc.

1958: 7 Mar., 539

SCIENTIFIC INDUSTRIES ULTRA-BURET



A NEW INSTRUMENT THAT GIVES YOU . . .

- **PRECISE CONTROL OVER ULTRA-MICRO QUANTITIES**—Markings to .001 ml.; can be read to .0001 ml.
- **HIGH CAPACITY**—up to 7 ml. without refilling. Ultra-micro and macro.
- **EASY READING ON CALIBRATED WHEEL**—No meniscus; simple reset to zero to start each titration.
- **INSTANT SPEED ADJUSTMENT**—Perfect control without use of valves or stopcocks. Just turn the wheel.

Take Advantage of our
30 Day Test in your Laboratory
Ask your Laboratory Supply
Dealer for particulars . . . or
write for Descriptive Bulletin!

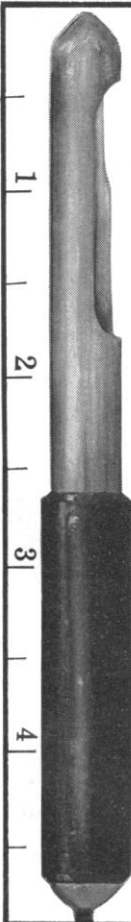
SCIENTIFIC INDUSTRIES, INC.

27 Park Street Springfield 3, Mass.

NEW SMALL SOURCE Ultra-Violet

pencil type lamp

3/8" in diameter, 4-6" in length



8 models, ideal for far U.V.
examination of small areas.

High intensity, suitable for
collimator use and laboratory
instrumentation applications.

Also, complete line of near
and far ultra-violet lamps
4-100 watts available in
various sizes and models.

For specific information
please write: dept. S-1

ULTRA-VIOLET PRODUCTS INC.
San Gabriel, California

COMBUSTION APPARATUS

Thomas, Arthur H., Co.
1958: 21 Feb., 440

COMPUTING INSTRUMENTS

Philbrick, George A., Researches, Inc.
1958: 9 May, 1088

CONDENSERS

Ace Glass, Inc.
1958: 6 June, 1350

CRUCIBLES

Ace Glass Inc.
1958: 11 Apr., 825

CURRENT INTEGRATOR

Eldorado Electronics
1958: 9 May, 1120; 12 Sept., 612

DENSITOMETERS

Photovolt Corp.
1957: 22 Nov., 1081; 13 Dec., 1255
1958: 3 Jan., 41; 7 Feb., 299; 14 Mar., 615; 9 May, 1132; 27 June, 1507; 25 July, 211; 15 Aug., 367; 5 Sept., 545; 19 Sept., 671

DESALTERS

Research Specialties Co., Reco Div.
1957: 20 Dec., 1303
1958: 24 Jan., 199; 28 Mar., 713
Scientific Glass Apparatus Co.
1957: 22 Nov., 1048

DESICCATORS

Ace Glass, Inc.
1958: 9 May, 1126; 29 Aug., 482
Phipps & Bird, Inc.
1957: 22 Nov., 1079

DIALYZERS

Oxford Laboratories
1957: 25 Oct., 863

DIFFRACTION GRATINGS

Farrand Optical Co., Inc.
1957: 25 Oct., 795
1958: 13 June, 1397; 15 Aug., 373

DIFFRACTOMETERS

Philips Electronics, Inc., Instruments Div.
1957: 6 Dec., 1140

DOSIMETERS

Cambridge Instrument Co., Inc.
1958: 3 Oct., 785

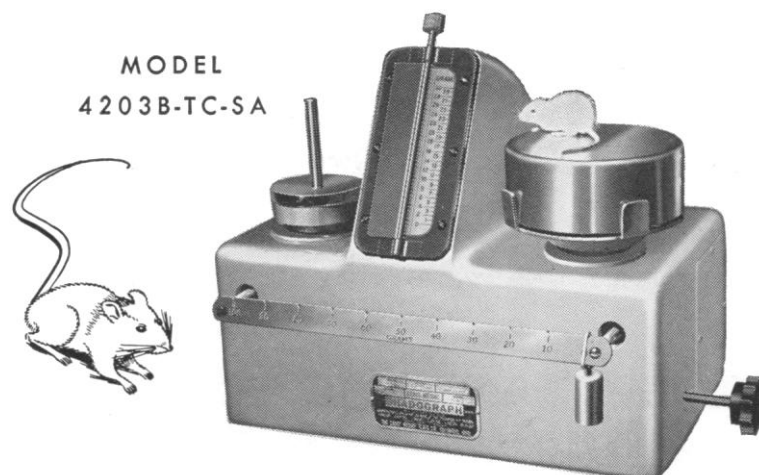
DRILLS

Scott-Mitchell House, Inc.
1958: 26 Sept., 730

ELECTROMETERS

Applied Physics Corp.
1957: 25 Oct., 873; 6 Dec., 1193
1958: 25 Apr., 989; 22 Aug., 427
Atomic Accessories, Inc.
1957: 25 Oct., 890
Cambridge Instrument Co.
1957: 25 Oct., 869

Positive stop readings in 1.13 seconds



SHADOGRAPH®

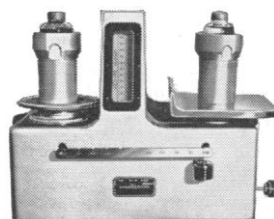
small animal balance provides
visible accuracy to 350 milligrams

Model 4203B-TC-SA Shadograph is designed especially for high-speed, precision weighing of mice, chicks, frogs and small rats. It can reduce tedious weighing operations by hours . . . give you more time for other work. Light-projection indication is fast . . . provides sharp shadow-edge reading on frosted glass dial. Parallax reading eliminated. Capacity 1500 grams. Dial graduated in two columns: 0-30 grams and 15-45 grams. Shutter closes dial column not in use. Beam 100 grams in 1 gram graduations. Weighs accurately in out-of-level positions. Other models up to 3 kilos for rats, hamsters and guinea pigs.



TISSUE AND TUMOR BALANCE

Model 4142 recommended for fast, precision weighing of cancer tissue and tumors. Weighpan is shielded from air currents by clear plastic door . . . easily removed for sterilization. Rated capacity 15 grams; visible sensitivity to 5 milligrams. Movable viewer for 5-column dial, each column 3 grams with 5 milligram graduations. 5-notch beam corresponding to dial columns.



CENTRIFUGE BALANCE

Model 4206B-TC also for general laboratory use and small-animal weighing. Has tare control knob to zero the dial, or position for over-and-under reading. Capacity 3 kilos; sensitivity to 350 milligrams. Dial is graduated 0-100 grams in increments of 1 gram. Beam 500 grams by 5 grams.

THE EXACT WEIGHT SCALE CO.
901 W. FIFTH AVE., COLUMBUS 8, OHIO
In Canada: P.O. Box 179, Station S, Toronto 18, Ont.

Sales and Service Coast to Coast



Nuclear-Chicago Corp.

1958: 21 Mar., 664; 25 Apr., 900; 20 June, 1464

ELECTROPHORESIS APPARATUS**Beckman Instruments, Inc., Spinco Div.**

1957: 8 Nov., 946

1958: 28 Mar., 668; 11 Apr., 782; 23 May, 1207; 15 Aug., 380; 29 Aug., 441

Eaton-Dikeman Co.

1958: 16 May, 1194

E-C Apparatus Co.

1957: 25 Oct., 853

Kern Co.

1957: 25 Oct., 857

Klett Manufacturing Co.

1957: 25 Oct., 875; 1 Nov., 943; 8

Nov., 952; 15 Nov., 1036; 22 Nov., 1079; 29 Nov., 1129; 6 Dec., 1197; 13 Dec., 1255; 20 Dec., 1305; 27 Dec., 1357

1958: 3 Jan., 41; 10 Jan., 100; 17 Jan., 159; 24 Jan., 206; 31 Jan., 251; 7 Feb., 299; 21 Feb., 427; 28 Feb., 446; 7 Mar., 536; 14 Mar., 609; 21 Mar., 657; 28 Mar., 709; 4 Apr., 763; 11 Apr., 827; 18 Apr., 885; 25 Apr., 1000; 2 May, 1071; 9 May, 1129; 16 May, 1193; 23 May, 1260; 30 May, 1295; 6 June, 1354; 13 June, 1403; 27 June, 1514; 4 July, 39; 11 July, 98; 18 July, 155; 25 July, 216; 1 Aug., 259; 8 Aug., 315; 15 Aug., 373; 22 Aug., 431; 29 Aug., 484; 5 Sept., 546; 12 Sept., 611; 19 Sept., 677; 26 Sept., 728; 3 Oct., 783; 10 Oct., 855; 17 Oct., 919

Labline, Inc.

1957: 25 Oct., 881; 29 Nov., 1127

Laboratory Glass & Instruments Corp.

1958: 25 Apr., 908

New York Laboratory Supply Co., Inc.

1958: 21 Feb., 424

Perkin-Elmer Corp., Instrument Div.

1957: 25 Oct., 789

Phipps & Bird, Inc.

1957: 8 Nov., 987

1958: 25 Apr., 1005

Photovolt Corp.

1957: 25 Oct., 877; 8 Nov., 985; 22 Nov., 1081; 6 Dec., 1205; 13 Dec., 1255

1958: 3 Jan., 41; 31 Jan., 251; 7 Feb., 299; 21 Feb., 433; 14 Mar., 615; 21 Mar., 657; 18 Apr., 885; 9 May, 1132; 23 May, 1251; 20 June, 1455; 27 June, 1507; 18 July, 167; 25 July, 211; 15 Aug., 367; 22 Aug., 431; 5 Sept., 545; 19 Sept., 671

Scientific Glass Apparatus Co.

1958: 21 Feb., 372

EVAPORATORS**Laboratory Glass & Instruments Corp.**

1958: 25 Apr., 908; 25 July, 170

Phipps & Bird, Inc.

1958: 13 June, 1401

FALLING DROP APPARATUS**Polarad Electronics Corp.**

1957: 6 Dec., 1208

1958: 6 June, 1349

FILM BADGES**Controls for Radiation, Inc.**

1958: 24 Jan., 203; 7 Feb., 297; 7 Mar., 546; 9 May, 1124; 23 May, 1251; 13 June, 1399; 18 July, 164; 10 Oct., 848

FILMS, EDUCATIONAL**Moody Institute of Science**

1957: 6 Dec., 1209

FILTERS**Ace Glass, Inc.**

1958: 11 Apr., 825

Baird-Atomic, Inc.

1958: 18 Apr., 884

Barnstead Still & Demineralizer Co.

1957: 25 Oct., 872

Dell Optics Co., Ltd.

1958: 18 Apr., 889

FILTERS, INTERFERENCE**Axler Associates, Inc.**

1958: 25 Apr., 1002

Bausch & Lomb Optical Co.

1958: 3 Jan., 8

Baird-Atomic, Inc.

1958: 18 Apr., 884

Farrand Optical Co., Inc.

1957: 15 Nov., 1029; 6 Dec., 1208

Fish-Schurman Corp.

1957: 6 Dec., 1192

Photovolt Corp.

1958: 30 May, 1295; 11 July, 97; 29 Aug., 487; 10 Oct., 851

FILTER PAPER**Ace Glass, Inc.**

1957: 25 Oct., 850

Angel, H. Reeve, & Co., Inc.

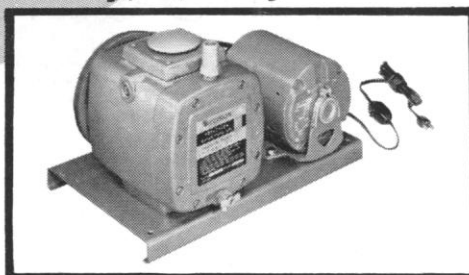
1957: 6 Dec., 1148

PRODUCES HIGH VACUUM

Quickly, Efficiently, Quietly!

... and it's a real space-saver, too!

This new mechanical two-stage vacuum pump is so compact and streamlined that it requires a minimum of space. When mounted, the overall dimensions are only 10¼" high x 11¼" wide x 16½" long. Capacity: 75 liters per minute. Ultimate vacuum: 0.1 micron or better! Operating speed: 600 rpm. Uses very little oil. Write for details.

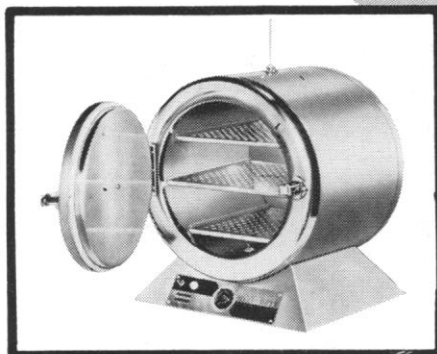


New "Precision" Model 75 Vacuum Pump

P-9135X Pump and Drive complete with standard equipment, for 110/120 volt, 60 cycle, A.C. Price **\$265.00**

NO COLD CORNERS . . .

with the "Circ-O-Therm" Oven



New "Hevi-Duty" Model HK Oven

Temperatures to 250° C.

Variations held within 1° C.

It takes less than an hour, with only a 600-watt input, to raise the temperature from room to 200° C. with this new, fully insulated oven. Features include: improved temperature uniformity . . . low-cost operation . . . durable double-wall construction . . . excellent temperature control . . . proper ventilation. *Bulletin S-458 sent on request.*

O-7000X "Circ-O-Therm" Oven complete with three removable aluminum shelves. Working chamber 15" dia. x 13" deep. Enamelled steel outer shell. For 115 or 230 volts, 60 cycles, A.C. Price **\$169.00**



SCIENTIFIC GLASS
APPARATUS CO., INC.
BLOOMFIELD, NEW JERSEY

- apparatus
- instruments
- chemicals
- glassware

GUARANTEED STUDENT MICROSCOPES



CHICAGO, U.S.A.

NEW DESIGN
EXCLUSIVE
SAFETY FEATURES
HIGH QUALITY OPTICS
10X OCULAR
OBJECTIVES

16mm (10X) N.A. 0.27
4mm (44X) N.A. 0.66

TEN YEAR GUARANTEE
TRANSPORTATION
INCLUDED

*Write for catalogue
listing safety features*

MODEL GB2A

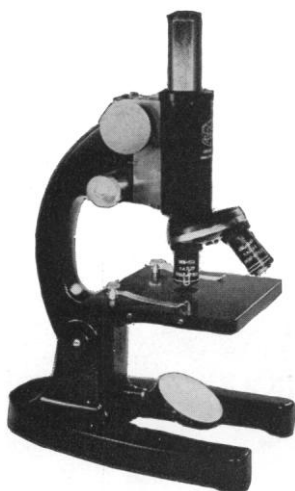
List price \$117.00 ea.

Quantities of 5 or more \$105.30 ea.

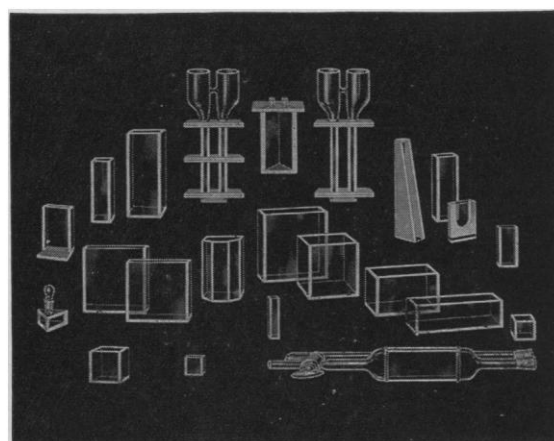
THE GRAF-APSCO CO.

5868 BROADWAY

CHICAGO 40, ILL.



GLASS ABSORPTION CELLS made by KLETT



Makers of Complete Electrophoresis Apparatus

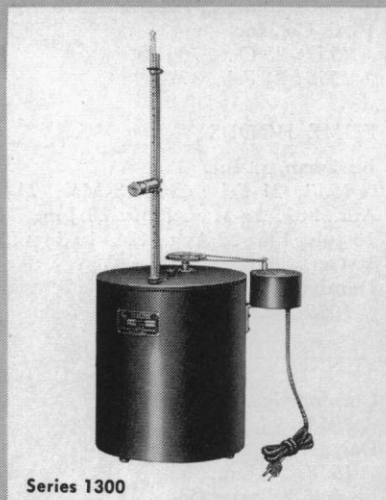
SCIENTIFIC APPARATUS
Klett-Summerson Photoelectric Colorimeters—
Colorimeters—Nephelometers—Fluorimeters—
Bio-Colorimeters—Comparators—Glass Stand-
ards—Klett Reagents.

Klett Manufacturing Co.

179 East 87 Street, New York, New York

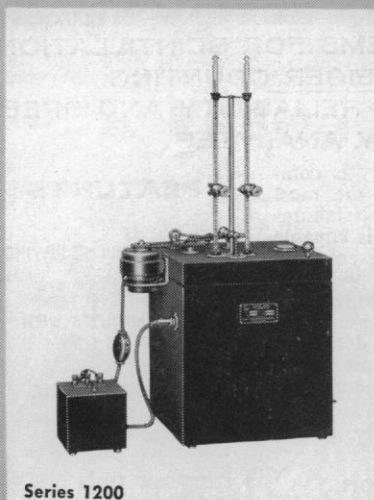
PARR Calorimeters

... For determining the heat of
combustion of solid and liquid fuels



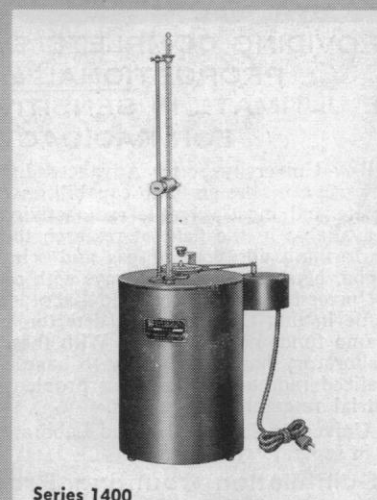
Series 1300

PLAIN TYPE with non-metallic, dead-air insulating jacket. Can be equipped with either single or double valve, Parr self-sealing oxygen bombs. Excellent for routine tests of coal, petroleum products and foodstuffs, also for student instruction in calorimetry.



Series 1200

ADIABATIC TYPE with brass water jacket enclosed in plastic veneered wood case. Can be equipped with any of several Parr self-sealing oxygen bombs. Suitable for either adiabatic or isothermal operation. Widely used for both routine and research calorimetry.



Series 1400

PEROXIDE BOMB type uses sodium peroxide powder instead of oxygen. Non-metallic, dead-air insulating jacket is similar to Series 1300. Recommended for routine tests of coal, coke and certain petroleum products, especially where compressed oxygen is not readily available.

PARR INSTRUMENT CO.
MOLINE, ILLINOIS

Ask your Parr Dealer or write direct
for complete information and prices.

Eaton-Dikeman Co.
1958: 16 May, 1194
Fisher Scientific Co.
1957: 25 Oct., 779
New York Laboratory Supply Co., Inc.
1958: 7 Mar., 539
Thomas, Arthur H., Co.
1958: 6 June, 1360

FLASKS

Ace Glass, Inc.
1958: 1 Aug., 258
Bellco Glass, Inc.
1957: 6 Dec., 1192
1958: 31 Jan., 251
Corning Glass Works
1957: 6 Dec., 1153

Nalge Co., Inc.
1957: 27 Dec., 1356
Palo Laboratory Supplies, Inc.
1958: 25 July, 211

FLUOROMETERS

Biddle, James G., Co.
1957: 25 Oct., 885
Coleman Instruments, Inc.
1957: 25 Oct., 886
1958: 27 June, 1509; 10 Oct., 847
Farrand Optical Co., Inc.
1958: 17 Jan., 159; 21 Feb., 415; 21 Mar., 651; 5 Sept., 544
Photovolt Corp.
1957: 29 Nov., 1129
1958: 10 Jan., 97; 28 Feb., 481; 28

Mar., 713; 11 Apr., 827; 13 June, 1404;
1 Aug., 261; 12 Sept., 609; 7 Oct., 909

FRACTIONATORS

E-C Apparatus Co.
1957: 25 Oct., 889
Gilson Medical Electronics
1958: 5 Sept., 494

FRACTION COLLECTORS

Aloc, A. S., Co., Aloc Scientific Div.
1958: 6 June, 1351
Microchemical Specialties Co.
1958: 6 June, 1347
National Instrument Laboratories, Inc.
1957: 25 Oct., 861
Packard Instrument Co.
1957: 6 Dec., 1201
1958: 10 Jan., 98; 7 Mar., 538; 6 June, 1355; 11 July, 99; 5 Sept., 552; 3 Oct., 790
Research Specialties Co.
1957: 25 Oct., 879; 8 Nov., 987; 13 Dec., 1257
1958: 10 Jan., 96; 31 Jan., 250; 23 May, 1256; 25 July, 210; 19 Sept., 676
Schaar and Co.
1958: 21 Feb., 433
Scientific Glass Apparatus Co.
1957: 22 Nov., 1048

FREEZING EQUIPMENT

American Hospital Supply Corp., Scientific Products Div.
1958: 25 Apr., 916
American Instrument Co., Inc.
1957: 25 Oct., 887
1958: 9 May, 1121
Fisher Scientific Co.
1957: 15 Nov., 1035
National Research Corp., NRC Equipment Corp.
1958: 26 Sept., 724; 3 Oct., 787
Virtis Co., Inc.
1957: 25 Oct., 786
1958: 21 Feb., 377

FUME HOODS

Blickman, S., Inc.
1958: 21 Feb., 436; 28 Mar., 714; 18 Apr., 889; 23 May, 1255; 20 June, 1458; 18 July, 156; 22 Aug., 424; 19 Sept., 678; 10 Oct., 853
Duralab Equipment Corp.
1958: 3 Oct., 791

FUNNELS

Corning Glass Works
1958: 3 Jan., 5
Daigger, A., & Co.
1958: 31 Jan., 255
Fischer & Porter Co.
1958: 24 Jan., 173; 21 Feb., 367
Nalge Co., Inc.
1958: 16 May, 1188

FURNACES

Consolidated Electrodynamics Corp., Rochester Div.
1958: 25 Apr., 1011
Pereny Equipment Co.
1957: 1 Nov., 940; 29 Nov., 1127; 27 Dec., 1357
Scientific Glass Apparatus Co., Inc.
1958: 12 Sept., 608

A new

ADVANCED RADIOACTIVITY ANALYSIS LABORATORY



Baird-Atomic University Series ADVANCED LABORATORY

PROVIDING COMPLETE SYSTEMS FOR SCINTILLATION, PROPORTIONAL and GEIGER COUNTING
THE ULTIMATE IN SENSITIVITY, RELIABILITY AND SPEED FOR RADIOACTIVITY ANALYSES

The B-A University Series Advanced Laboratory is completely new in design and capabilities and is the most complete and most versatile radioactivity analysis laboratory available in the field of research today. It is capable of performing all types of gas and scintillation counting of alpha, beta, gamma and x-rays with ease and precision. The University Series Advanced Laboratory is completely versatile in that three different detectors can be used with the same fundamental system. With these three detectors, the laboratory has the capacity to handle the most highly specialized radioactivity analysis problems encountered in industrial research applications.

The University Series Advanced Laboratory is also available in separate systems for:

Scintillation Counting, Proportional Counting, Geiger Counting

Add the following accessories to provide complete facilities for all researchers: B-A Model 410 Count Rate Meter and Geiger Tube, the 1225 Beta Sources, 1230 Gamma Sources, LC2 Carrying Case, and the Model 414 Single Scale Logarithmic Gun type survey meter.

FEATURES

- 1 MICROSECOND RESOLVING TIME
- BUILT-IN AMPLIFIER WITH SENSITIVITY OF 1 MV
- SEPARATE SUPER-STABLE HV POWER SUPPLY (5000 V. optional)
- ELECTRONIC TIMER
- 6-DECADE COUNTING CAPACITY, ALL ELECTRONIC
- PREMIUM COMPONENTS FOR RELIABILITY

Baird-Atomic, Inc.

33 UNIVERSITY RD., CAMBRIDGE 38, MASS.



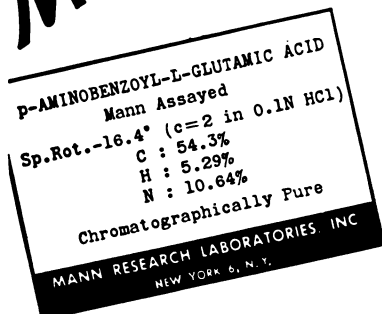
Instrumentation for Better Analysis

ONLY

Mann Assayed

BIOCHEMICALS

**EVERY PRODUCT ANALYZED
EVERY ANALYSIS ON THE LABEL**



**TYPICAL
ANALYSIS**

**WRITE FOR REFERENCE GUIDE AND PRICE
LIST 123 CONTAINING COMPLETE
SPECIFICATIONS OF EACH PRODUCT.**

AMINO ACIDS • PEPTIDES • FATTY ACIDS • ENZYMES
COENZYMES • ANTI-METABOLITES • PYRIMIDINES
CARBOHYDRATES • HORMONES • NUCLEO PROTEINS
VITAMINS • PURINES • HORMONE INTERMEDIATES
PLANT GROWTH HORMONES • MISC. BIOCHEMICALS



**MANN RESEARCH
LABORATORIES, INC.**

134 E. Liberty Street, New York 6, N. Y. • Blakeman 3-3165

**CALIBRATED
DISPENSERS**

for Rapid and Repeated
Delivery of Accurate
Volumes of Liquid

SIMPLE TO USE



1. Tip back to fill reservoir.



2. Tip forward to dispense.

...accuracy to within $\pm 1\%$.
...measurement is automatic,
therefore accurate and rapid.

Examples of Use

Accurate filling of ampules, vials,
and test tubes.

Making serial determinations.

Pipetting serological test reagents.

Adding chloroform, strong acids,
cyanide solutions, and solvents.

Making up water blanks, or other
media.

For delivery of known amounts
of Kjeldahl buffers.

Write for Brochure D.

Also Available—

*Special Apparatus for Paper Strip
Chromatography*

Improved Reagent Sprayers

Write for Brochure A

manufacturer

CALIF. LABORATORY EQUIP. CO.

98 RINCON ROAD • BERKELEY 7 • CALIFORNIA

• Practical • Simple Design • General Utility
Welch TWO-STAGE DUO-SEAL VACUUM PUMP

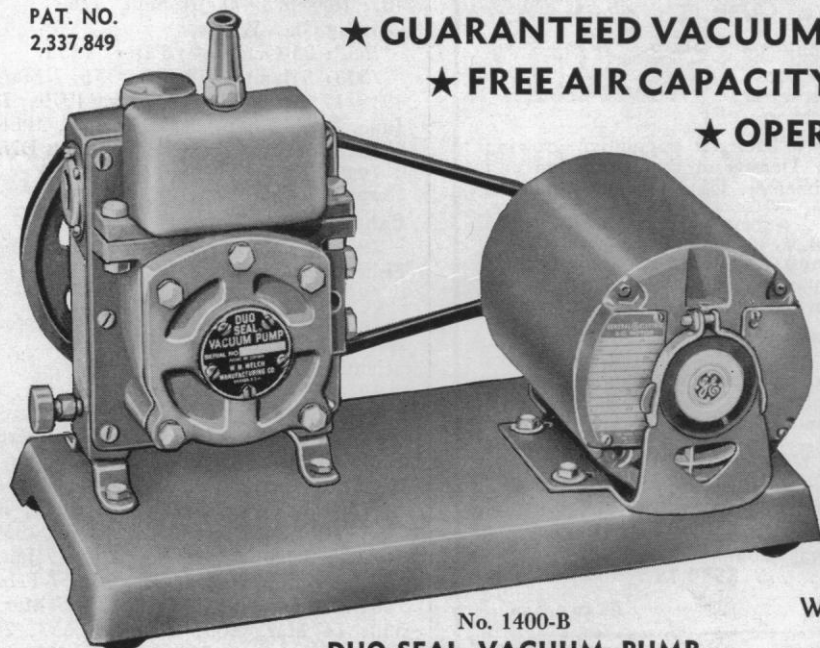
• Quiet • Durable • Efficient • Economical

PAT. NO.
2,337,849

★ GUARANTEED VACUUM—0.1 Micron (.0001 mm Hg)

★ FREE AIR CAPACITY—21 Liters Per Minute

★ OPERATING SPEED 450 R.P.M.



No. 1400-B
DUO-SEAL VACUUM PUMP
Motor Driven

VISIBLE OIL LEVEL

No Splash — No Oil Back-up

MOTOR 1/3 HP—1725 RPM

Overall Dimensions of Mounted Pump

17 $\frac{1}{8}$ x 10 $\frac{1}{2}$ x 12 $\frac{5}{8}$ inches high

BELT-TIGHTENING Provision

EXTRA SUPPLY of Duo-Seal Oil

Complete with Motor

PRICE \$133.00

Totally Enclosed Belt Guard for 1400B Pump
\$15.00

W. M. WELCH SCIENTIFIC COMPANY
DIVISION OF W. M. WELCH MANUFACTURING COMPANY

ESTABLISHED 1880

1515 Sedgwick Street, Dept. E, Chicago 10, Illinois, U.S.A.
Manufacturers of Scientific Instruments and Laboratory Apparatus

FURNACES, SOLAR

Edmund Scientific Co.

1957: 1 Nov., 938
1958: 7 Feb., 258; 9 May, 1086; 6 June, 1310; 8 Aug., 272; 5 Sept., 498
Little, Arthur D., Inc., Engineering Div.
1957: 25 Oct., 784

FURNITURE, LABORATORY

Alberene Stone Corp.

1958: 4 Apr., 765; 2 May, 1068; 6 June, 1352; 19 Sept., 672; 17 Oct., 916

Brinkmann Instruments, Inc.

1958: 9 May, 1129; 10 Oct., 851

Custom Scientific Instruments, Inc.

1958: 9 May, 1120

Duralab Equipment Corp.

1958: 3 Oct., 791

Fisher Scientific Co.

1957: 25 Oct., 779
1958: 21 Mar., 653; 20 June, 1452; 8 Aug., 314

Graphic Systems

1957: 15 Nov., 1030
1958: 4 Apr., 764; 4 July, 40; 5 Sept., 542

Harshaw Chemical Co., Harshaw

Scientific Div.

1958: 17 Oct., 908

Johns-Manville

1958: 21 Feb., 362; 11 Apr., 778; 25 Apr., 898; 9 May, 1082; 23 May, 1202; 13 June, 1362; 11 July, 50; 15 Aug., 326

Metalab Equipment Co.

1957: 25 Oct., 866

New Brunswick Scientific Co.

1957: 25 Oct., 863
1958: 6 June, 1347; 17 Oct., 916

Research Specialties Co.

1958: 12 Sept., 606

Scientific Glass Apparatus Co., Inc.

1957: 25 Oct., 880

Technicon Co.

1957: 25 Oct., 891; 6 Dec., 1207

GAS ANALYZER

Beckman Instruments, Inc., Spinco Div.

1958: 14 Feb., 310; 9 May, 1135

Cambridge Instrument Co., Inc.

1957: 6 Dec., 1152

GAS LIQUEFIER

Philips Electronics, Inc., Instruments Div.

1957: 13 Dec., 1219

GAS METER

Phipps & Bird, Inc.

1957: 1 Nov., 943
1958: 23 May, 1251

GAUGES

Ace Glass, Inc.

1957: 20 Dec., 1307

Consolidated Electrodynamics Corp.

1958: 17 Jan., 161; 21 Mar., 659; 19 Sept., 673; 17 Oct., 915

GLASSWARE AND ACCESSORIES

Ace Glass, Inc.

1958: 17 Jan., 160; 14 Feb., 353; 14 Mar., 607; 11 Apr., 825; 6 June, 1350; 1 Aug., 258; 26 Sept., 732

Bellco Glass, Inc.

1957: 25 Oct., 891; 6 Dec., 1192; 27 Dec., 1357

1958: 31 Jan., 251; 14 Mar., 611; 11 Apr., 822; 25 Apr., 1005; 30 May, 1295; 27 June, 1507; 25 July, 211; 29 Aug., 487; 19 Sept., 671; 26 Sept., 726

Corning Glass Works

1957: 25 Oct., 780; 6 Dec., 1153
1958: 3 Jan., 5; 14 Feb., 351; 7 Mar., 491; 11 Apr., 818; 2 May, 1079; 13 June, 1399; 5 Sept., 499; 17 Oct., 911

Fischer & Porter Co., Glass Products Div.

1957: 1 Nov., 899; 6 Dec., 1145
1958: 24 Jan., 173; 21 Feb., 367

Fish-Schurman Corp.

1957: 6 Dec., 1192

Fisher Scientific Co.

1957: 25 Oct., 779
1958: 9 May, 1128

Harshaw Chemical Co., Harshaw Scientific Div.

1958: 17 Oct., 908

Kimble Glass Co.

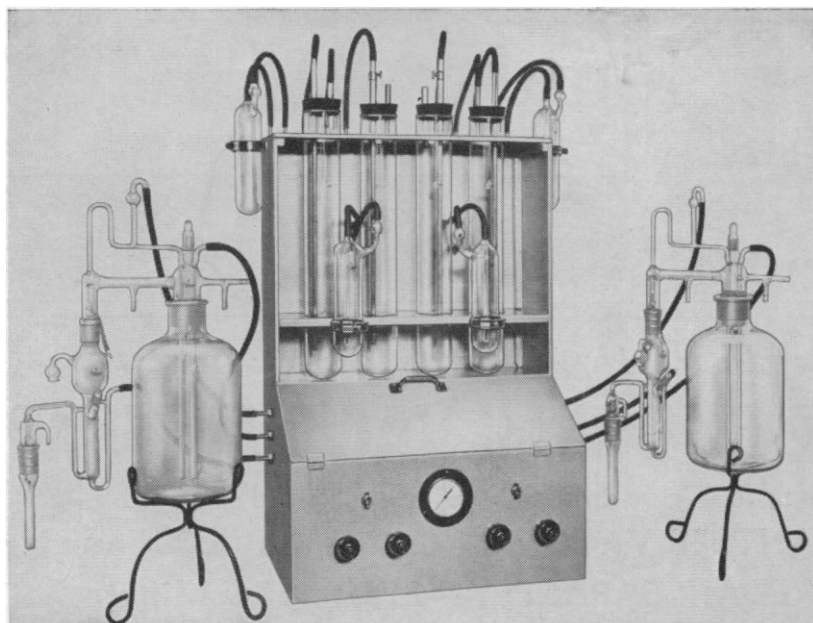
1958: 14 Mar., insert; 9 May, insert; 18 July, insert; 12 Sept., insert

Klett Manufacturing Co.

1957: 1 Nov., 943; 15 Nov., 1036; 29 Nov., 1129; 13 Dec., 1255; 27 Dec., 1357
1958: 3 Jan., 41; 10 Jan., 100; 17 Jan., 159; 24 Jan., 206; 31 Jan., 251; 7 Feb., 299; 21 Feb., 427; 28 Feb., 466; 7 Mar., 536; 14 Mar., 609; 21 Mar., 657; 28 Mar., 709; 4 Apr., 763; 11 Apr., 827; 18 Apr., 885; 25 Apr., 1000; 2 May, 1071; 9 May, 1129; 16 May, 1193; 23 May, 1260; 30 May, 1295; 6 June, 1354; 13

THE NEW CHEMOSTAT

A continuous culture apparatus for microorganisms
complete and ready to operate



A continuous flow of nutrient liquid maintains a bacterial population growing in logarithmic phase under constant conditions. Density of the population and its growth rate can be controlled by the experimenter. Used to study problems in the physiology and genetics of microorganisms.

In the chemostat a continuous flow of medium is approximated by small successive additions of nutrient; the volume of nutrient added per unit time is controlled: 1. by an adjustable timer which opens a solenoid valve allowing nutrient to enter periodically. 2. by a microswitch which controls the length of time the solenoid valve is open.

The chemostats are complete and ready to operate upon addition of culture and media. The metal cabinet which is finished in baked on gray hammerloid, contains all the apparatus needed for the regulation and maintenance of flow and aeration of the culture. All connections and switches clearly marked and regulation mechanisms easily accessible.

DS-8030 Glass Parts only **\$148.00**

DS-8031 One Chemostat, Metal Cabinet with one set of controls **\$309.00**

DS-8032 Two chemostats, metal cabinet with two sets of Controls **\$534.75**

Delmar

Scientific Laboratories

4701 WEST GRAND AVENUE • CHICAGO 39, ILLINOIS • TELEPHONE EV 4-5911

June, 1403; 27 June, 1514; 4 July, 39;
11 July, 98; 18 July, 155; 25 July, 216;
1 Aug., 259; 8 Aug., 315; 15 Aug., 373;
22 Aug., 431; 29 Aug., 484; 5 Sept.,
546; 12 Sept., 611; 19 Sept., 677; 26
Sept., 728; 3 Oct., 783; 10 Oct., 855; 17
Oct., 919

Palo Laboratory Supplies, Inc.

1958: 25 Apr., 985; 25 July, 211

Scientific Glass Apparatus Co., Inc.

1957: 25 Oct., 880

Welch, W. M., Manufacturing Co.

1958: 2 May, 1075

GLOVES, DRY BOX

Charleston Rubber Co.

1958: 2 May, 1019

GRADUATES

Daigger A., & Co.

1958: 31 Jan., 255

Nalge Co., Inc.

1958: 25 Apr., 914; 13 June, 1396

HEATERS

Central Scientific Co.

1958: 15 Aug., 367

Research Specialties Co.

1958: 21 Feb., 430

Standard Scientific Supply Corp.

1957: 22 Nov., 1083

1958: 21 Feb., 418; 23 May, 1258; 27

June, 1508

Thermo Electric Manufacturing Co.

1957: 6 Dec., 1200

HOMOGENIZERS

Lourdes Instrument Corp.

1958: 7 Mar., 534

Microchemical Specialties Co.

1957: 8 Nov., 985

Tri-R Instruments

1957: 25 Oct., 874

HOT PLATES

Research Specialties Co.

1958: 21 Feb., 430

Thermo Electric Manufacturing Co.

1957: 8 Nov., 986

HOODS

Alberene Stone Corp.

1958: 14 Mar., 605

Lennard, P. M., Co., Inc.

1958: 25 Apr., 993

HUMIDITY CONTROLLER

Daigger, A., and Co.

1957: 25 Oct., 798

Niagara Blower Co.

1957: 13 Dec., 1258

HUMIDITY GAUGE

Daigger, A., and Co.

1957: 25 Oct., 798

ILLUMINATORS

American Optical Co., Instrument Div.

1957: 8 Nov., 992

1958: 24 Jan., 208; 28 Mar., 720; 2

May, 1080; 16 May, 1200; 11 July, 104;

22 Aug., 436

Bausch & Lomb Optical Co.

1958: 15 Aug., 336

24 OCTOBER 1958

Inside or outside



Coleman pH Meters



are dependable

For the laboratory: Coleman Model 18A pH Meter AC line-operated 0.14 pH, 0-1400 mv, with connections for automatic titration. Ready to use, \$230.00.

For full details ask for Bulletin B-221

For Portability: Coleman Model 20 "Compax" An ingenious new approach to pH measurement. Battery-operated, self-contained, single control. Complete with all chemicals ready to use, \$200.00.

For full details ask for Bulletin B-248



COLEMAN INSTRUMENTS INC., DEPT. S, MAYWOOD, ILLINOIS

INCUBATORS

American-Lincoln Incubator Co.

1958: 17 Oct., 918

Electric Hotpack Co.

1958: 17 Oct., 909

New York Laboratory Supply Co., Inc.

1958: 27 June, 1513

ISOLATORS

American Sterilizer Co.

1958: 25 Apr., 901; 15 Aug., 333

KNIVES

Scott-Mitchell House, Inc.

1958: 26 Sept., 730

KYMOGRAPHS

Phipps & Bird, Inc.

1957: 6 Dec., 1209

1958: 9 May, 1123; 16 May, 1199; 5 Sept., 551; 12 Sept., 611

LABELS, TIME

Professional Tape Co., Inc.

1958: 12 Sept., 604; 17 Oct., 912

LABORATORY CLAMP

New York Laboratory Supply Co., Inc.

1958: 26 Sept., 733

LABORATORY EQUIPMENT, NUCLEONIC

Anton Electronic Laboratories, Inc.

1958: 12 Sept., 619

Atomic Accessories, Inc.

1958: 17 Jan., 162

Baird-Atomic, Inc.

1958: 14 Feb., 354

Blickman, S., Inc.

1958: 21 Feb., 436

Budd Co., Nuclear Systems Div.

1958: 6 June, 1345

Eldorado Electronics

1958: 14 Feb., 350; 14 Mar., 607; 13 June, 1403

General Dynamics Corp., General Atomic Div.

1958: 18 July, 109

Nuclear-Chicago Corp.

1957: 25 Oct., 799; 27 Dec., 1315

1958: 10 Jan., 52, 53; 28 Feb., 443; 18 July, 168; 29 Aug., 492; 26 Sept., 740

Nuclear Science and Engineering Corp.

1958: 7 Mar., 542

Packard Instrument Co., Inc.

1958: 15 Aug., 334

Technical Measurement Corp.

1958: 11 July, 58; 5 Sept., 502

Tracerlab, Inc.

1958: 22 Aug., 425

LABORATORY JACK

Central Scientific Co.

1957: 25 Oct., 771

1958: 8 Aug., 313

LABORATORY MILL

Thomas, Arthur H., Co.

1957: 29 Nov., 1136

LABORATORY PRESS

Lee Engineering Co.

1958: 15 Aug., 372; 29 Aug., 486; 12 Sept., 612; 26 Sept., 730

LABORATORY SUPPLIES

Ace Glass, Inc.

1958: 14 Feb., 353; 14 Mar., 607; 4 July, 36; 26 Sept., 732

Busse Hospital Products

1957: 25 Oct., 872

Central Scientific Co.

1958: 26 Sept., 728

Clay-Adams, Inc.

1957: 22 Nov., 1077

Corning Glass Works

1958: 7 Mar., 491

Daigger, A., & Co.

1958: 31 Jan., 255

Fisher Scientific Co.

1958: 21 Mar., 653; 10 Oct., 852

Foringer & Co., Inc.

1958: 25 Apr., 1015

Greiner, Emil, Co.

1958: 12 Sept., 561

Harshaw Chemical Co., Harshaw Scientific Div.

1958: 17 Oct., 908

Kennametal, Inc.

1958: 7 Mar., 546

Linbro Chemical Co.

1957: 25 Oct., 855

Nalge Co., Inc.

1957: 15 Nov., 1028

1958: 25 Apr., 914

New York Laboratory Supply Co., Inc.

1958: 7 Mar., 539

Thomas, Arthur H., Co.

1957: 6 Dec., 1215; 13 Dec., 1264

1958: 10 Jan., 104

United States Testing Co., Inc.

1957: 25 Oct., 859

1958: 7 Mar., 497; 27 June, 1467

Will Corp.

1957: 15 Nov., 1031

1958: 16 May, 1191; 18 July, 157

LAMPS

American Speedlight Corp.

1958: 25 Apr., 988

Artisto Grid Lamp Products, Inc.

1957: 25 Oct., 886

Bausch & Lomb Optical Co.

1957: 27 Dec., 1354

1958: 31 Jan., 214

Edmund Scientific Co.

1957: 6 Dec., 1200

1958: 11 Apr., 831

Leitz, E., Co.

1958: 17 Jan., 107; 14 Feb., 309

Standard Scientific Supply Corp.

1958: 17 Jan., 164

Ultra-Violet Products, Inc.

1957: 25 Oct., 866

1958: 7 Mar., 534; 18 July, 154; 15 Aug., 372; 19 Sept., 668

United Scientific Co., Unitron Instrument Div.

1958: 26 Sept., 739

LATTICE HARDWARE

Lee Engineering Co.

1958: 22 Aug., 430; 5 Sept., 542; 19 Sept., 678

What do you measure?

Na^+

Pco_2

K^+

pH

HCO_3

Li^+

Osm

0.001C

D_2O

- ADVANCED FLAME PHOTOMETER
- FISKE *freezing-point* OSMOMETER CRYSCOPE
- ADVANCED Pco_2 -pH DUOMETER
- FISKE PRECISION THERMOMETERS
- ADVANCED TRITIUM ANALYZER
- FISKE PROPORTIONAL CONTROLLERS

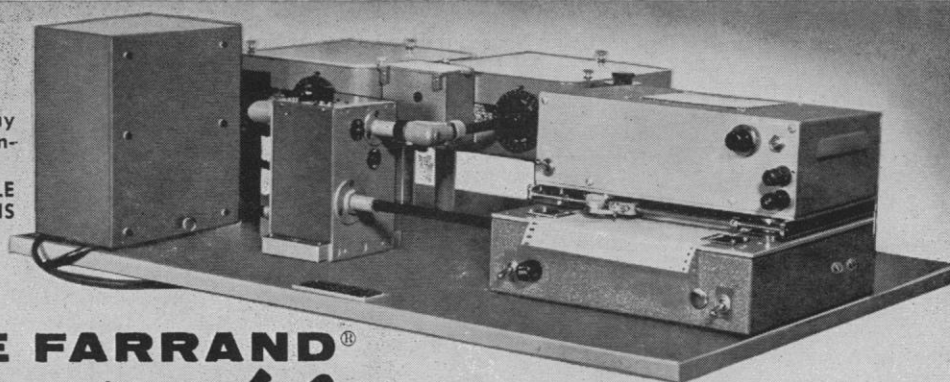


**ADVANCED
INSTRUMENTS, INC.**

40 Kenneth Street
DEcatur 2-8200
Newton Highland,
Massachusetts

For fluorometric analyses, assay
and identification of chemical con-
stituents... in the

ULTRAVIOLET, VISIBLE
and INFRARED REGIONS



THE FARRAND® *Spectrofluorometer*

FOR MANUAL OPERATION, FOR RECORDING
OR FOR OSCILLOSCOPE PRESENTATION

The Farrand Spectrofluorometer is designed
for determining the optimum wavelength
for activating Organic Compounds and the
optimum wavelength for measuring their
emitted fluorescence spectra.

The instrument is simple to operate, and the
efficiency of the optical and detector system

affords great sensitivity and response even
when using capillary or micro volumes of
highly diluted solutions.

It is not of a console-type construction, and
therefore can be serviced readily without dis-
mantling.

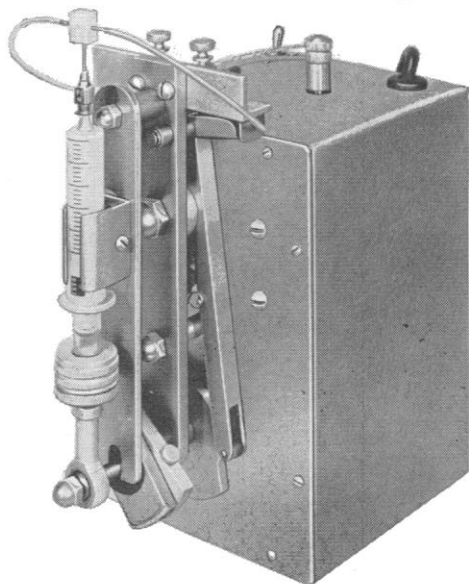
BULLETIN NO. 820 UPON REQUEST



Engineering
Research • Development
Design • Manufacture
Precision Optics
Electronic and
Scientific Instruments

FARRAND OPTICAL CO., Inc.
BRONX BLVD. & EAST 238th STREET • NEW YORK 70, N. Y.

Bird INFUSION PUMP



A valveless pump that offers the ultimate in
freedom from contamination of the liquid
pumped, either from the pump itself or from
previously pumped liquids. For infusing ac-
curately small volumes of solutions at the rate of
0.5 ml through 25 ml with a variation of less
than 5% at pressures up to 200 mm Hg. De-
livery rate can be changed rapidly by means of
a simple screw adjustment. A graduated scale
makes it possible to accurately reproduce desired
rates. Stopping to refill syringe is eliminated by
use of a reservoir. The length of delivery run
is determined by volume of reservoir.

CAT. NO. 71-046

PHIPPS & BIRD, INC.

Manufacturers & Distributors of Scientific Equipment



6th & Byrd Streets - Richmond, Va.

LEAK DETECTORS

**Consolidated Electrodynamics Corp.,
Rochester Div.**
1958: 17 Jan., 161

LIGHT ADAPTERS

American Speedlight Corp.
1957: 25 Oct., 878; 6 Dec., 1196

MACROPHOTOGRAPHIC EQUIPMENT

American Speedlight Corp.
1957: 25 Oct., 878; 6 Dec., 1196
Brinkmann Instruments, Inc.
1958: 16 May, 1193
Hofmann, Alfred, & Co.
1957: 25 Oct., 883

MACROSCOPES

Bausch & Lomb Optical Co.
1957: 1 Nov., 938; 6 Dec., 1158
1958: 12 Sept., 568

MAGNIFIERS

Edmund Scientific Co.
1958: 3 Jan., 47; 7 Mar., 496
Novel Manufacturing Co.
1958: 10 Jan., 99; 21 Feb., 427
Scott-Mitchell House, Inc.
1958: 3 Jan., 43

MANOMETERS

Will Corp., Bronwill Scientific Div.
1958: 14 Feb., 349; 16 May, 1195; 19
Sept., 674; 3 Oct., 784

MELTING POINT APPARATUS

Fisher Scientific Co.
1958: 11 July, 96
Thomas, Arthur H., Co.
1957: 25 Oct., 895
1958: 4 July, 48

MERCURY VAPOR DETECTORS

Kruger, Harold, Instruments
1958: 15 Aug., 368

MICROANALYSIS EQUIPMENT

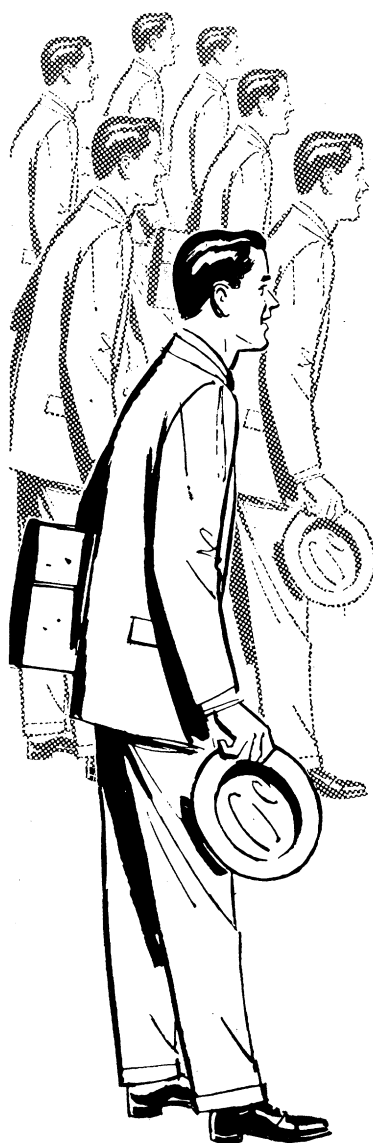
Ainsworth, Wm., & Sons, Inc.
1958: 18 July, 153
Aloe, A. S., Co., Aloe Scientific Div.
1957: 1 Nov., 935
1958: 3 Jan., 46; 4 Apr., 763; 2 May,
1071; 4 July, 43; 1 Aug., 259; 5 Sept.,
546
American Optical Co., Instrument Div.
1958: 19 Sept., 684
Brinkmann Instruments, Inc.
1957: 1 Nov., 937
1958: 25 Apr., 1009
Central Scientific Co.
1958: 8 Aug., 313
Clay-Adams, Inc.
1957: 25 Oct., 879
Exact Weight Scale Co.
1958: 2 May, 1072; 8 Aug., 317
Leitz, E., Inc.
1958: 4 July, 47
Mettler Instrument Corp.
1958: 12 Sept., 565
Micro-Metric Instrument Co.
1957: 25 Oct., 875
Stoelting, C. H., Co.
1958: 11 Apr., 827; 23 May, 1253; 18
July, 155; 26 Sept., 736

MICROBIOLOGICAL EQUIPMENT

Beckman Instruments, Inc., Spinco Div.
1958: 26 Sept., 686
Bellco Glass, Inc.
1958: 27 June, 1507; 25 July, 211; 29
Aug., 487; 19 Sept., 671; 26 Sept., 726
Blickman, S., Inc.
1957: 13 Dec., 1263
Delmar Scientific Laboratories
1957: 6 Dec., 1190
1958: 21 Feb., 423; 25 Apr., 998
Fisher Scientific Co.
1958: 17 Jan., 163
**Instrument & Development Products Co.,
Inc.**
1958: 13 June, 1398
Lennard, P. M., Co., Inc.
1957: 25 Oct., 884; 6 Dec., 1205
Technical Instrument Co.
1958: 21 Feb., 427
Thomas, Arthur H., Co.
1958: 9 May, 1136

MICROBIOLOGICAL MEDIA

Clinton Laboratories
1957: 25 Oct., 889
1958: 21 Feb., 433
Colorado Serum Co.
1957: 25 Oct., 869; 15 Nov., 1026
1958: 21 Feb., 415; 25 Apr., 999; 16
May, 1196; 13 June, 1397
Difco Laboratories
1957: 25 Oct., 857; 22 Nov., 1077; 20
Dec., 1303
1958: 17 Jan., 159; 14 Feb., 355; 14
Mar., 609; 11 Apr., 823; 2 May, 1071; 30



How Many Salesmen Do You Want to See Today?

No matter how skilled and efficient
salesmen are, it takes time to see them
and hear about their fine products.

That's why your Will Representative
helps you conserve time when he
calls. He brings complete information
about the products of hundreds of
manufacturers of the finest
laboratory equipment.

Your Will Representative is unique
among laboratory supply house
salesmen, too: (1) He has a complete
and exclusive Will Technical Reference
File with detailed specifications data
on all suppliers' products (2) He
has Will's exclusive Equipment List:
it shows stock on hand . . . and on
order . . . at all six Will warehouses,
and it's revised weekly.

So, save time, get all the facts . . . call
for your Will Representative *first*.

Will CORPORATION
and subsidiaries



*Specialists in
Scientific Supply*

ROCHESTER 3, N. Y. • ATLANTA 1, GA. • NEW YORK 52, N. Y. • BALTIMORE 24, MD.
BUFFALO 5, N. Y. • SO. CHARLESTON 3, W. VA.

May, 1300; 25 July, 215; 22 Aug., 431;
19 Sept., 675; 17 Oct., 919

Hyland Laboratories

1957: 25 Oct., 883
1958: 17 Jan., 157; 21 Feb., 425; 7
Mar., 537; 25 Apr., 1001; 15 Aug., 370

MICROCARDS

Microcard Corp.

1958: 5 Sept., 541; 3 Oct., 787

MICROMANIPULATORS

Aloe, A. S., Co., Aloe Scientific Div.

1957: 1 Nov., 935
1958: 3 Jan., 46; 2 May, 1071; 5
Sept., 546

American Optical Co., Instrument Div.

1958: 19 Sept., 684

Brinkmann Instruments, Inc.

1958: 25 Apr., 1009

Leitz, E., Inc.

1958: 4 July, 47

Stoelting, C. H., Co.

1958: 11 Apr., 827; 23 May, 1253;
18 July, 155; 26 Sept., 736

MICROMETERS

Decker Corp.

1958: 21 Feb., 365

MICRORADIOGRAPHIC EQUIPMENT

Philips Electronics, Inc.

1957: 25 Oct., 782

MICROSCOPES

American Optical Co., Instrument Div.

1957: 25 Oct., 896; 22 Nov., 1088; 6
Dec., 1216

1958: 3 Jan., 48; 31 Jan., 256; 28 Feb.,
488; 14 Mar., 616; 18 Apr., 896; 30 May,
1304; 27 June, 1520; 8 Aug., 324; 5
Sept., 556

Bausch & Lomb Optical Co.

1957: 25 Oct., 804; 20 Dec., 1270
1958: 17 Jan., 114; 28 Feb., 450; 28
Mar., 674; 25 Apr., 934; 6 June, 1316; 4
July, 6; 29 Aug., 444; 26 Sept., 692

Brinkmann Instruments, Inc.

1957: 13 Dec., 1257

1958: 26 Sept., 733

Edmund Scientific Co.

1958: 3 Oct., 795

Graf-Apsco Co.

1957: 25 Oct., 891
1958: 12 Sept., 609; 26 Sept., 736; 17
Oct., 910

Hacker, William J., & Co., Inc.

1958: 25 July, 172

Leitz, E., Inc.

1957: 25 Oct., 772; 8 Nov., 948; 22
Nov., 1044; 6 Dec., 1146; 20 Dec., 1310
1958: 3 Jan., 4; 14 Mar., 559; 28
Mar., 707; 25 Apr., 906; 9 May, 1087;
23 May, 1208; 30 May, 1267; 1 Aug.,
224; 29 Aug., 442; 12 Sept., 564; 19
Sept., 624

Monroe Microscope Service

1958: 22 Aug., 430

Olympus Optical Instrument Co.

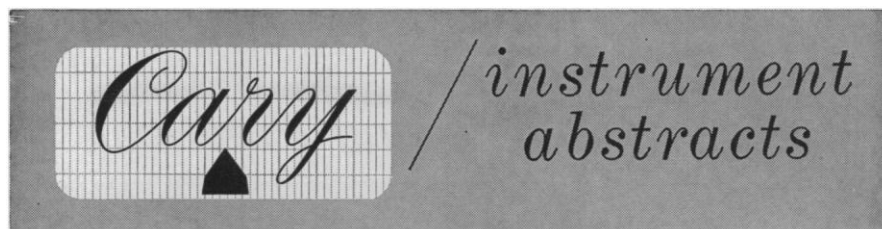
1957: 25 Oct., 796; 6 Dec., 1197

United Scientific Co., Unitron Instrument Div.

1957: 25 Oct., 781; 29 Nov., 1135; 13
Dec., 1222

1958: 7 Mar., 493; 21 Mar., 652; 11

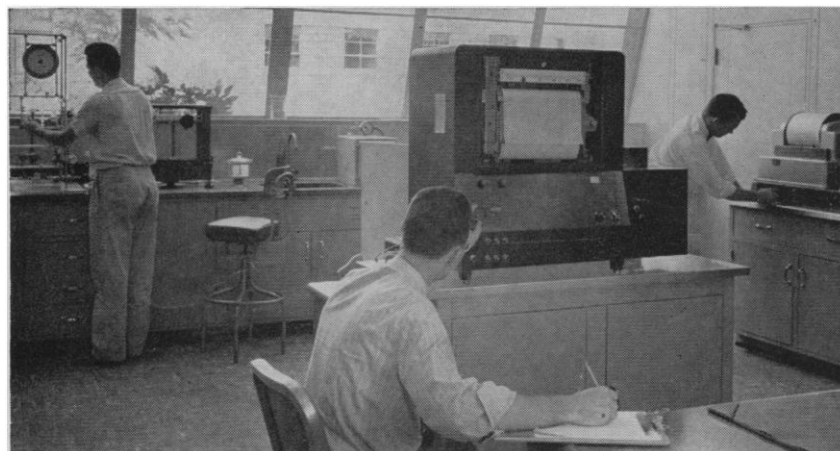
24 OCTOBER 1958



Applied Physics Corporation/Pasadena/California

For Ultraviolet-Visible Spectrophotometry

The Cary Model 11 provides performance comparable to the finest; cost comparable to the cheapest.



Considering the purchase of a recording spectrophotometer? The following comments may help you get much more for your money.

Most spectrophotometer users regard the Cary Model 14, with its 1860 Å to 2.6 μ wavelength as the finest recording spectrophotometer available. We have been surprised to discover that quite a few people do not realize that the Model 14 has a companion instrument—the Cary Model 11—which gives the same high quality of the Model 14 at a cost comparable to the lowest-price recording spectrophotometer. The difference between the Model 11 and the Model 14 is in wavelength range. Of course, where the wider wavelength range is required, the Model 14 is the finest instrument available. However, for applications in the ultraviolet and visible ranges

(2100 Å to 8000 Å) the Cary Model 11 provides the same high degree of accuracy, ruggedness, and dependability as the Model 14, as well as its convenience and flexibility, including linear wavelength recording, speed of scanning, accessories, etc. Important performance data on the Cary Model 11 are outlined below.

Stray Light: Less than 0.0001% over most of the range.

Scanning Speeds: 1.0 Å per second (ultraviolet region) to 125 Å per second (visible region).

Resolution: 1.0 Å or better throughout most of the range.

Wavelength Accuracy: Better than 5.0 Å in the ultraviolet region and better than 10.0 Å in the visible region.

Reproducibility: Better than 0.5 Å in the ultraviolet and 3.0 Å in the visible region.

Photometric Reproducibility: Reproducibility better than .004 in absorbance can be achieved with the Model 11.

20,000 HOURS OF SERVICE WITHOUT MAJOR REPAIRS

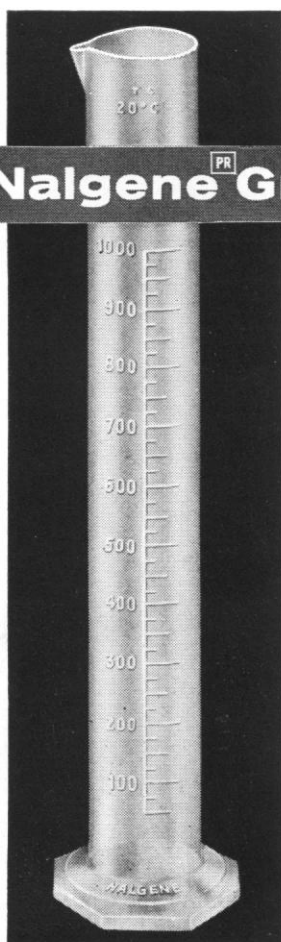
The first Cary Model 11 was produced in 1947, and since then nearly every leading analytical laboratory in the United States—and many abroad—has acquired one or more Model 11's. The performance, flexibility and reliability of the Model 11 have been proved in all kinds of research and control applications.

One of the first instruments to be manufactured—Serial No. 2—was recently overhauled at the factory after having been in use twelve hours per day for over six years without requiring any

service other than routine maintenance. This instrument has now begun a second stint of reliable service which will undoubtedly run into additional thousands of hours.

FREE BULLETIN

If your spectrophotometer applications are in the visible or ultraviolet range, investigate the many advantages of the Cary Model 11. For complete information write to Applied Physics Corporation, 362 West Colorado Street, Pasadena 1, California, for Bulletin E3-108.



Safe and Practical

Nalgene Graduated Cylinders

You can feel the safety and practicality of a NALGE GRADUATED CYLINDER the *minute* it's in your hand.

Light and easy to handle, these cylinders are formed from tough, unbreakable polypropylene for greater clarity.

Made in accordance with standard graduate specifications and dimensions—accurate to within 1%.

Measurements are easily read since water solutions have practically no meniscus in polypropylene.

Octagonal base prevents rolling.

The cylinders can be autoclaved repeatedly.

Cap. ml.	25	50	100	250	500	1000
Subdiv., ml.	1	2	5	10	20	25

Each	2.65	2.90	3.30	3.85	5.50	7.20
Less Quantity Discounts						

Ask your dealer for catalog G-358

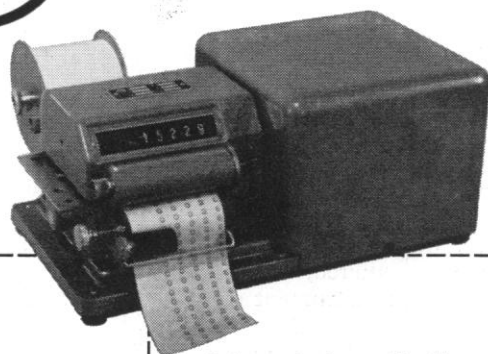


WORLD'S LARGEST PRODUCER OF PLASTIC LABORATORY WARE



PRINTING COUNTERS

FOR POSITIVE, ERROR-PROOF COUNT RECORDING



Model F272

A STURDY, ABSOLUTELY
ACCURATE AND LONG-SERVICE
INSTRUMENT... COUNTING
AND PRINTING ELECTRICALLY
ON TAPE OR CARD, WITH
AUTOMATIC RESET TO ZERO

- A completely machined instrument with parts subject to wear of case hardened steel, hard chrome plated.
- Exclusive parallel printing and visual registers yield count accumulation instantly and continuously.
- Printing and resetting to zero simultaneously, or separately.
- Counting rate 5 per sec. Reset and print 1 sec. For 110 VAC or 12 and 24 VDC operation.
- The finest instrument of its class—yet half the price of any other printing counter!

MADE BY  ...MANUFACTURERS OF THE MOST COMPLETE LINE OF COUNTING DEVICES IN THE WORLD!

Write for our new catalog today

PRESIN CO. 2014 BROADWAY
SANTA MONICA, CALIF.

Apr., 819; 9 May, 1125; 5 Sept., 547; 10 Oct., 856

Wild Heerbrugg Instruments, Inc.

1957: 25 Oct., 865; 15 Nov., 1035; 6 Dec., 1198

1958: 10 Jan., 95; 24 Jan., 202; 21 Feb., 434; 10 Oct., 853

Zeiss, Carl, Inc.

1957: 8 Nov., 991; 22 Nov., 1049

1958: 25 Apr., 928; 11 July, 56; 8 Aug., 323; 5 Sept., 501

MICROSCOPES, ELECTRON

Erb & Gray Scientific Co.

1958: 21 Feb., 421; 9 May, 1129; 8 Aug., 315

Philips Electronics, Inc.

1957: 25 Oct., 782; 8 Nov., 950; 22 Nov., 1047

Siemens & Halske

1958: 24 Jan., 197; 7 Mar., 495; 28 Mar., 666; 25 Apr., 912

MICROSCOPES, PHASE

American Optical Co., Instrument Div.

1957: 20 Dec., 1312

1958: 4 Apr., 776; 25 July, 220

United Scientific Co., Unitron Instrument Div.

1957: 25 Oct., 781; 15 Nov., 1034; 29 Nov., 1135

1958: 18 Apr., 835; 27 June, 1469; 25 July, 171; 17 Oct., 917

MICROSCOPES, STEREO

American Optical Co., Instrument Div.

1957: 25 Oct., 896; 6 Dec., 1216

1958: 14 Feb., 360; 2 May, 1080; 16 May, 1200; 13 June, 1406; 11 July, 104

Bausch & Lomb Optical Co.

1957: 22 Nov., 1052

1958: 14 Feb., 314

Edmund Scientific Co.

1957: 1 Nov., 938; 6 Dec., 1200

1958: 3 Jan., 47; 11 Apr., 831; 9 May, 1086

Monroe Microscope Service

1958: 25 Apr., 1002

United Scientific Co., Unitron Instrument Div.

1958: 14 Feb., 350; 23 May, 1254; 19 Sept., 668

MICROSCOPES, STUDENT

Bausch & Lomb Optical Co.

1958: 14 Mar., 564; 11 Apr., 786; 23 May, 1212

Edmund Scientific Co.

1958: 7 Feb., 258; 7 Mar., 496; 11 July, 103; 8 Aug., 272; 5 Sept., 498

Graf-Apsco Co.

1957: 6 Dec., 1192

1958: 5 Sept., 542; 19 Sept., 675

Leitz, E., Inc.

1957: 22 Nov., 1044; 20 Dec., 1310

1958: 3 Jan., 4; 25 Apr., 906; 23 May, 1208

United Scientific Co., Unitron Instrument Div.

1958: 14 Mar., 606; 4 Apr., 764; 2 May, 1070; 12 Sept., 612

MICROSCOPES, X-RAY

General Electric Co.

1958: 21 Feb., 431; 25 Apr., 990; 20 June, 1456; 22 Aug., 428

MICROSCOPE ACCESSORIES

American Optical Co., Instrument Div.

1957: 8 Nov., 992

1958: 24 Jan., 208; 31 Jan., 256; 28 Feb., 488; 14 Mar., 616; 28 Mar., 720; 4 Apr., 776; 2 May, 1080; 16 May, 1200; 11 July, 104; 22 Aug., 436

Bausch & Lomb Optical Co.

1958: 17 Jan., 114; 15 Aug., 336

Busse Hospital Products

1957: 25 Oct., 872

Custom Scientific Instruments, Inc.

1958: 12 Sept., 606

Dell Optics Co., Ltd.

1958: 21 Feb., 416; 21 Mar., 652; 18 Apr., 889

Hacker, William J., & Co., Inc.

1958: 14 Mar., 611; 25 July, 172

Leitz, E., Inc.

1958: 14 Feb., 309; 6 June, 1359

Monroe Microscope Service

1957: 25 Oct., 881

Thomas, Arthur H., Co.

1957: 25 Oct., 895

United Scientific Co., Unitron Instrument Div.

1958: 21 Feb., 371; 15 Aug., 331; 26 Sept., 739; 17 Oct., 917

MICROTOMES AND ACCESSORIES

Aloe, A. S., Co., Aloe Scientific Div.

1957: 25 Oct., 857; 6 Dec., 1195

1958: 7 Feb., 303; 7 Mar., 541

American Hospital Supply Corp.

1958: 25 Apr., 916

Brinkmann, C. A., & Co., Inc.

1958: 11 Apr., 823

Hacker, William J., & Co., Inc.

1957: 25 Oct., 861

1958: 7 Mar., 539

Leitz, E., Inc.

1958: 11 Apr., 783

Monroe Microscope Service

1957: 25 Oct., 881

Sorvall, Ivan, Inc.

1957: 25 Oct., 791; 6 Dec., 1138

1958: 26 Sept., 690

MIXERS

Laboratory Glass and Instrument Corp.

1957: 25 Oct., 885

1958: 25 July, 170; 12 Sept., 560

Lourdes Instrument Corp.

1957: 25 Oct., 775

1958: 24 Jan., 171

Sorvall, Ivan, Inc.

1958: 20 June, 1415; 26 Sept., 690

MOLECULAR MODEL SET

Smith, Arthur F., Co.

1958: 10 Jan., 94

Standard Scientific Supply Co.

1958: 18 July, 152

MONOCHROMATORS

Bausch & Lomb Optical Co.

1958: 20 June, 1418

Biddle, James G., Co.

1958: 25 Oct., 885

Farrand Optical Co., Inc.

1958: 16 May, 1196; 18 July, 159

Kahl Scientific Instrument Corp.

1957: 25 Oct., 872

Photovolt Corp.

1957: 15 Nov., 1033; 27 Dec., 1357

1958: 17 Jan., 165; 14 Feb., 348; 4

Apr., 763; 2 May, 1067; 6 June, 1349; 4 July, 43; 8 Aug., 313; 3 Oct., 783

NEPHELOMETERS

Coleman Instruments, Inc.

1957: 29 Nov., 1130

1958: 25 July, 209; 26 Sept., 735

OPTICAL CRYSTALS

Dell Optics Co., Ltd.

1958: 21 Feb., 416; 21 Mar., 652

Harshaw Chemical Co.

1957: 25 Oct., 877; 15 Nov., 1033; 6 Dec., 1211

1958: 10 Jan., 97; 21 Feb., 421; 21

Mar., 651; 18 Apr., 885; 16 May, 1189, 15 Aug., 367; 19 Sept., 671

Isomet Corp.

1958: 21 Feb., 419

OPTICAL INSTRUMENTS

Gurley, W. & L. E.

1958: 17 Oct., 918

OSCILLATORS, SONIC

Raytheon Manufacturing Co.

1957: 25 Oct., 777; 15 Nov., 1040

1958: 11 Apr., 781; 25 Apr., 907; 2 May, 1022; 9 May, 1085; 16 May, 1141; 6 June, 1313; 10 Oct., 798

(prepared medium)

PRE-MED[®]

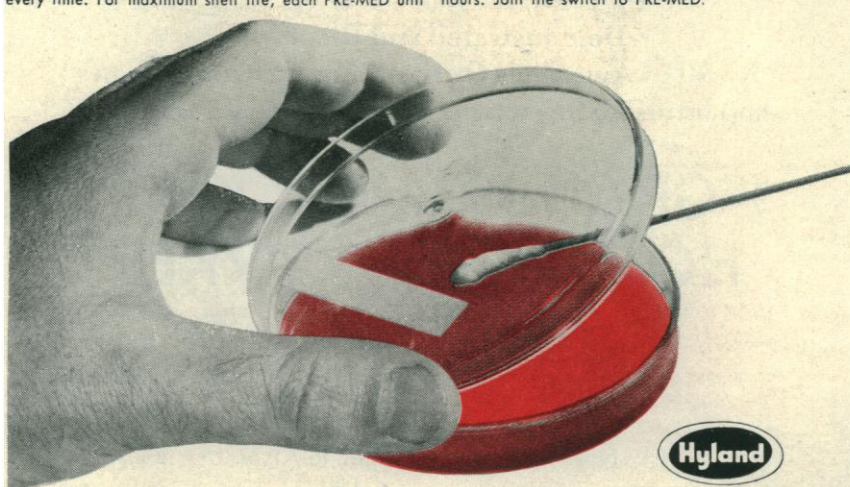
THE DISPOSABLE CULTURE PLATE IN A STERILE BAG

with your choice of media

for routine bacteriology	for routine mycology
Blood Agar	Sabouraud Dextrose Agar
Chocolate Agar	Mycosel Agar
MacConkey Agar	Littman Oxgall Agar
Desoxycholate Citrate Agar	
E.M.B. Agar	

(other media on request)

Get technicians out of the kitchen and back to the laboratory. Switch to PRE-MED—the efficient way to obtain plates. PRE-MED plates are optically clear, scratch-free Petri dishes containing ready-to-streak culture media. Because they are mass-produced with modern, controlled methods, you get perfect, sterile, standard preparations every time. For maximum shelf life, each PRE-MED unit is sealed in a sterile polyethylene bag to preserve moisture and prevent air contamination. (Bag may be resealed for prolonged incubation.) Now, even perishable specimens become routine to handle. Simply open a bag, streak the plate and incubate. After reading, destroy. Salvage lost technician-hours. Join the switch to PRE-MED.



Hyland

it's ready to use — just streak it

HYLAND LABORATORIES 4501 Colorado Blvd., Los Angeles 39, Calif.

OSCILLOSCOPES

Sanborn Co.

1957: 25 Oct., 793; 1 Nov., 898; 22 Nov., 1045
1958: 14 Mar., facing 584

Ovens

Ace Glass, Inc.

1957: 25 Oct., 850
American Instrument Co., Inc.
1958: 13 June, 1365
Brinkmann Instruments, Inc.
1958: 17 Jan., 109
Central Scientific Co.
1957: 25 Oct., 771
1958: 22 Aug., 431

Fisher Scientific Co.

1958: 11 Apr., 826
Pereny Equipment Co.
1957: 29 Nov., 1127
Schaar and Co.
1957: 8 Nov., 985

PETRI DISHES

Thomas, Arthur H., Co.
1958: 9 May, 1136

pH INDICATORS

Advanced Instruments, Inc.
1957: 25 Oct., 856
Analytical Measurements, Inc.
1958: 7 Feb., 296; 25 Apr., 1008

Beckman Instruments, Inc., Scientific Instruments Div.

1958: 4 Apr., 775; 11 July, 55
Brinkmann Instruments, Inc.
1958: 6 June, 1354
Cambridge Instrument Co., Inc.
1957: 6 Dec., 1152
1958: 21 Feb., 424
Coleman Instruments, Inc.
1958: 9 May, 1127; 11 July, 95

PHOTOMETERS

Advanced Instruments, Inc.

1957: 25 Oct., 856
Baird-Atomic, Inc.
1958: 17 Oct., 920
Eldorado Electronics
1957: 25 Oct., 866; 8 Nov., 986; 13 Dec., 1259
1958: 10 Jan., 95; 11 Apr., 818; 4 Apr., 766
Farrand Optical Co., Inc.
1958: 25 Apr., 987; 26 Sept., 724
Fisher Scientific Co.
1957: 13 Dec., 1258
1958: 21 Feb., 432
Kahl Scientific Instrument Corp.
1957: 25 Oct., 872
Metro Industries
1957: 25 Oct., 877
Perkin-Elmer Corp., Instrument Div.
1957: 25 Oct., 789
Photovolt Corp.
1957: 1 Nov., 943; 20 Dec., 1303
1958: 24 Jan., 199; 7 Mar., 541; 25 Apr., 997; 16 May, 1189

PHOTOMICROGRAPHIC EQUIPMENT

American Optical Co., Instrument Div.

1958: 3 Oct., 796
American Speedlight Corp.
1957: 25 Oct., 878; 6 Dec., 1196
Bausch & Lomb Optical Co.
1957: 1 Nov., 938
1958: 18 July, 114; 29 Aug., 444; 26 Sept., 692
Brinkmann Instruments, Inc.
1958: 16 May, 1193
Central Scientific Co.
1957: 15 Nov., 1039; 13 Dec., 1218
1958: 10 Jan., 103; 21 Feb., 368; 28 Mar., 719; 4 Apr., 723
Electro-Mechanical Development Co.
1958: 24 Jan., 206
Hofmann, Alfred, & Co.
1957: 25 Oct., 883
Leitz, E., Inc.
1957: 25 Oct., 772; 8 Nov., 948
Photovolt Corp.
1957: 1 Nov., 943; 20 Dec., 1303
1958: 24 Jan., 199; 7 Mar., 541; 25 Apr., 997; 16 May, 1189
United Scientific Co., Unitron Instrument Div.
1957: 25 Oct., 781; 29 Nov., 1135
1958: 7 Feb., 297; 16 May, 1190; 25 July, 171; 17 Oct., 917
Zeiss, Carl, Inc.
1957: 25 Oct., 787
1958: 21 Feb., 375; 21 Mar., 620; 11 July, 56

PIPETTES AND ACCESSORIES

American Hospital Supply Corp., Scientific Products Div.
1958: 15 Aug., 329

You are cordially invited to attend the

PARADE of SCIENTIFIC INSTRUMENTS

for Education, Public Health and Industry

. . . featuring a symposium and
lectures by eminent scientists
and technicians on instrumentation
and methods.

*New Laboratory Instruments
New Apparatus and Chemicals
New Techniques — New Ideas*

**Demonstrated and Displayed
By 50 of America's Outstanding Instrument and
Apparatus Manufacturers and Chemical Producers**

GRAND BALLROOM HOTEL NEW YORKER

34th Street and 8th Avenue, New York City

Nov. 10, 1958 — 2 to 9 P.M.

Nov. 11, 1958 — 11 A.M. to 9 P.M.

Nov. 12, 1958 — 11 A.M. to 7 P.M.

under the auspices of

STANDARD SCIENTIFIC SUPPLY CORP.

808 Broadway, New York 3, N.Y.

Stoelting **SERVO-GRAPHIC STRIP CHART RECORDER**

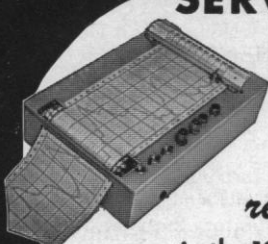
Solves your recording problem in the 10 to 100 Millivolt DC range at the Lowest Cost

The principle of operation is based on a null balancing system using a multi-turn potentiometer and servo-motor. The simple basic design and rugged construction provides utmost reliability. Features: long life photo-electric chopper, rectilinear recording, variety of chart speeds and drives, mounts and writes horizontal or vertical, all components readily accessible.

C. H. STOELTING CO.
424 N. HOMAN AVE. • CHICAGO 24, ILL.

CATALOG No. 22700

- HIGH IMPEDANCE INPUT
- 5" USEFUL CHART WIDTH
- PEN TRAVEL 2" SECOND STD.
- RAPID PEN CHANGING
- TABLE OR PANEL MOUNTING
- HIGH STABILITY



Setting the pace since 1949 in Small-Scale Apparatus—

METROWARE

OVER 300 DIFFERENT INTERCHANGEABLE UNITS FOR EVERY TYPE OF ORGANIC ANALYSES:

DRYING AND STORING
FRACTIONATING
DISTILLATION
FILTRATION
REFLUXING
SUBLIMATION
CONCENTRATION
EXTRACTION, LIQUIDS AND SOLIDS

ME499 Kit

METRO INDUSTRIES
Manufacturers of Metroware and specialized equipment for Pharmaceutical, Physiological and Chemical research
11-38 31st Avenue • Long Island City 6, N.Y.



LARGE, FAST, STABLE SEPARATIONS

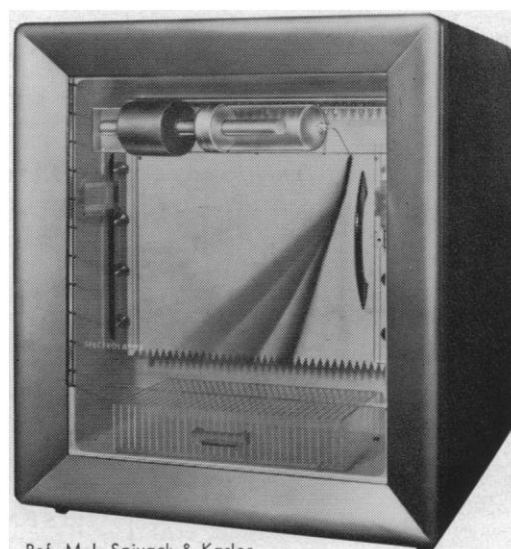
with misco SPECTROLATOR

This is an entirely new concept of a Large Volume, Continuous Flow, Free Hanging, Vertical Curtain Electrochromatography Unit with built in Heat Pump type compressor.

Circulating cold air from the internal Heat Pump is directed across both sides of the curtain. This instantaneously dissipates heat from the curtain, stabilizing the fractionating patterns.

The flip of a switch reverses the Heat Pump from refrigeration to heat which immediately dries the curtain in place. Stable patterns are easily reproduced. Precise electronic control of temperature eliminates gradients and stabilizes the electrophoretic pattern. The low temperature (0°-1° C.) operation gives the SPECTROLATOR a high resolving power (110 V/cm) and a large capacity (up to 1 liter per day).

The unit is compact, table size. Platinum, non-clogging electrodes are used. The unit can be operated from micro to macro scale.



Ref: M. L. Spivack & Karler:
Journal of Immunology, Purification of Plague Toxin,
Vol. 80 No. 6, pp 441-445, June 58. Patents Applied for.

Write to:

MICROCHEMICAL SPECIALTIES CO.

1825 Eastshore Highway • Berkeley 10, California

Every Chemist
should have one at \$29.⁵⁰

Do not waste costly man hours waiting for or walking to a balance. For only \$29.50 you can have each chemist or weighing station equipped with a fast, accurate Cent-O-Gram.

SENSITIVITY .01 gram (1 Centigram)
CAPACITY 311 Gram



for complete information write for FREE bulletin.....

OHAUS
SCALE CORPORATION
1050 COMMERCE AVE.
UNION, NEW JERSEY

Clay-Adams, Inc.
1957: 25 Oct., 879

Corning Glass Works
1958: 2 May, 1079; 5 Sept., 499

Fischer & Porter Co., Glass Products Div.
1957: 1 Nov., 899; 6 Dec., 1145

Fisher Scientific Co.
1958: 12 Sept., 610

Nalge Co., Inc.
1958: 17 Jan., 162; 21 Feb., 420; 8 Aug., 318

National Instrument Co.
1957: 25 Oct., 889

Palo Laboratory Supplies, Inc.
1958: 25 July, 211

Phipps & Bird, Inc.
1957: 25 Oct., 863

Research Specialties Co.
1957: 15 Nov., 1030
1958: 3 Jan., 44; 28 Feb., 446

Thomas, Arthur H., Co.
1958: 11 Apr., 832; 12 Sept., 620

POLARIMETERS

Fish-Schurman Corp.
1957: 25 Oct., 889

Kern Co.
1957: 25 Oct., 857
1958: 21 Feb., 423

Leitz, E., Inc.
1958: 26 Sept., 689

Zeiss, Carl, Inc.
1957: 22 Nov., 1049; 6 Dec., 1150
1958: 21 Mar., 620; 16 May, 1138; 8 Aug., 323

POLAROGRAPHS

Sargent, E. H., & Co.
1957: 25 Oct., 797
1958: 24 Jan., 170; 13 June, 1363

Standard Scientific Supply Corp.
1958: 21 Mar., 618

POWER PACKS

Electronic Measurements Co., Inc.
1957: 25 Oct., 865; 6 Dec., 1206

PRESSURE APPARATUS

Parr Instrument Co.
1957: 25 Oct., 871

PROJECTORS

Bausch & Lomb Optical Co.
1957: 1 Nov., 938; 6 Dec., 1158; 27 Dec., 1354
1958: 31 Jan., 214; 18 July, 114; 12 Sept., 568; 10 Oct., 808

Hofmann, Alfred, & Co.
1957: 25 Oct., 883

Leitz, E., Inc.
1958: 31 Jan., 211; 28 Feb., 447; 20 June, 1413; 10 Oct., 801

Zeiss, Carl, Inc.
1957: 25 Oct., 787

PUMPS

Harvard Apparatus Co., Inc.
1958: 23 May, 1259

New Brunswick Scientific Co.
1958: 11 July, 94

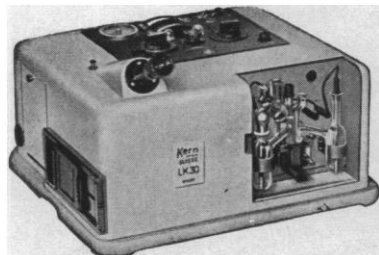
Phipps & Bird, Inc.
1958: 18 Apr., 886; 4 July, 39; 18 July, 159; 26 Sept., 728

Scott-Mitchell House, Inc.
1958: 3 Jan., 43

YOU SAID IT!

at the Kern booth at the recent Congress at Vienna, where you expressed keen interest in and mentioned the demand here for the

KERN LK 30 MICRO-ELECTROPHORESIS APPARATUS



Now we can tell you that here is an outstandingly reliable pilot instrument. Using only 0.1 cc. of sample, it clearly shows in the eyepiece, each and every component over the entire horizontal cross-section of the cell. You press a button and the built-in camera makes a permanent record, suitable for plotting percentages. Other advantages include small size, actual portability, and speed.

Bulletin Med 505 gives more details. Ask us for it.

Ask, too, for KP 567 describing the KERN FULL-CIRCLE POLARIMETER (now equipped with 30 mm. i.d. trough for "standard" tubes).

Sole National Agents

KERN COMPANY

121 Nassau St., New York 38

British Information Services

45 Rockefeller Plaza, New York 20

Agents for H.M. Stationery Office

ON THE DYNAMICS OF EXPLOITED FISH POPULATIONS

by R. J. H. Beverton and S. J. Holt \$22.68

PIEZOELECTRICITY

Selected engineering reports \$13.50

SURFACE ENERGY OF SOLIDS

by V. D. Kuznetsov \$ 1.53

THE CALCULATIONS OF DEFORMATIONS OF WELDED METAL STRUCTURES

by N. O. Okerblom \$ 2.70

SELECTED ABSTRACTS OF ATOMIC ENERGY PROJECT UNCLASSIFIED REPORT LITERATURE IN THE FIELD OF RADIATION CHEMISTRY

compiled by R. W. Clarke. Bibliog. \$ 5.04

RESEARCH FOR INDUSTRY. A SUMMARY OF WORK DONE BY THE INDUSTRIAL RESEARCH ASSOCIATIONS IN THE GOVERNMENT SCHEME

\$ 1.35

Prices do not include postage

Catalogs available

Sigmamotor, Inc.

1958: 7 Mar., 541; 5 Sept., 541

PUMPS, VACUUM

Central Scientific Co.

1957: 25 Oct., 770

1958: 20 June, 1455; 18 July, 167; 19 Sept., 677

Consolidated Electrodynamics Corp., Rochester Div.

1958: 17 Jan., 161; 25 Apr., 1011; 16 May, 1187; 15 Aug., 369; 19 Sept., 673

Little, Arthur D., Inc., Engineering Div.

1957: 25 Oct., 784

National Research Corp., NRC Equipment Corp.

1958: 14 Feb., 348; 11 July, 98; 26 Sept., 724; 3 Oct., 787

Schaar and Co.

1958: 7 Mar., 536

Standard Scientific Supply Corp.

1957: 6 Dec., 1202

1958: 15 Aug., 374

Welch, W. M., Manufacturing Co.

1958: 6 June, 1349; 4 July, 37; 1 Aug., 261

PYROMETERS

Cambridge Instrument Co., Inc.

1957: 6 Dec., 1152

RADIATION COUNTERS

Anton Electronic Laboratories, Inc.

1958: 12 Sept., 619

Applied Physics Corp.

1957: 6 Dec., 1193

Atomic Accessories, Inc.

1957: 25 Oct., 890

Baird-Atomic, Inc.

1957: 25 Oct., 774; 29 Nov., 1131

1958: 14 Feb., 354

Borg-Warner Corp., BJ Electronics

1958: 18 Apr., 887

Cambridge Instrument Co.

1957: 25 Oct., 869

Nuclear-Chicago Corp.

1957: 25 Oct., 799; 29 Nov., 1090; 27 Dec., 1315

1958: 21 Mar., 664; 25 Apr., 900; 20 June, 1464; 29 Aug., 492; 17 Oct., 924

Nuclear Corporation of America, Inc.,

NRD Instrument Co.

1957: 25 Oct., 790

Nuclear Measurements Corp.

1958: 27 June, 1512; 25 July, 208

Packard Instrument Co.

1957: 25 Oct., 882; 6 Dec., 1201

1958: 21 Feb., 428; 4 Apr., 767; 25 Apr., 1016; 23 May, 1210; 18 July, 112; 15 Aug., 334; 10 Oct., 806

Philips Electronics, Inc.

1957: 25 Oct., 782; 8 Nov., 950; 22 Nov., 1047

Technical Measurement Corp.

1958: 7 Mar., 494; 16 May, 1144; 27 June, 1470; 8 Aug., 276; 5 Sept., 502

Tracerlab, Inc.

1957: 20 Dec., 1268

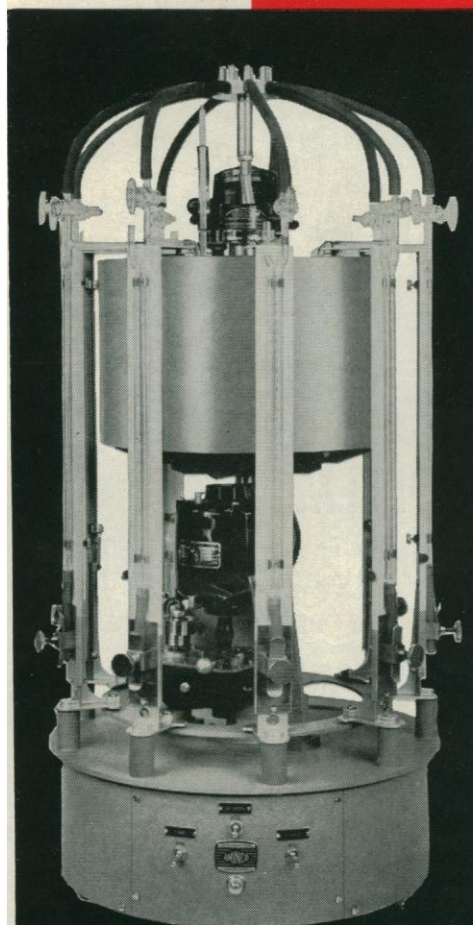
1958: 24 Jan., 202; 18 Apr., 891; 19 Sept., 679

RADIATION HAZARD CONTROLS

Controls for Radiation, Inc.

1958: 10 Jan., 50; 9 May, 1124; 23 May, 1251; 13 June, 1399; 18 July, 164; 10 Oct., 848

MOST COMPACT ON MARKET!



Aminco-Lardy Warburg Apparatus

Cat. No. 5-140 Warburg, Aminco-Lardy—nine stations; equipped with bi-metal thermoregulator, but without manometers, supports and vessels which must be ordered separately.

The same excellence of design, workmanship and materials that are built into Aminco's other time-proven Warburg instruments for manometric research are now incorporated into its newest member of the family, the Bench Model Warburg Apparatus.

The overall diameter of 16 inches and total weight of 63 lbs. make this Warburg the smallest and lightest commercially-available instrument of its type on the market. It is especially useful where lab space is limited, and ideal for classroom instruction.

Nine manometer stations are provided to accommodate four pairs of operating manometers and one thermobarometer.

Designed to maintain close temperature control, the difference in temperature measured between any two points at an operational depth in the bath is less than 0.01°C.

Shaking of flasks is adjustable in both frequency and amplitude, and each manometer can be easily removed to provide accessibility to individual flasks without disturbing remaining samples.

Temperature range: Ambient to 50°C.

Power requirement: 115 v., 60-cycle, a-c.

WARBURG

APPARATUS

For

Micro-Respiration Studies



AMERICAN INSTRUMENT CO., INC.
8030 Georgia Ave., Silver Spring, Maryland

RARE EARTHS

Lindsay Chemical Co.
1957: 15 Nov., 994

RARE GASES

Union Carbide Corp., Linde Co. Div.
1958: 7 Mar., 543; 2 May, 1073

RECORDERS, GRAPHIC

Foringer & Co., Inc.
1958: 25 Apr., 1015
Gilson Medical Electronics
1958: 18 July, 164; 15 Aug., 371; 26 Sept., 726
Stoelting, C. H., Co.
1958: 15 Aug. 371

Harvard Apparatus Co., Inc.

1958: 24 Jan. 204
Mandrel Industries, Inc.
1958: 2 May, 1066
Photovolt Corp.
1957: 25 Oct., 877; 8 Nov., 985; 6 Dec., 1205
1958: 31 Jan., 251; 21 Feb., 433; 21 Mar. 657; 18 Apr., 885; 23 May, 1251; 20 June, 1455; 18 July, 167; 22 Aug., 431; 26 Sept., 731
Sanborn Co.
1958: 11 Apr., 780
Sargent, E. H., & Co.
1957: 25 Oct., 797
1958: 21 Feb., 379; 11 July, 54; 5 Sept., 555

Stoelting, C. H., Co.

1957: 25 Oct., 881; 1 Nov., 937; 15 Nov., 1029; 29 Nov., 1129
1958: 28 Mar., 713; 25 Apr., 999; 20 June, 1449

RECORDING EQUIPMENT, BIO-PHYSICAL

American Electronic Laboratories, Inc.
1957: 25 Oct., 885
Sanborn Co., Medical Div.
1957: 25 Oct., 793; 1 Nov., 898; 22 Nov., 1045; 6 Dec., 1149; 20 Dec., 1269
1958: 17 Jan., 111; 6 June, 1314; 18 July, facing 137; 15 Aug., 327; 12 Sept., 562
Technical Measurement Corp.
1958: 11 July, 58
Yellow Springs Instrument Co., Inc.
1957: 6 Dec., 1199

REFRACTOMETERS

Leitz, E., Inc.
1958: 26 Sept., 689
Zeiss, Carl, Inc.
1957: 22 Nov., 1049

RESIN REACTION APPARATUS

Scientific Glass Apparatus Co.
1958: 13 June, 1402

ROTORS

Beckman Instruments, Inc., Spinco Div.
1957: 25 Oct., 785; 6 Dec., 1147
1958: 17 Oct., 862
Lourdes Instrument Corp.
1958: 25 Apr., 924
Sorrall, Ivan, Inc.
1957: 25 Oct., 791

SCALES

Exact Weight Scale Co.
1958: 28 Mar., 715; 18 Apr., 883; 2 May, 1072
National Instrument Co.
1957: 25 Oct., 889
Welch, W. M., Manufacturing Co.
1958: 4 Apr., 769

SHAKERS

Central Scientific Co.
1957: 25 Oct., 770
Laboratory Glass and Instrument Corp.
1957: 25 Oct., 885
1958: 25 Apr., 908; 12 Sept., 560
New Brunswick Scientific Co.
1958: 2 May, 1075; 9 May, 1123; 23 May, 1257; 20 June, 1449; 25 July, 216; 5 Sept., 551
Parr Instrument Co.
1957: 25 Oct., 871
Research Specialties Co.
1957: 25 Oct., 855
1958: 25 Apr., 995
Schaar and Co.
1957: 25 Oct., 871

SHOCK TESTING APPARATUS

Consolidated Electrodynamics Corp., Rochester Div.
1958: 20 June, 1459

SINKS

Alberene Stone Corp.
1958: 4 Apr., 765; 19 Sept., 672

When **SMALL PARTICLES** become **BIG PROBLEMS**

Use **MILLIPORE FILTERS**

For ANALYSIS . . . For PROCESS FILTRATION

Remove ALL particles from liquids or gases
down to 0.01 MICRON!

MF® MILLIPORE FILTER Membranes GIVE:

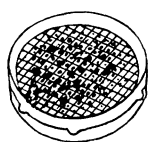
EXTRAORDINARILY HIGH FLOW RATES — 80% pore volume.
ABSOLUTE RETENTION — by true "screening" action.
10 POROSITY GRADES — ranging from 0.01 μ to 5.0 μ .



In the Fields of . . . **RADIOACTIVITY**

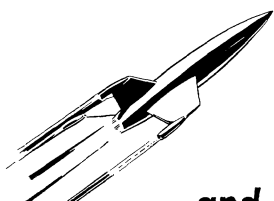
Precise analyses of particulate radioactivity in liquids and gases. Surface retention on MF results in negligible absorption by filter of alpha and beta energies during counting. MF filtration provides reactor cooling water free of all particulate contamination.

BACTERIOLOGY



Bacterial water analyses in only 18 hours with 4 to 5 times more accuracy. Positive TB cultures grow on the MF in 3-5 days instead of usual 18-28 days. Pharmaceutical sterility testing. Brewing quality control. Heat-labile culture media and similar materials reliably sterilized by MF filtration at flow rates up to 10 liters per minute.

MISSILES — AVIATION



S.A.E. and A.S.T.M. Methods for analysis of particulate contamination in hydraulic fluids and hydrocarbons specify Millipore Filters. MF becomes completely transparent for microscopy by applying immersion oil. MF ashes to 0.0000 grams/cm². MF flush-filtration of missile system fluids eliminates hydraulic servo valve wear and failure.

. . . and many, many others.

Write TODAY for FREE BROCHURE, TECHNICAL BIBLIOGRAPHY,
and Complete Information on MF® Applications in YOUR Field of Interest.



MILLIPORE FILTER CORPORATION

BEDFORD, MASSACHUSETTS, U.S.A.

Sole Manufacturer and Distributor of

MF® MILLIPORE and MICROWEB® FILTERS

SKELETON MODEL

Andrew Technical Co.

1958: 7 Feb., 297

Welch, W. M., Manufacturing Co.

1958: 7 Feb., 303; 3 Oct., 783

SLIDE RULES

Garfield, Oliver, Co., Inc.

1958: 21 Feb., 428; 9 May, 1120

SPECTROMETERS

Biddle, James G., Co.

1957: 25 Oct., 885

Kahl Scientific Instrument Corp.

1957: 25 Oct., 872

Packard Instrument Co.

1957: 15 Nov., 1030; 6 Dec., 1201

1958: 7 Feb., 300; 21 Feb., 428; 25

Apr., 1004; 2 May, 1074; 13 June, 1368;

1 Aug., 262; 15 Aug., 334; 19 Sept., 628;

10 Oct., 806

Perkin-Elmer Corp., Instrument Div.

1958: 18 Apr., 895

Polarad Electronics Corp., Scientific
Instruments Div.

1958: 21 Feb., 424

Technical Measurement Corp.

1958: 25 Apr., 932

Varian Associates, Instrument Div.

1957: 27 Dec., 1358

1958: 14 Feb., 306; 25 Apr., 922; 20
June, 1463; 15 Aug., 332; 19 Sept., 623

SPECTROPHOTOMETERS AND ACCESSORIES

Applied Physics Corp.

1957: 25 Oct., 873

1958: 21 Feb., 435; 7 Mar., 535; 25
July, 213

Axler Associates, Inc.

1958: 25 Apr., 1002

Beckman Instruments, Inc., Scientific
Instruments Div.

1957: 25 Oct., 801

1958: 7 Mar., 551; 2 May, 1018; 12
Sept., 615

Coleman Instruments, Inc.

1957: 15 Nov., 1034; 13 Dec., 1259

1958: 25 Apr., 1007; 20 June, 1453;
22 Aug., 429; 2 Sept., 607

Gilson Medical Electronics

1958: 29 Aug., 484

New York Laboratory Supply Co., Inc.

1958: 25 Apr., 995

Perkin-Elmer Corp., Instrument Div.

1957: 25 Oct., 789; 22 Nov., 1046

1958: 17 Jan., 167; 7 Mar., 492; 23
May, 1204; 15 Aug., 379; 5 Sept., 496

Will Corp.

1958: 18 July, 157

Zeiss, Carl, Inc.

1958: 17 Jan., 168; 6 June, 1312

SPECTROSCOPES

Bausch & Lomb Optical Co.

1957: 6 Dec., 1158

1958: 12 Sept., 568

Borg-Warner Corp., BJ Electronics

1958: 26 Sept., 734

Edmund Scientific Co.

1958: 3 Oct., 795

Leitz, E., Inc.

1958: 26 Sept., 689

Varian Associates, Instrument Div.

1957: 29 Nov., 1091

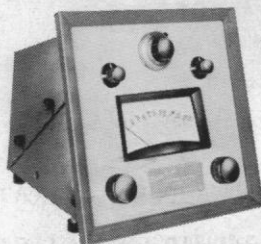
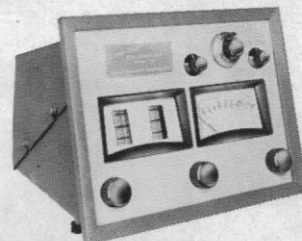
Zeiss, Carl, Inc.

1958: 21 Mar., 620; 8 Aug., 323

Therma Bridge

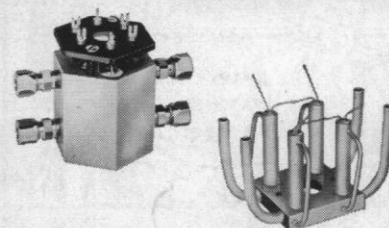
THERMAL CONDUCTIVITY EQUIPMENT

NEW...
design
concepts



COMPLETE line
of instruments
and cells

for thermal
conductivity
measurements

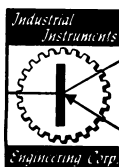


Now... a complete line of precision instruments housed in advanced, functionally designed cabinets with latest refinements in circuitry and design.

Advanced design "Therma Bridge" sensing cells, the heart of all gas conductivity measurements are available in two metal mass weights. A heavy-weight, open core, hexagonal cell and light-walled, individual cavity cell. Both cells are available with either hot-wire or thermistor sensing elements.

Instruments include Therma Bridge Gas Analyzer for monitoring purity values in gas streams and for wide applications in gas impurity analysis; Therma Bridge Stabilized Temperature Sensing Unit for use in low impurity percentages in gas analysis and chromatography, as well as for measurements at elevated temperatures; Therma Bridge Power Supply and Control Circuit Unit the power source for all thermal conductivity sensing cells.

All equipment is designed for rack or individual mounting. Special custom design service for special applications. Write today for complete technical details on the full line of Therma Bridge Gas Thermal Conductivity Instruments and Cells to...



Industrial Instruments Engineering Corp.

89 Commerce Road, Cedar Grove, Essex County, N. J.

EDIE FILTER

...HELPS SOLVE A WHOLE
YEAR'S PROBLEMS.

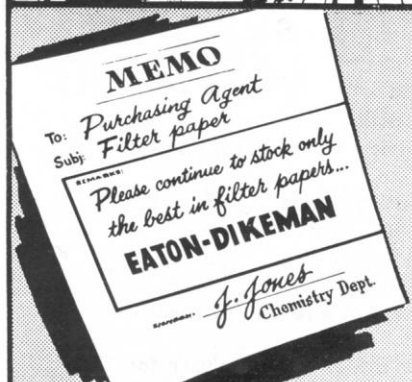


THESE E-D PAPERS
FILTER FAST.

AND
THEY GIVE GOOD
CLEAR FILTRATES.

THEY HOLD UP WELL UNDER
REPEATED WASHINGS, TOO.

WHICH REMINDS ME
OF AN IMPORTANT
MEMO.



2 WEEKS LATER



LOOKS LIKE YOU'LL BE A
TOP-GRADE STUDENT AGAIN
THIS YEAR.

A LOT OF THE CREDIT GOES TO
THOSE TOP-GRADE
EATON-DIKEMAN
FILTER PAPERS.



Write for FREE Sample Filter Papers to
THE EATON-DIKEMAN CO.
Filtertown
Mt. Holly Springs, Pa.

STERILIZER EQUIPMENT

American Sterilizer Co., Scientific Div.
1958: 7 Feb., 259; 28 Mar., 669; 20
June, 1411; 18 July, 107; 22 Aug., 382
Wilmot Castle Co.
1957: 25 Oct., 854
1958: 6 June, 1308, 1309; 4 July, 2;
5 Sept., 497

STETHOSCOPES, AMPLIFYING

Sanborn Co.
1957: 25 Oct., 793; 1 Nov., 898

STILLS

**Consolidated Electrodynamics Corp.,
Rochester Div.**
1958: 21 Feb., 429; 18 July, 161
Smith, Arthur F., Co.
1957: 25 Oct., 792

STIRRERS

Ace Glass, Inc.
1957: 22 Nov., 1082
1958: 17 Jan., 160
Central Scientific Co.
1958: 13 June, 1403; 3 Oct., 785
Palo Laboratory Supplies, Inc.
1958: 11 Apr., 824
Parr Instrument Co.
1957: 25 Oct., 871
Tri-R Instruments
1957: 25 Oct., 874
Welch, W. M., Manufacturing Co.
1958: 3 Jan., 46

TELESCOPES

Edmund Scientific Co.
1957: 1 Nov., 938; 6 Dec., 1200
1958: 3 Jan., 47; 7 Feb., 258; 7 Mar.,
496; 11 Apr., 831; 9 May, 1086; 6 June,
1310; 11 July, 103; 8 Aug., 272; 5 Sept.,
498; 3 Oct., 795
Fecker, J. W., Inc.
1957: 25 Oct., 870; 22 Nov., 1080; 6
Dec., 1199; 20 Dec., 1306
1958: 3 Jan., 42; 24 Jan., 206; 7 Feb.,
299
**United Scientific Co., Unitron Instrument
Div.**
1957: 8 Nov., 986; 22 Nov., 1082; 6
Dec., 1206
1958: 28 Feb., 481; 28 Mar., 712; 25
Apr., 999; 30 May, 1298; 13 June, 1403;
3 Oct., 791

TEMPERATURE CONTROL EQUIPMENT

Blue M Electric Co.
1958: 2 May, 1075
Hallikainen Instruments
1958: 27 June, 1510
Thomas, Arthur H., Co.
1958: 7 Mar., 552
Yellow Springs Instrument Co.
1958: 17 Oct., 909

TENSIOMETERS

National Instrument Laboratories, Inc.
1957: 15 Nov., 1034

THERMOMETERS

Advanced Instruments, Inc.
1957: 25 Oct., 856

Sargent, E. H., & Co.

1958: 18 Apr., 836
Tri-R Instruments
1957: 25 Oct., 874
Yellow Springs Instrument Co., Inc.
1957: 6 Dec., 1199

THERMOSTATS

Brinkmann Instruments, Inc.
1957: 1 Nov., 937; 29 Nov., 1128
1958: 17 Jan., 109

TITRATION EQUIPMENT

Brinkmann Instruments, Inc.
1958: 24 Jan., 199
California Laboratory Equipment Co.
1958: 11 Apr., 823; 9 May, 1123; 6
June, 1354; 4 July, 37; 1 Aug., 264; 5
Sept., 545; 3 Oct., 787
Central Scientific Co.
1957: 25 Oct., 771
1958: 27 June, 1507; 10 Oct., 851
Corning Glass Works
1958: 13 June, 1399; 17 Oct., 911
Laboratory Glass & Instruments Corp.
1958: 25 Apr., 909; 23 May, 1253;
25 July, 170; 12 Sept., 560
Linbro Chemical Co.
1958: 10 Jan., 97; 21 Feb., 427; 14
Mar., 609; 25 Apr., 1009
Palo Laboratory Supplies, Inc.
1958: 7 Mar., 536; 25 Apr., 985
Phipps & Bird, Inc.
1958: 17 Jan., 110; 2 May., 1067; 19
Sept., 675
Sargent, E. H., & Co.
1957: 6 Dec., 1154
1958: 21 Mar., 663; 8 Aug., 273; 3
Oct., 745
Scientific Industries, Inc.
1958: 27 June, 1512
Standard Scientific Supply Corp.
1958: 3 Oct., 788

TRANSDUCERS

Decker Corp.
1958: 24 Jan., 172; 21 Feb., 365; 21
Mar., 619
Sanborn Co.
1958: 14 Feb., 359; 21 Feb., 376; 11
Apr., 780; 9 May, 1084

TRANSPARENCIES

Central Scientific Co.
1957: 13 Dec., 1218
1958: 10 Jan., 103; 21 Feb., 368; 28
Mar., 719; 4 Apr., 723
Polaroid Corp.
1957: 25 Oct., 773

TUBING

Drummond Scientific Co.
1958: 17 Oct., 909
Nalge Co., Inc.
1957: 25 Oct., 864
1958: 14 Mar., 562; 19 Sept., 663

VACUUM DRY BOXES

Blickman, S., Inc.
1958: 21 Feb., 436; 28 Mar., 714; 18
Apr., 889; 23 May, 1255; 20 June, 1458;
18 July, 156; 22 Aug., 424; 19 Sept.,
678; 10 Oct., 853
Lennard, P. M., Co., Inc.
1958: 25 Apr., 993

VACUUM EQUIPMENT

Central Scientific Co.

1958: 18 July, 167

Consolidated Electrodynamics Corp., Rochester Div.

1958: 17 Jan., 161; 21 Feb., 429; 7 Mar., 545; 21 Mar., 659; 15 Aug., 369; 19 Sept., 673; 17 Oct., 915

National Research Corp., NRC Equipment Corp.

1957: 1 Nov., 937; 6 Dec., 1211

1958: 3 Jan., 41; 28 Mar., 709; 9 May, 1124; 6 June, 1354; 8 Aug., 313; 5 Sept., 542; 26 Sept., 724; 3 Oct., 787

United Scientific Co., Unitron Instrument Div.

1958: 15 Aug., 331

Welch, W. M., Manufacturing Co.

1958: 1 Aug., 261

VALVES

Phipps & Bird, Inc.

1957: 15 Nov., 1029

VISCOMETERS

Polarad Electronics Corp., Scientific Instruments Div.

1958: 25 Apr., 1000

VOLTAGE STABILIZERS

New York Laboratory Supply Co., Inc.

1958: 25 Apr., 995

WARBURG APPARATUS

American Instrument Co., Inc.

1958: 20 June, 1451; 15 Aug., 330

Gilson Medical Electronics (GME)

1958: 25 Apr., 993; 23 May, 1257; 6 June, 1347; 4 July, 37; 1 Aug., 259; 12 Sept., 616; 10 Oct., 854

Will Corp., Bronwill Scientific Div.

1958: 14 Feb., 349; 16 May, 1195; 19 Sept., 674; 3 Oct., 784

WARING BLENDERS AND ACCESSORIES

Waring Products Corp.

1958: 21 Feb., 366; 25 Apr., 920

Will Corp., Bronwill Scientific Div.

1958: 18 Apr., 890

WEIGHTS

Ainsworth, Wm., & Sons, Inc.

1958: 18 July, 153; 19 Sept., 669

Gurley, W. & L. E.

1958: 17 Oct., 918

Welch, W. M., Manufacturing Co.

1958: 7 Mar., 532; 4 Apr., 769; 5 Sept., 540

WIRE CUTTERS

Welch, W. M., Manufacturing Co.

1957: 25 Oct., 853

X-RAY EQUIPMENT

Philips Electronics, Inc.

1957: 8 Nov., 950; 22 Nov., 1047; 6 Dec., 1140

ZONE MELTING APPARATUS

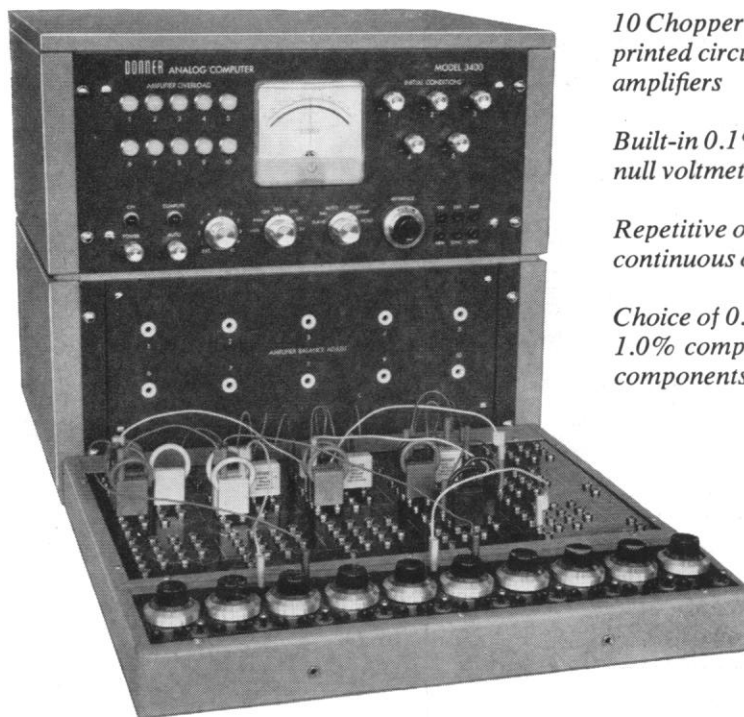
Research Specialties Co.

1957: 1 Nov., 935

1958: 13 June, 1401; 29 Aug., 483

24 OCTOBER 1958

Introducing the Donner 3400



*10 Chopper Stabilized
printed circuit
amplifiers*

*Built-in 0.1%
null voltmeter*

*Repetitive or
continuous operation*

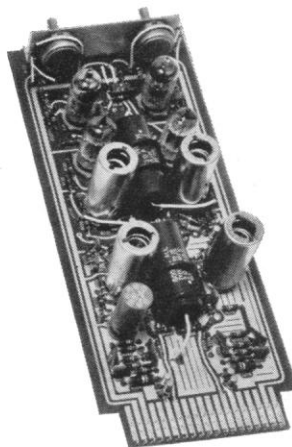
*Choice of 0.1% or
1.0% computing
components*

A NEW Desktop Computer WITH CHOPPER STABILIZED AMPLIFIERS

Donner's new 3400 analog computer combines high accuracy, flexibility, and economy. From its inception, design philosophy dictated the creation of a computer whose performance compared favorably with larger and more expensive equipment.

A complete Model 3400 consists of 10 chopper stabilized amplifiers, built-in null voltmeter and cyclic reset generator, 5 initial condition power supplies and supporting control and metering circuitry. Price of the basic Model 3400 is \$2,190. The Model 3430 Removable Problem Board sells for \$95. The purchaser can buy either 0.1% or 1.0% passive plug-in computing components according to the requirements of his problems. Two or more 3400's can be slaved together and operated from any one computer. Standard companion non-linear equipment such as function generators, and multipliers is available for operation with the 3400.

Donner engineering representatives are located in principal areas throughout the western world. Your nearest representative will be happy to arrange a demonstration. For the name of your nearest representative and complete technical information on the new Donner 3400, please address Dept. 5010 A



Model 3101 plug-in amplifier: dc gain in excess of 50 million; maximum offset of a unity inverter, less than 200 μ v/day; drift of unity integrator, less than 100 μ v/sec; phase shift of unity inverter, less than 0.5 degrees at 1 kc. These amplifiers are also available for separate sale.

**DONNER SCIENTIFIC
COMPANY**

CONCORD, CALIFORNIA

Phone MUIberry 2-6161 • Cable "DONNER"

8

SONOCEN ULTRASONIC CLEANING EQUIPMENT

Complete range of units for batch or conveyorized micro-cleaning, decontamination, of laboratory glassware, apparatus and instruments—electrical, electronic, mechanical parts.

GENERATORS



Generators AP-50, AP-25, AP-10 with Transducer/Tank units.

MODEL	TANK VOLUME (Gals)	RF Avg	OUTPUT Peak (Watts)
AP-10	0.6-6	65	260
AP-25	1.2-12	125	500
AP-50	2.5-25	250	1,000
AP-100	5-50	500	2,000
AP-200	10-100	1000	4,000
AP-500	30-300	3000	12,000

TRANSDUCERS

Immersible Transducers hermetically sealed in Stainless Steel: integral Transducer/Tank units from 1/2 to 25 gallon capacity.

COMPLETE SYSTEMS

C-Series Cabinet Units, R-Series Roll-Around units, with optional filters, rinse and dryers.

Write for 24-Page Book on
Ultrasonic Cleaning

**BRANSON ULTRASONIC
CORPORATION**
35 Brown House Rd. • Stamford • Conn.

VENOMS

AAAS Symposium Volume No. 44

6" x 9", 480 pp., 113 illus.,
index, cloth, Dec. 1956

**Price \$9.50. AAAS Members'
cash order price \$8.25**

First International Conference on Venoms, with 95 contributors from 18 countries. Comprehensive coverage of all aspects of the problem.

This book covers poisonous fishes and marine organisms, many species of venomous snakes, the Gila monster, toads, scorpions, spiders, caterpillars, wasps and other venom-bearing insects; hyaluronidase-like substances and other spreading factors in venoms; various chemical components of venoms, coagulant and anticoagulant factors, antigenic principles; various experimental and suggested clinical uses of venoms; clinical considerations: mortality rates, treatment of many kinds of envenomation; new developments in serotherapy and types of supplementary medication; dangers of refrigeration for treatment.

Of special interest to: Physicians, pharmacologists, chemists, and zoologists.

AAAS

1515 Mass. Ave., NW, Washington 5, D.C.

ADVERTISERS APPEARING IN "THE MARKET PLACE" SECTION OF *SCIENCE*, 25 OCT. 1957 THROUGH 17 OCT. 1958

Abrahams Magazine Service
56 E. 13th St., New York 3, N.Y.

Albino Farms
P.O. Box 331, Red Bank, N.J.

American-Lincoln Incubator Co.
645 Somerset St., New Brunswick, N.J.

Armer Enterprises
Croton Falls, N.Y.

Bio-Rad Laboratories
800 Delaware St., Berkeley, Calif.

Bio-Research Consultants
9 Commercial Ave., Cambridge 41, Mass.

Canner's, Inc.
618 Parker St., Boston 20, Mass.

Charles River Breeding Laboratories, Inc.
Wilmington, Mass.

Cherry Hill Farms
P.O. Box 840, Camden 1, N.J.

Davidor Advertising Agency
60 E. 42 St., New York 17, N.Y.

Electro-Medical Laboratory, Inc.
South Woodstock, Vt.

Esbe Laboratory Supplies
459 Bloor St., W., Toronto, Canada

Ferner, R. Y., Co.
110 Pleasant St., Malden 48, Mass.

Food and Drug Research Laboratories, Inc.
Maurice Ave. at 58 St., Maspeth 78, N.Y.

Gurley, W. & L. E.
Troy, N.Y.

Hoeltge Bros., Inc.
1919 Gast St., Cincinnati 4, Ohio

Holtzman Rat Co.
Route 4, Badger Lane, Madison 5, Wis.

Hormone Assay Laboratories, Inc.
8159 S. Spaulding Ave., Chicago 29, Ill.

Huntingdon Farms, Inc.
2548 N. 27 St., Philadelphia 32, Pa.

Isotope Chemical Co.
1952 W. Irving Park Rd., Chicago 13, Ill.

Isotopes Specialties Company, Inc.
P.O. Box 688, Burbank, Calif.

Ithaca Dog Farm
R.R. #1, Ithaca, N.Y.

Johnson, Walter J.
111 Fifth Ave., New York 3, N.Y.

LaMotte Chemical Products Co.
Chestertown, Md.

LaWall & Harrison
1921 Walnut St., Philadelphia 3, Pa.

Leiderman, P. Herbert
61 Frost St., Cambridge, Mass.

Lyon, Ray
150 S. Middle Neck Rd., Great Neck, N.Y.

Manor Farms, Inc.
Staatsburg, N.Y.

Nelson Co.
7810 Greenwood Ave., Washington 12, D.C.

New Drug Institute
130 E. 59 St., New York 22, N.Y.

Northern Book House
1334 Bloor St., W., Toronto, Canada

Oster's
Box 111, Times Square Station, New York 36, N.Y.

Oxford Laboratories
111 Sutter St., San Francisco 4, Calif.

Pageant Press
101 Fifth Ave., New York 3, N.Y.

Palo Laboratory Supplies
81 Reade St., New York 17, N.Y.

Research Animals, Inc.
3401 Fifth Ave., Pittsburgh 13, Pa.

Rolfsmeyer, Dan, Co.
Route 3, Syene Rd., Madison 5, Wis.

Rozsa, George L.
143 Linwood Ave., Buffalo 9, N.Y.

Scientific Equipment Co.
23 N. Hawthorne Lane, Indianapolis, Ind.

Scientific Laboratory Services
2 Melissa Way, Terre Haute, Ind.

Sprague Dawley, Inc.
P.O. Box 2071, Madison 5, Wis.

Stocker, J. H.
P.O. Box 4, Ramsey, N.J.

Taconic Farms
Germantown, N.J.

Truesdail Laboratories, Inc.
4101 N. Figueroa St., Los Angeles 65, Calif.

University of Colorado
Boulder, Colo.

University of Texas
Texas Medical Center, Houston 25, Tex.

Vantage Press, Inc.
120 W. 31 St., New York 1, N.Y.

Wisconsin Alumni Research Foundation
P.O. Box 2217, Madison 1, Wis.

Yellow Springs Instrument Co., Inc.
P.O. Box 106, Yellow Springs, Ohio

Zator Co.
140 1/2 Mt. Auburn St., Cambridge 38, Mass.

Zeehandelaar, F. J., Inc.
286 Clove Rd., New Rochelle, N.Y.

*In the Laboratory . . . where optical quality counts
 . . . the trend is to **UNITRON** Microscopes*

**FREE
10 DAY TRIAL
ON ANY
UNITRON**

- POLARIZING MICROSCOPE**
MPS \$269
- BINOCULAR PHASE CONTRAST**
BMPE \$490
- BINOCULAR PHASE-CAMERA-MICROSCOPE**
BU-13 \$1580
- Polaroid Land Camera Attachment**
\$115
- STUDENT AUTO-ILLUMINATION MICROSCOPE**
MSA \$107
- STEREOSCOPIC MICROSCOPE**
MSHL \$267
- MICROSCOPE LAMP**
LS \$14.75
- LABORATORY MICROSCOPE**
MLK \$198
- Photomicrography Set**
ACA \$39.95
- Attachable Graduated Stage**
GR \$31.50
- BINOCULAR AUTO-ILLUMINATION**
BMLU \$425
- BINOCULAR INVERTED**
BMIC \$609

UNITRON offers an extensive line of Laboratory Microscopes & Accessories for Research, Industry and Education. Illustrated is a partial selection for biology, medicine, chemistry and related fields. UNITRON also has companion instruments for the metalworking industries.

Noted for optical quality . . . advanced optical and mechanical design . . . unique and convenient operational features . . . long wearing construction . . . attractive budget prices which include basic optics . . . these, together with years of proven instrument performance, are the reasons why . . .

THE TREND IS TO UNITRON!

UNITRON

INSTRUMENT DIVISION OF UNITED SCIENTIFIC CO.
 204-206 MILK STREET • BOSTON 9, MASSACHUSETTS

Please rush UNITRON's Microscope Catalog 41-3

Name _____
 Company _____
 Address _____
 City _____ State _____



Orthophot*

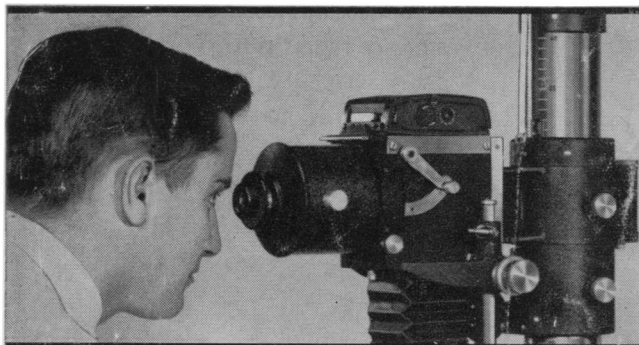
... universal photographic camera

for

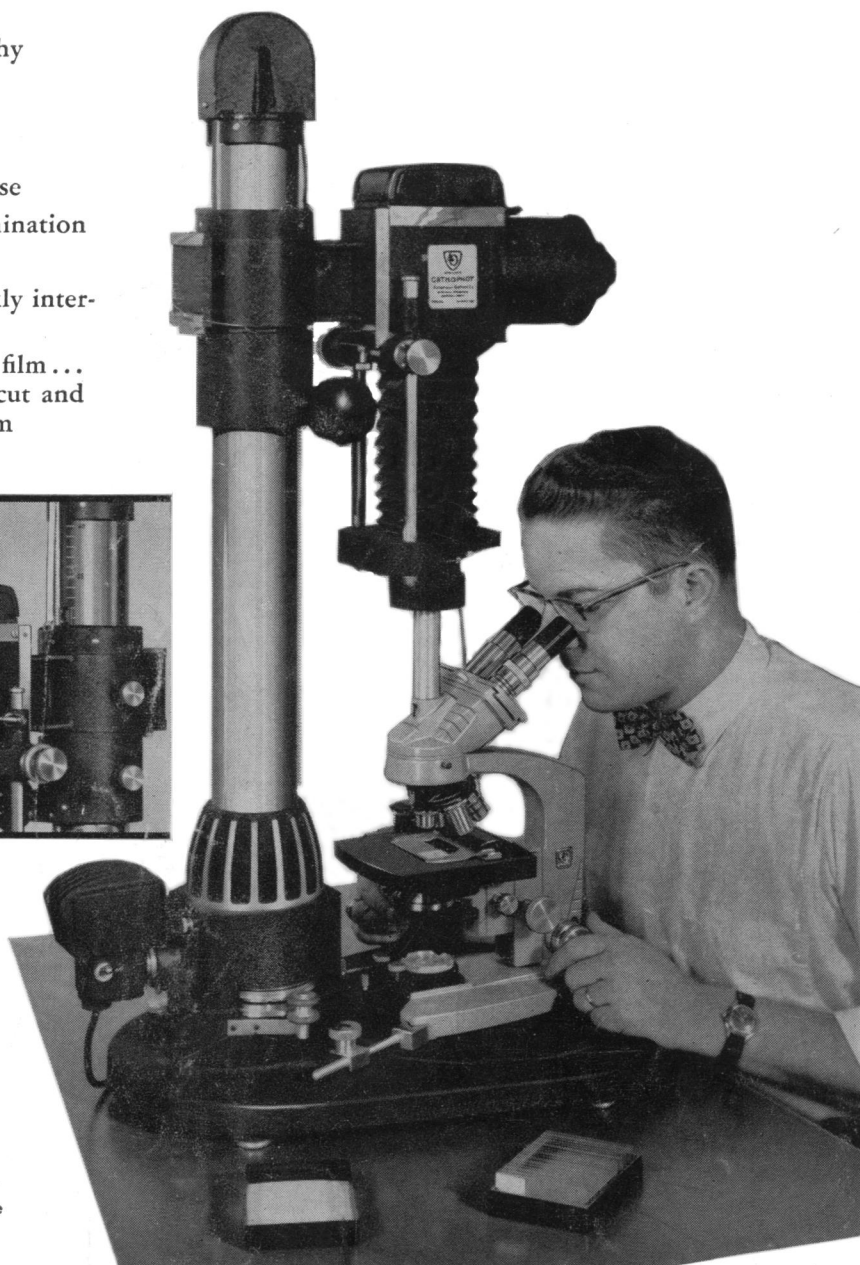
- Photomicrography
- Photomacrography
- General laboratory photography
- Cinemicrography

features

- Compact... sturdy... easy-to-use
- Integral KOEHLER type illumination
- Reflex-type camera
- Precision components... quickly interchangeable
- Uses black and white or color film... roll film No. 120, $2\frac{1}{4}" \times 2\frac{1}{4}"$, cut and packfilm $2\frac{1}{4}" \times 3\frac{1}{4}"$, 35mm film



Plus- unique built-in "SPLIT MICRON" telescope for convenient and positive focusing.



*Formerly available from Silge and Kuhne

American Optical
Company

INSTRUMENT DIVISION, BUFFALO 15, NEW YORK

Dept. J-4

Send Orthophot Brochure SB1300

Name _____

Address _____

City _____ Zone _____ State _____