

## NEW and completely revised!

14 Plates — Folding Map  
56 Text Illustrations  
Over 690 Pages

Twenty-two world famous specialists have participated to make this volume a classic. Editor Taylor has contributed 6 chapters and a glossary.

### Partial List of Contents

- GEOGRAPHY IN THE NINETEENTH CENTURY  
G. Tatham
- THE FRENCH SCHOOL OF GEOGRAPHY  
R. J. Harrison Church
- THE GERMAN SCHOOL OF GEOGRAPHY  
S. van Valkenburg
- THE WEST SLAV GEOGRAPHERS  
J. Kral and J. Kondracki
- THE PROGRESS OF GEOMORPHOLOGY  
S. W. Wooldridge
- GEOGRAPHICAL ASPECTS OF METEOROLOGY  
F. K. Hare
- SOILS AND THEIR GEOGRAPHICAL SIGNIFICANCE  
D. F. Putnam
- GEOGRAPHY AND ARCTIC LANDS  
A. L. Washburn
- GEOGRAPHY AND REGIONALISM  
E. W. Gilbert
- THE SOCIOLOGICAL ASPECTS OF GEOGRAPHY  
J. W. Watson
- GEOGRAPHY AND AVIATION  
Ellsworth Huntington
- GEOGRAPHY IN PRACTICE IN THE FEDERAL GOVERNMENT, WASHINGTON  
John K. Rose
- GEOPOLITICS AND GEOPACIFICS  
Griffith Taylor
- CARTOGRAPHY  
W. W. Williams
- THE GEOGRAPHICAL INTERPRETATION ON AIR PHOTOGRAPHY  
F. Walker
- THE RELATIONS OF GEOGRAPHY AND HISTORY  
H. C. Darby

\$10

Order today from your favorite Bookseller or

**PHILOSOPHICAL LIBRARY**  
Publishers

15 East 40 Street, Dept. A-47, New York 16, N.Y.  
Expedite Shipment by Prepayment

Michigan College, Kalamazoo). 26-30 Dec.

National Assoc. of Science Writers (J. Troan, Pittsburgh Press, Pittsburgh, Pa.).

National Council of Teachers of Mathematics (P. Peak, College of Education, Indiana Univ., Bloomington). 27 Dec.

National Geographic Soc. (W. R. Gray, NGS, 16th and M Sts., NW, Washington 6). 29 Dec.

National Science Teachers Assoc. (R. W. Schulz, Emmerich Manual Training High School, 2405 Madison Ave., Indianapolis 25). 26-30 Dec.

National Speleological Soc. (Brother G. Nicholas, LaSalle College, 20th and Olney Aves., Philadelphia 41, Pa.). 28 Dec.

Philosophy of Science Assoc. (C. W. Churchman, Case Inst. of Technology, Cleveland, Ohio).

Scientific Research Soc. of America, annual (D. B. Prentice, 56 Hillhouse Ave., New Haven 11, Conn.). 27 Dec.

Sigma Delta Epsilon, annual (Miss M. Chalmers, Dept. of Chemistry, Purdue Univ., Lafayette, Ind.). 26-30 Dec.

Sigma Pi Sigma (M. W. White, Pennsylvania State Univ., University Park). 27 Dec.

Society for the Advancement of Criminology (D. E. J. MacNamara, New York Inst. of Criminology, 40 E. 40 St., New York 16). 27-28 Dec.

Society for General Systems Research, annual (R. L. Meier, Mental Health Research Inst., Ann Arbor, Mich.).

Society for Industrial Microbiology, Washington Section (W. N. Ezekiel, Bureau of Mines, Washington 25).

Society for Investigative Dermatology (H. Beerman, Univ. of Pennsylvania School of Medicine, Philadelphia 3). 28-29 Dec.

Society of the Sigma Xi, annual (T. T. Holme, 56 Hillhouse Ave., New Haven 11, Conn.). 27 Dec.

Society of Systematic Zoology, annual (R. E. Blackwelder, Box 500, Victor, N.Y.). 26-31 Dec.

United Chapters of Phi Beta Kappa, annual address (C. Billman, 1811 Q St., NW, Washington, D.C.). 27 Dec.

27. Association for Symbolic Logic, Cambridge, Mass. (J. Barlaz, Rutgers Univ., New Brunswick, N.J.)

27-28. Linguistic Soc. of America, Chicago, Ill. (A. A. Hill, Box 7790, University Station, Austin 12, Tex.)

27-30. American Finance Assoc., annual, Philadelphia, Pa. (G. E. Hassett, Jr., New York Univ., 90 Trinity Pl., New York 6.)

28-29. American Folklore Soc., annual, Chicago, Ill. (M. Leach, Box 5, Bennett Hall, Univ. of Pennsylvania, Philadelphia 4, Pa.)

28-30. American Anthropological Assoc., annual, Chicago, Ill. (W. S. Godfrey, Jr., Logan Museum, Beloit College, Beloit, Wis.)

28-30. American Economic Assoc., annual, Philadelphia, Pa. (J. W. Bell, Northwestern Univ., Evanston, Ill.)

28-30. Archaeological Inst. of America, annual, Washington, D.C. (C. Boulter, 608, Univ. of Cincinnati Library, Cincinnati 21, Ohio.)

(See issue of 18 October for comprehensive list)

## EQUIPMENT NEWS

*The information reported here is obtained from manufacturers and from other sources considered to be reliable. Science does not assume responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to Science, Room 740, 11 W. 42 St., New York 36, N.Y. Include the name(s) of the manufacturer(s) and the department number(s).*

■ **ELECTROMETER-MEGOHMMETER** measures resistance from 5 Mohm to  $5 \times 10^9$  Mohm in nine decade ranges. The instrument consists of a cathode-follower electrometer with a series of input shunt resistors and a regulated 500-v power supply. Accuracy varies from 3 percent on the lower ranges to 10 percent on the highest. Open-circuit input-voltage drift rate is about 0.02 v/min. (Walter N. Trump, Dept. S684)

■ **RELAY**, of subminiature size, will provide continuous duty at 200°C and intermittent duty to 250°C. The coil assembly is hermetically isolated from the contact assembly to avoid contamination of contacts. Weight is 0.5 oz. (Reltron Corp., Dept. S687)

■ **ULTRASONIC PROCESSING TANKS** of 5-gal and 8-gal capacities operate at a frequency of 20 kcy/sec. The tanks operate with 400-w and 700-w generators, respectively. Treatment chambers, made of No. 302 stainless steel, are equipped with input and outlet drains. (General Ultrasonics Co., Dept. S691)

■ **VACUUM INDUCTION FURNACE** has a capacity of 12 lb of molten steel. Temperatures of 1700°C or higher, depending on crucible material, are produced. Pressure is maintained at 1  $\mu$ . Accessories include a special crucible for heat-treating, inert-gas introduction kit, and feed-through for power and water. (National Research Corp., Dept. S698)

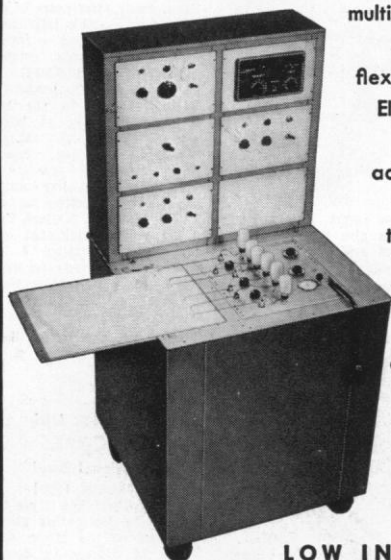
■ **POWER SUPPLY**, regulated by a transistor-magnetic amplifier, furnishes 0 to 60 v at 5 amp. Maximum ripple is 1 mv r.m.s. Line regulation is 5 mv static and less than 5 mv dynamic. Load regulation is less than 25 mv. (Perkin Engineering Corp., Dept. S699)

■ **VERTICAL AMPLIFIER** for a 10 Mcy/sec oscilloscope has input sensitivity of 5 mv/cm from d-c to 10 Mcy/sec. Drift after 1/2-hr warm-up is less than 1 cm/hr. Sensitivity is adjustable from 0.005 to 50 v/cm. (Hewlett-Packard Co., Dept. S701)

■ **DIRECT-WRITING OSCILLOGRAPH RECORDER** provides up to 19 channels of curvilinear recording on a 24.5-in. chart. Either ink or electric writing is available. Pen spac-

## MULTI-CHANNEL OSCILLOGRAPH

This new concept in direct writing Polygraphs provides a building block method enabling users to assemble



multi-channel recording systems of unusual flexibility and low cost. Electrical, pneumatic and mechanically actuated pen writers can be intermixed to achieve the best arrangement for any recording problem. Sensing devices, amplifiers, events markers, timers and other auxiliary devices are also available.

LOW IN PRICE

**C. H. STOELTING COMPANY**

*Write for Additional Information*

424 N. HOMAN AVE., CHICAGO 24, ILLINOIS

## IF YOU WORK WITH HIGH VACUUM

AVOID... FUSSING TIME  
... TINKERING TIME  
... POOR PERFORMANCE  
... OPERATING DIFFICULTIES

Satisfactory design and profitable operation of high vacuum equipment require specialized knowledge and components. Even if you're already a vacuum expert, you can avoid lengthy study, tedious calculations, and costly pitfalls by asking for the assistance of NRC vacuum specialists. That's the quick, sure, no-cost way to assure that you benefit from the lessons learned in thousands of vacuum installations.

NRC Equipment Corporation is your one convenient source for service-proved components, equipment, and systems especially designed for high vacuum service, PLUS technical help in selecting the items which will best suit your own needs.

Write us today.



A Subsidiary of National Research Corporation  
Dept. 25-L, CHARLEMONT ST., NEWTON, MASS.

ONE SOURCE FOR  
ALL HIGH VACUUM

### COMPONENTS

- Baffles
- Cold traps
- Connectors
- Filters
- Gaskets
- Gauges
- \*Leak detectors
- Seals
- \*Valves

### PUMPS

- \*\*Diffusion
- \*Mechanical
- \*Mechanical booster

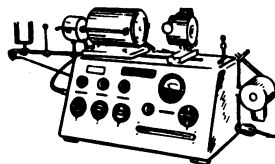
### EQUIPMENT

- Altitude chambers
- \*Coaters
- \*\*Crystal pullers
- Exhaust systems
- \*\*Furnaces
- \*Impregnators
- Freeze Driers

\*New literature available

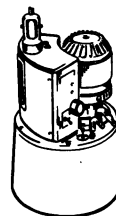
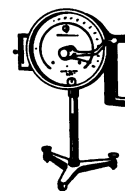
\*\*New literature under preparation

## FROM OUR LINE OF EXCEPTIONAL LABORATORY APPARATUS



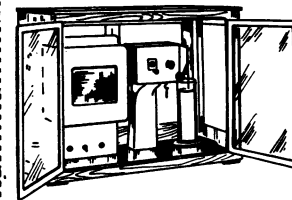
**BRINKMANN-HERAEUS  
Micro Combustion Train**  
Will operate at 1200°C  
continuously  
Fully automatic  
All parts interchangeable

**"TORBAL"**  
Series of Micro Torsion  
Balances  
Eye level operation  
Fully damped for fast weighing  
Ranges from 1 mg to 10 g  
NO VERNIER, direct reading



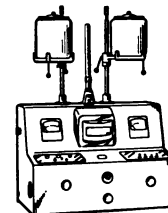
**ULTRA Thermostats**  
(Hoepler system)  
circulating waterbaths of high  
capacity and extreme accuracy  
from -30 to +250°C  
at  $\pm 1/100^\circ\text{C}$   
Fully electronic control

**SEDIBAL**  
Recording Sedimentation  
Balance  
with built-in automatic recorder  
for particle size determination  
from 1 to 6 microns  
Simple—Fast—Accurate



**BRINKMANN  
PENETROMETER**  
ASTM SPECIFICATIONS  
Many novel features for better  
accuracy and faster operation

**DTA — Netzsch**  
The modern apparatus for  
AUTOMATIC Differential  
Thermo Analysis  
Built in recorder  
Temperatures to 1500°C  
Indispensable for measuring en-  
dothermic and exothermic reac-  
tions under controlled conditions



For complete technical information and prices contact  
**BRINKMANN INSTRUMENTS INC.**

GREAT NECK 376-380 GREAT NECK ROAD, L. I., N. Y.  
PHILADELPHIA 3214 NORTH BROAD STREET, PHILADELPHIA, PA.

# How Bausch & Lomb Educational Instruments MAKE SCIENCE EASIER TO TEACH, EASIER TO UNDERSTAND

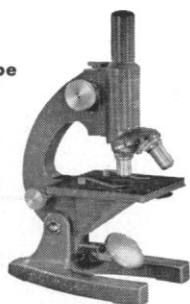


**B&L TRI-SIMPLEX  
Micro-Projector**

Vivid images of fixed specimens or living organisms, on screen or tracing pad.

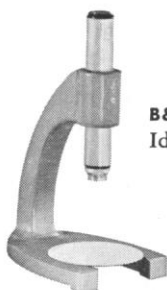
**B&L "FL" Microscope**

Standard size and operation. Pre-focusing gage saves time. 100× and 430×.



**B&L Macroscopes**

Ideal for general science, field trips. 10×, 20× or 40×. With stand (as shown) or folding tripod.



**B&L BALOPTICON®  
Projectors**  
Brilliant full-screen images of slides, opaque objects, even chemical reactions!



**SEE FOR YOURSELF  
in FREE CLASSROOM  
DEMONSTRATION**  
(Just mail coupon)

## B&L STEREOMICROSCOPES

Natural 3-D detail, widest field of view, simple to use. 6.6× to 150×.

## B&L SPECTROSCOPES

Easy-to-see spectra of elements make chemical analysis easy to understand.

TRY THEM! USE THEM! SEE FOR YOURSELF!

**BAUSCH & LOMB OPTICAL CO.**  
75924 St. Paul Street, Rochester 2, N. Y.

I'd like ☐ a demonstration, ☐ catalogs, on:  
☐ Tri-Simplex ☐ "FL" Microscope  
☐ Micro-Projector ☐ Stereomicroscopes  
☐ Macroscopes ☐ Spectroscopes  
☐ Balopticon Projectors

NAME.....TITLE.....

SCHOOL.....

ADDRESS.....

CITY.....ZONE.....STATE.....

ing is 2 in. for assemblies with 12 channels or less, and 1.25 in. for assemblies with 13 through 19 channels. Eight chart speeds from 1 to 250 mm/sec are selectable. Chart paper is available printed or unprinted and in roll or folded form. (Offner Electronics Inc., Dept. S705)

■ **VACUUM TUBE VOLTMETER** for a-c will withstand temperatures of 85°C. Accuracy of  $\pm 2$  percent, full scale, is retained at 71°C. The input impedance is 1 Mohm, and the frequency range is 20 to 50,000 cy/sec. Ranges from 30 mv to 300 v are available. (Trio Laboratories, Inc., Dept. S702)

■ **FLOW COLORIMETER** uses ratio recording to provide continuous analysis of color. Measurements can be made from 350 to 1000 mμ in the presence of turbidity or entrained gas. Path lengths from 1 to 100 cm are available. Insensitivity both to source variations and to accumulation of foreign matter on the cell windows is said to be a feature of the instrument's performance. (Beckman Instruments, Inc., Dept. S703)

■ **ELECTROCARDIOGRAPH ELECTRODE**, for use during surgery, permits the use of a sterile hypodermic needle as a subcutaneous contact. The subcutaneous electrode is said to make optimum contact and to eliminate skin resistance and the problem of paste drying. (Pacific Technical Agency, Dept. S704)

■ **FORCE CALIBRATOR** is a direct-reading, automatic balance, digital servo indicator. The indicator is calibrated with a strain-gage load cell for tension or compression measurements. Accuracy is 0.1 percent of reading or of lowest range, whichever is greater. National Bureau of Standards calibration can be supplied. (Gilmore Industries, Inc., Dept. S706)

■ **SEQUENTIAL SAMPLER** for air-pollution studies takes 12 consecutive samples by means of impingers, gas bubblers, or dry filters. Sampling is controlled by a series of midget solenoid valves connected to a common vacuum manifold. The sampling program may be adjusted by interchanging timing gears. (Gelman Instrument Co., Dept. S708)

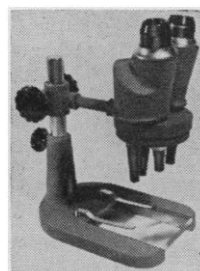
■ **THERMOMETER**, of stainless steel, is of straight form. An adjustable mounting nut makes it possible to turn and lock the thermometer head for maximum visibility. Stem lengths are 2½ to 72 in. A variety of ranges is available; accuracy is 1 percent of range. (W. C. Dillon and Co., Inc., Dept. S709)

■ **CURVE READER** uses a flying-spot scanner to convert a photographic transparency of a drawn curve into a voltage signal. A multiplier-phototube circuit detects the

## EXCELLENT XMAS GIFTS

Fine, American-Made Instrument at Over 50% Saving

## STEREO MICROSCOPE



Up to 3" Working Distance  
—Erect Image—Wide 3 Dimensional Field

Now, ready after years in development—this instrument answers the long standing need for a sturdy, efficient STEREO MICROSCOPE at low cost. Used in production—in research—in the lab, shop, factory, or at home; for inspections, examinations, counting, checking, assembling, dissecting—speeding up and improving quality control.

2 sets of objectives on rotating turret. Standard pair of wide field 10X Kellner Eyepieces give you 23 power and 40 power. Additional eyepieces available for greater or lesser magnification. A low reflection coated prism erecting system gives you an erect image—correct as to right and left—clear and sharp. Helical rack and pinion focusing. Precision, American-made! 10-DAY TRIAL... complete satisfaction or your money back.

Order Stock No. 85,056-W (Shipping wt. approx. 11 lbs.)  
Full price ..... \$99.50 f.o.b. Barrington, N. J.

Send Check or M.O.

## See the Stars, Moon, Planets Close Up! 3" REFLECTING TELESCOPE

60 and 120 Power — An Unusual Buy!  
Famous Mt. Palomar Type!



Assembled—ready to use! You'll see the Rings of Saturn, the fascinating planet Mars, huge craters on the Moon, Star Clusters, Moons of Jupiter in detail. Galaxies! Aluminized and overcoated 3" diameter high-speed f/10 mirror. Equatorial mount with lock on both axes. An Optical Finder Telescope, always so essential, is also included. Sturdy, hardwood, portable tripod. Free with scope—valuable star chart and 272 page "Astronomy Book". Order by Stock No.

— Send check or M.O. — Money-back guarantee!

Stock No. 85,050-W (Shipping wt. 10 lbs.)

\$29.50 f.o.b. Barrington, N.J.

## SILICONE POLISHING AND CLEANING CLOTHS

New! Combines the miracle of Silicones with a non-woven, all rayon cloth. Used over and over (washable) to dust, polish, protect, anti-fog: mirrors, reflectors, lenses, coated optics, crystal glass, lucite, other plastics. Won't scratch. Lintless, non-oily. Cloth size 18 x 16".

Stock No. 60,059-W Package of 3 cloths ... \$1.00 Postpd.  
Stock No. 70,137-W Package of 100 cloths ... 26.50 Postpd.

Lower Prices on Larger Quantities

## INFRARED SNIPERSCOPE TELESCOPE & PARTS



See in the dark—without being observed. War surplus Sniperscope M-2, Gov't. cost about \$1200. Instrument complete, ready to use. Includes Power Pack, infrared light source. Will operate from 6 V auto battery. Battery or transformer available.

Stock No. 85,053-W \$150.00 f.o.b.  
Save still more money! Build your own Sniperscope! We will furnish Instructions—parts, including: Power

Packs, 1P25A image tubes, light units, filters, etc. For details—request FREE Bulletin A-26-W.

## BUILD A SOLAR ENERGY FURNACE

Great Project for Geophysical Year!

A fascinating new field. You can build your own Solar Furnace for experimentation—many practical uses. It's easy—inexpensive, use your scrap wood. We furnish instruction sheet. This sun powered furnace will generate terrific heat—2000° to 3000°. Fuses Enamel to metal. Produces many unusual fusing effects. Sets paper aflame in seconds. Use our Fresnel Lens—14¼" diameter ... f.l. 14".

Stock No. 70,130-W package of 1 .... \$6.00 Postpaid  
Stock No. 70,131-W package of 2 .... 11.00 Postpaid  
Stock No. 70,132-W package of 4 .... 20.00 Postpaid

## WRITE FOR FREE CATALOG-W

Huge selection of lenses, prisms, war surplus optical instruments, parts and accessories. Telescopes, microscopes, satellite scopes, binoculars. Hand spectroscopes, reticles, mirrors, Ronchi rulings, dozens of other hard-to-get optical items. America's No. 1 source of supply for Photographers, Hobbyists, Telescope Makers, etc. Ask for catalog W

Order by Stock No.—Send Check—Satisfaction Guaranteed

**EDMUND SCIENTIFIC CO.**  
BARRINGTON, NEW JERSEY

flying spot when it is below the curve and controls a Schmidt trigger to produce constant-amplitude, variable-width pulse output. Accessory items include an automatic camera for preparation of transparencies and time-base generators to sweep the flying spot. (Spar Engineering and Development, Inc., Dept. S711)

■ **FILTER FLASKS** of high-temperature polyethylene have extra-heavy walls to withstand vacuum. Volume is 500 ml. (Palo Laboratory Supplies, Inc., Dept. S710)

■ **CELL-DESTRUCTION DEVICE** permits cell walls of chloroplast material, blood cells, unicellular organisms, homogenates of animal tissue, and other biological particles to be disintegrated without disturbing the nuclei. The device is a pressure cell in which the specimen is subjected to a pressure of 20,000 lb/in.<sup>2</sup>, which is suddenly released. The cell is equipped with a pressure relief valve, a sample outlet, and a volume-adjusting device. (American Instrument Co., Dept. S712)

■ **AMPLIFIER** with 20-w output uses transistor circuitry to achieve small size. The unit, occupying a volume of 50 in.<sup>3</sup>, has a signal-to-noise ratio greater than 30 db with less than 3 percent harmonic distortion at the low-frequency end. Frequency range from 50 to 20,000 cy/sec is available. (Universal Transistor Products Corp., Dept. S713)

■ **HYGROMETER** measures relative humidity from 32 to 180°F. The humidity-sensing element of the instrument is a plastic base coated with an absorbing surface whereby changes in vapor pressure and relative humidity are converted into electrical signals. Relative humidity is indicated directly over the 30-to-100 percent range. (American Laboratory Apparatus Corp., Dept. S714)

■ **NEUTRON SURVEY METER**, completely transistorized, is insensitive to gamma rays below 100 r/hr. Fast neutrons with energies between 0.1 and 15 Mev are detected by proton-recoil detector; slow neutrons, with energies below 0.1 Mev, are detected by an enriched BF<sub>3</sub>-filled proportional counter. Readout is logarithmic. (Radiation Counter Laboratories, Inc., Dept. S731)

■ **DECADE RESISTORS** are designed to be plugged in for analog computer applications, and thus they permit constant coefficients to be set and stored for future use. Two types are available, with 10.6 and 10.7 ohm maximum resistance, respectively. (Goodyear Aircraft Corporation, Dept. S716)

JOSHUA STERN

National Bureau of Standards

1 NOVEMBER 1957

## THE RONALD PRESS COMPANY

*is proud to announce the acquisition of the  
book publishing interests of*

**THE CHRONICA BOTANICA CO.**

**October 1, 1957**

Dr. Frans Verdoorn will carry on his invaluable service to the Biological Profession as Consulting Editor for the continuation of the Chronica Botanica publications and related serials under The Ronald Press Company imprint while assuming the important post of Director of the new Biohistorical Institute of his Alma Mater, The University of Utrecht, the Netherlands. We know that biologists around the world will join us in wishing Dr. Verdoorn success in his dual role as Biohistorian and Editor.

### Newly Published . . .

#### The Experimental Control of Plant Growth

By F. W. WENT, *California Institute of Technology*

Complete data on building and operating air-conditioned greenhouses and climatic chambers. Book gives growing instructions for plants commonly used in botanical, agricultural experiments. Special reference to the Earhart Plant Research Laboratory at the California Inst. of Tech. 243 ills., 240 pp. \$8.50

#### Pollen and Spore Morphology and Plant Taxonomy

By G. ERDTMAN

Volume II of *An Introduction to Palynology* illustrates through the use of palynograms and micrographs the pollen and spore morphology of the Gymnospermae, Pteridophyta, and Bryophyta. 147 pp. (Volume I by Erdtman—*Pollen Morphology and Plant Taxonomy: Angiosperms* also available.)

November. Price to be announced.

### Nine CHRONICA BOTANICA Titles — again in print:

**Genera Filicum**—The Genera of Ferns. By Edwin Bingham Copeland. 10 plates, 270 pp. \$6.50

**Water in the Physiology of Plants.** By A. S. Crafts, H. B. Currier, C. R. Stocking. 59 ills., 242 pp. \$6.50

**The Carnivorous Plants.** By F. E. Lloyd. 696 ills., figures; 352 pp. \$7.50

**Plants of the Bible.** By Harold N. & Alma L. Moldenke. 95 ills., 320 pp. \$7.50

**Biology of the Pathogenic Fungi.** Edited by Walter J. Nickerson. 46 ills., 236 pp. \$5.50

**A Short History of the Plant Sciences.** By H. S. Reed. 37 ills., 323 pp. \$6.50

**A Guide to the History of Science.** By George Sarton. 316 pp. \$7.50

**The Origin, Variation, Immunity, and Breeding of Cultivated Plants.** By N. I. Vavilov. Translated by K. Starr Chester. 37 ills., 364 pp. \$7.50

**Plants and Plant Science in Latin America.** Edited by Frans Verdoorn. 83 ills., 384 pp. \$7.50

### New RONALD Books . . .

**Principles of Plant Pathology.** By Elvin C. Stakman and J. George Harrar. 165 ills., tables; 581 pp. \$8.00

**Biology and Control of the Smut Fungi.** By George William Fischer and Charles Stewart Holton. 117 ills., tables; 622 pp. \$10.00

**Companion Volumes by G. W. FISCHER:**

**Manual of the North American Smut Fungi.** 136 ills., 343 pp. \$8.75

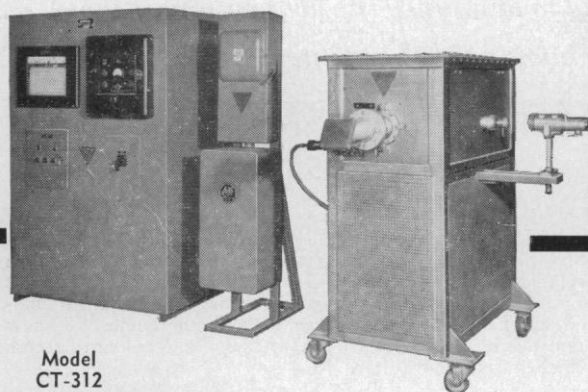
**The Smut Fungi**—A Guide to the Literature, with Bibliography. 387 pp. \$8.50

**Biogeography**—An Ecological Perspective. By Pierre Dansereau. 183 ills., tables; 394 pp. \$7.50

Order your books from:

**THE RONALD PRESS COMPANY • 15 E. 26th St., New York 10, N.Y.**

## Precision Control up to 5000°F



Model  
CT-312

### PERECO Carbon-Resistor Type TUBE FURNACE

Developed to meet the demands of both industry and military. Suited for investigations in the ultra-high (3500°-5000° F.) temperature ranges in the field of either metallurgy or ceramics. Wide range of "turn-down" insures very accurate results. May also be duplicated repeatedly. Capable of holding to plus or minus 20° F. at 5000° F. Choice of extremely rapid or any slower cycle heat-up; close control of both temperature and power input; full-range, FAIL-SAFE, safety devices; and easy, low-cost element replacement.

Standard or Special Furnaces or Kilns from 450° F. to 5000° F.

Write for Bulletin

PERENY EQUIPMENT CO.

Dept. F, 893 Chambers Rd.

Columbus 12, Ohio



## AAAS SYMPOSIUM VOLUME

### SOVIET SCIENCE

Second Printing

Russian Genetics	Theodosius Dobzhansky
Russian Physiology and Pathology	W. Horsley Gantt
Russian Psychology and Psychiatry	Ivan D. London
Scientific Method and Social Science: East and West	Russell L. Ackoff
Russian Contribution to Soil Science	J. S. Joffe
Soviet Physics and Chemistry	John Turkevich
Soviet Mathematics	J. R. Kline
Science and Intellectual Freedom in Russia	Lazar Volin
An Appraisal of Science in the USSR	Conway Zirkle

6 x 9 inches, clothbound, 115 pages, price \$1.75

Prepaid orders by AAAS members, \$1.50

### AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

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

## PERSONNEL PLACEMENT

**CLASSIFIED:** 18¢ per word, minimum charge \$3.60. Use of Box Number counts as 10 additional words. Payment in advance is required.

**COPY** for classified ads must reach SCIENCE 2 weeks before date of issue (Friday of every week).

**DISPLAY:** Rates listed below — no charge for Box Number. Monthly invoices will be sent on a charge account basis — provided that satisfactory credit is established.

Single insertion	\$22.00 per inch
13 times in 1 year	21.00 per inch
26 times in 1 year	20.00 per inch
52 times in 1 year	19.00 per inch

**For PROOFS** on display ads, copy must reach SCIENCE 4 weeks before date of issue (Friday of every week).

**Replies to blind ads** should be addressed as follows:

Box (give number)  
Science  
1515 Massachusetts Ave., NW  
Washington 5, D.C.

### POSITIONS OPEN

#### Experienced Ethical Medical Copywriters

Persuasive promotional writing prescription pharmaceuticals. Two positions. Excellent opportunity young M.D. background in professional communications, and for scientifically oriented promotional copywriter.

Established New York corporation. Salary commensurate with education and experience, plus bonus system, insurances, and retirement plan. Describe background and experience fully in first letter. Write

Box 285, SCIENCE

### POSITIONS OPEN

(a) Biochemist; Ph.D., research position, department of otolaryngology, university medical school; faculty appointment; Midwest; \$5000-\$7000. (b) Biochemist well qualified in protein chemistry; research position in hematopoiesis; well-known research institute; Midwest. (c) Biochemist, B.S. degree, with training or experience in protein and enzymes; duties consist of supervising biochemical manufacturing and research; East; \$8000. (d) Experimental Pathologist; M.D., D.V.M., or Ph.D.; coeducational, state-controlled school; 8000 students; South. (e) Microbiologist or Biochemist with experience in immunochemistry; Ph.D. or M.D., duties entirely research; \$12,000. (f) Physician well qualified in pharmacology; executive position with large company; experience in pharmaceutical field desirable; will be willing to consider one who has served as consultant; duties at first will consist of managing clinical projects and working with other scientific personnel in design of research projects; East. S11-1 Medical Bureau, Burneice Larson, Director, 900 North Michigan Avenue, Chicago. X

### JUNIOR RESEARCH BIOCHEMIST

B.S. in biological science with chemistry minor. Work involves biochemical analysis, tissue and enzyme preparations, animal feeding studies. Send résumé to

Personnel Director  
The Norwich Pharmacal Company  
Norwich, New York

Ph.D. Pharmacology. Excellent opportunity for man with experience in industrial pharmaceutical research and an ability to supervise research. Take charge of pharmacology section a progressive pharmaceutical firm with a pleasant suburban location near a large midwestern city. Please submit details of education, experience, salary requirement, availability, and so forth, to Box 277, SCIENCE. 10/25; 11/1

### POSITIONS OPEN

(a) Biochemist; Ph.D. to have full charge, responsible only to pathologist; interested research, especially ultra-micro chemistry, development new diagnostic tests; 500-bed general hospital; \$8400-\$10,000; Midwest. (b) Bacteriologist; B.S., M.S. for research, specialized procedures; large general hospital; to \$5600; Michigan. (c) Chemist, considerable supervision of laboratory personnel additionally; 120-bed approved hospital; to \$7000; New England. (d) Bacteriologist; M.S., Ph.D. to head department supervised by board pathologist; very large facility; \$7500-\$8400; Midwest. (e) Biochemist; Ph.D. as assistant director, large hospital; excellent opportunity individual research projects; to \$8000; Midwestern university center. Woodward Medical Bureau, Ann Woodward, Director, 185 N. Wabash, Chicago. X

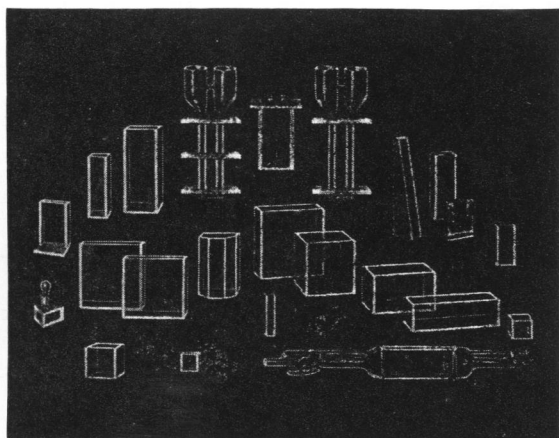
**SCIENCE TEACHERS, LIBRARIANS, ADMINISTRATORS** urgently needed for positions in many states and foreign lands. Monthly non-fee placement journal since 1952 gives complete job data, salaries. Members' qualifications and vacancies listed free, 1 issue, \$1.00. Yearly (12 issues) membership, \$5.00. CRUSADE, SCI., Box 99, Station G, Brooklyn 22, N.Y. ew

**NEW WORLD-WIDE GRADUATE AWARD DIRECTORY.** First compilation ever prepared for American scientists, teachers and librarians to subsidize their education and research in over 350 universities in 45 states, 30 foreign lands. Stipends \$200-\$10,000. Complete information. Pre-publication price before 15 Nov. 1957. \$1.50. Regular price, \$2. CRUSADE, SCI., Box 99, Station G, Brooklyn 22, N.Y. 10/4, 11, 18, 26; 11/1

**YALE UNIVERSITY.** Laboratory technician (permanent position) to take charge of rock and mineral preparation and experimental work. Specific knowledge of experimental techniques with rocks, minerals, and ores not essential if applicant has background and aptitude for laboratory work. Department of Geology, Box 2161, Yale Station, New Haven, Conn. 11/8, 15



## GLASS ABSORPTION CELLS made by **KLETT**



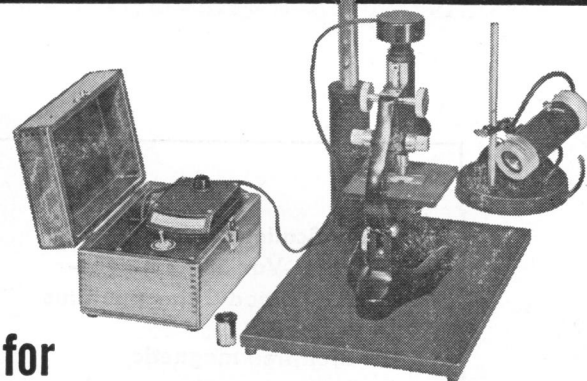
Makers of Complete Electrophoresis Apparatus

— 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

## PHOTOVOLT EXPOSURE PHOTOMETER

Mod.  
200-M



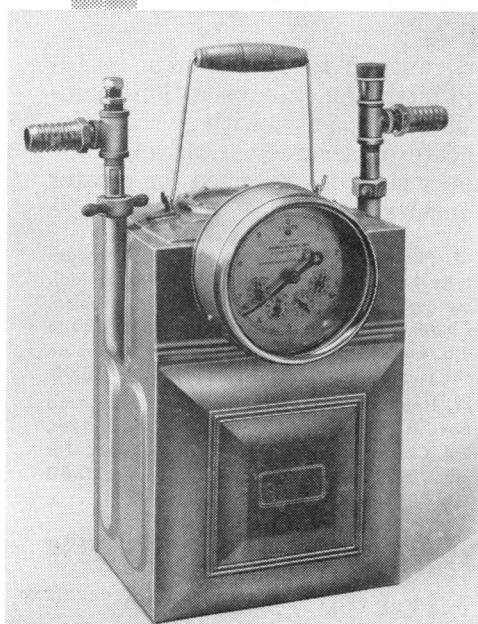
for  
**PHOTOMICROGRAPHY**

Accurate determination of exposure time in  
black-and-white and color photomicrography

Write for Bulletin #810 to **Price \$105.00**

**PHOTOVOLT CORP.**  
95 Madison Ave. New York 16, N. Y.

# GAS METER



## DRY TEST LABORATORY MODEL

A portable direct reading meter that is used for measuring gas flow or gas volumes in basal metabolism by the Douglas bag method. The procedure was originally described by H. S. Newcomer.

The 6" dial is graduated to 1 liter in 10 ml divisions. It has four small cumulative dials which make possible totalizing readings up to 10,000 liters.

There are side arms for attaching 1½" O.D. corrugated rubber tubing; openings for attachment of a thermometer at the outlet and a manometer at gas inlet to permit adjustment of gas volume. The sturdy meter case is equipped with a carrying handle.

The capacity is approximately 3400 liters of air per hour. The pressure difference between inlet and outlet, at that rate of flow is approximately ½" of water (0.9 mm of mercury). Accuracy is within ½%. If the flow is intermittent, the error may increase a little.

CAT. NO. 70-851

**PHIPPS & BIRD, INC.**  
Manufacturers & Distributors of Scientific Equipment  
 6th & Byrd Streets - Richmond, Va.

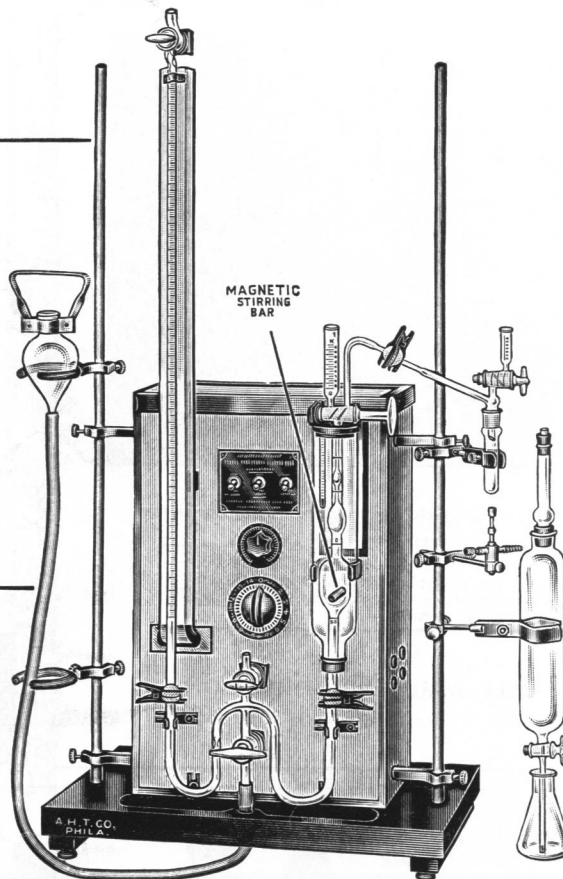
A modification of the  
Thomas-Van Slyke Magne-  
Matic® Blood Gas Apparatus

Vibration-free magnetic  
agitation

Interchangeable ball-and-socket  
glass joints

*Thomas*

**Magne-Matic® Model**



## VAN SLYKE-FOLCH APPARATUS

Incorporates magnetic stirring and other features of the Magne-Matic® Model of the Van Slyke Blood Gas Apparatus.

For rapid quantitative microdetermination of carbon in organic compounds by a wet combustion method. Complete oxidation of sample in one to three minutes. Also suitable for microdeterminations of sulfate, phosphate, calcium and magnesium by changing the combustion tube.

Cabinet of Formica and Stainless Steel. Includes enclosed magnetic stirring apparatus for rotating chemically inert stirring bar; speed control rheostat;

timer, range 0 to 15 minutes, in 15-second intervals; and absorption chamber, 50 ml capacity, with A.H.T. Co. certificate of accuracy. Cup and tube on upper stopcock reversed for greater convenience.

**3599-X. Micro Combustion Apparatus, Thomas-Van Slyke-Folch, Magne-Matic® Model, (Patented).** Complete outfit, with glassware, clamps, Tygon tubing, etc., as shown in illustration; with gas burner for 550 to 750 B.T.U., but without mercury. With stirrer for use on 115 volts, a.c. or d.c. .... **408.00**

**3599-Y. Heater, Electric, Thomas-Hankes,** for use with above in place of gas burner. See L. V. Hankes, *Analytical Chemistry*, Vol. 27, No. 1, p. 166. For 115 volts. .... **20.50**



**ARTHUR H. THOMAS COMPANY**

*More and more laboratories rely on Thomas / Laboratory Apparatus and Reagents*

**VINE ST. AT 3RD • PHILADELPHIA, PA.**