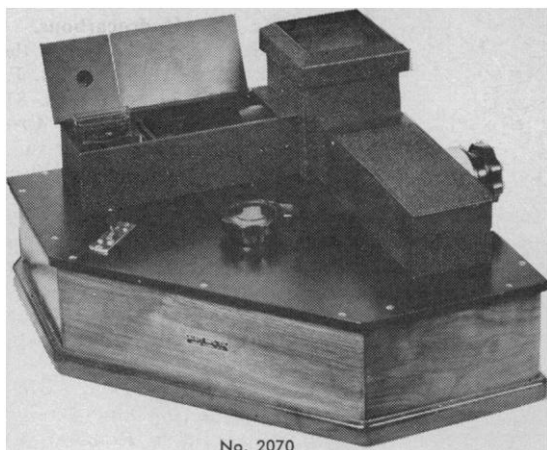


THE KLETT FLUORIMETER



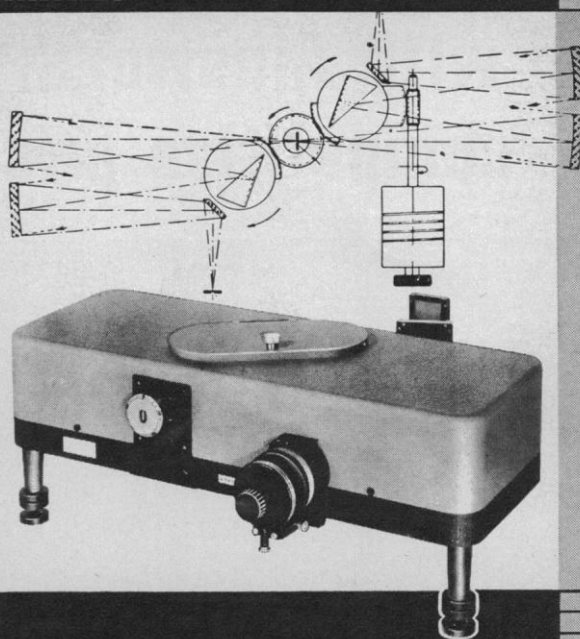
Designed for the rapid and accurate determination of thiamin, riboflavin, and other substances which fluoresce in solution. The sensitivity and stability are such that it has been found particularly useful in determining very small amounts of these substances.

KLETT SCIENTIFIC PRODUCTS

PHOTOELECTRIC COLORIMETERS • BIO-COLORIMETERS
GLASS ABSORPTION CELLS • COLORIMETER NEPHELOMETERS • KLETT REAGENTS • COLONY MARKER AND TALLY

Klett Manufacturing Co., Inc.
179 EAST 87TH STREET, NEW YORK, N. Y.

Leiss SINGLE & DOUBLE MIRROR-MONOCHROMATORS



With exchangeable prisms for the visible, ultraviolet, infrared from 200 millimicrons to 20 microns.

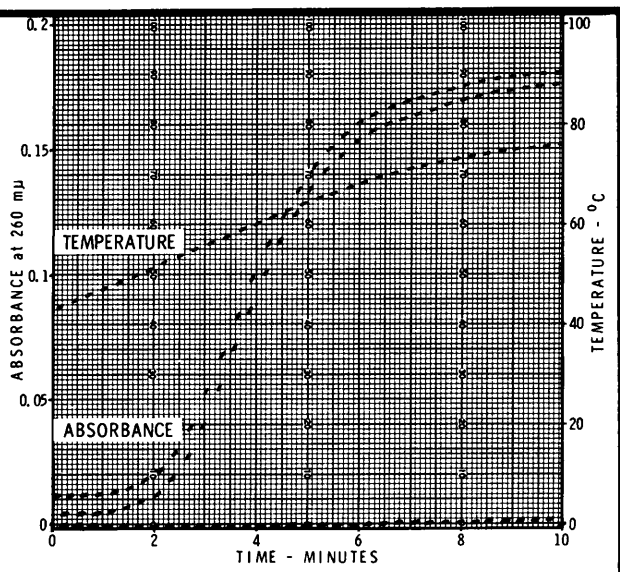
Write for Bulletin #980 to

PHOTOVOLT Corporation

1115 Broadway

New York 10, N. Y.

DNA-RNA Thermal Denaturation



Portion of DNA-RNA thermal denaturation record, made with Gilford 2000 Spectrophotometer and Linear Thermo-sensor, illustrates linear recording of absorbance and temperature on same chart. Another use for the 2000—one versatile system adaptable to column chromatography, enzyme kinetics, sucrose density gradients, amino acid analyses... or your area of research.

gilford 2000

A fundamentally different and superior photometric concept gives the Gilford 2000 spectrophotometer an output linear with absorbance over a 3.0 O. D. range, together with capability to read to 0.001 O. D. Exceptional stability and low noise level enhance these basic advantages. Automated programming of up to four sample cells and the availability of linear temperature measuring and recording, flow cells, automatic baseline compensation and wavelength programming further extend the usefulness. Write for brochure and quotation.

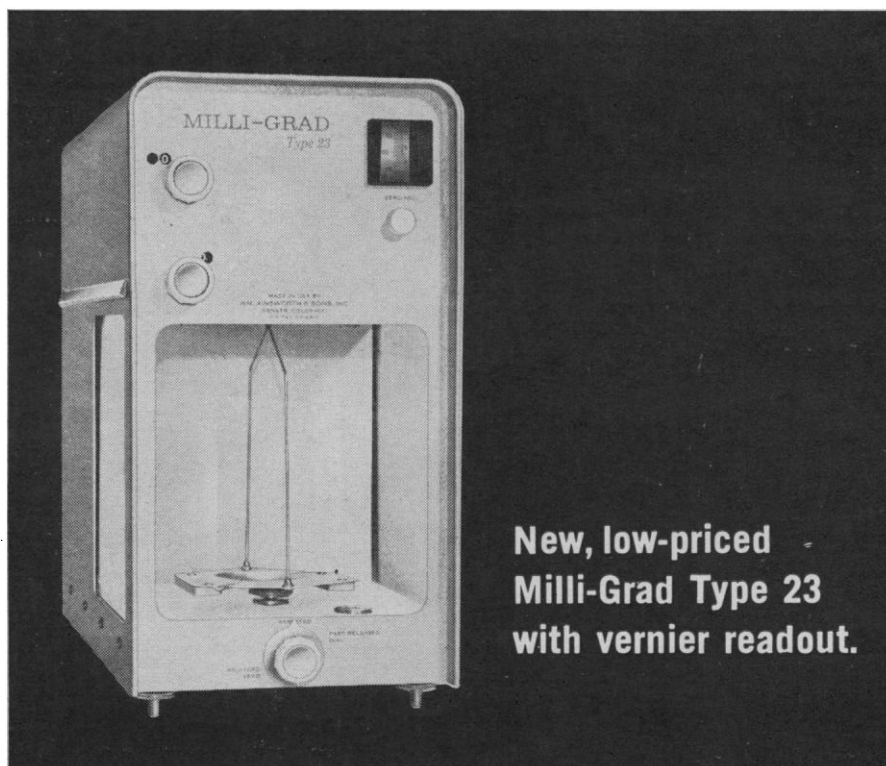
Conventional Absorbance Measurements also easier, more accurate. Digital readout: 0.000 to 3.000 O. D. Sensitivity, dark current controls and shutter eliminated. Line operated.



gilford
INSTRUMENT

SALES OFFICES IN PRINCIPAL CITIES THROUGHOUT THE UNITED STATES
INSTRUMENTATION FOR BIOLOGY AND MEDICINE
LABORATORIES INCORPORATED
OBERLIN OHIO

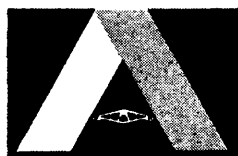
NOW...5 1-pan balances all with Ainsworth quality at competitive prices



Your choice of capacity, sensitivity, size, price

| | TYPE SC | TYPE 12 | TYPE 10 | TYPE 21 | TYPE 23 |
|---------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|
| Capacity | 200 gr. | 80 gr. | 160 gr. | 160 gr. | 160 gr. |
| Tare | — | 40 gr. | 60 gr. | — | — |
| Total Load | — | 120 gr. | 220 gr. | — | — |
| Sensitivity | 0.1 mg. | 0.01 mg. | 0.1 mg. | 0.1 mg. | 1 mg. |
| Readability by estimation | 0.05 mg. | 0.005 mg. | 0.05 mg. | 0.05 mg. | 0.5 mg. |
| Reproducibility | ±0.03 mg. | ±0.01 mg. | ±0.03 mg. | ±0.05 mg. | ±0.3 mg. |
| Dimensions | 10¼" w x 19¾" h x 18½" d | 8¼" w x 15½" h x 16" d | 8¼" w x 15½" h x 16" d | 8¼" w x 15½" h x 16" d | 8¼" w x 15½" h x 16" d |
| PRICE | \$895.00 | \$875.00 | \$670.00 | \$550.00 | \$530.00 |

Modifications: weigh below attachments available on all 1 pans, add B to Type No.; Explosion proof available on all 1 pans, add A to Type No.; at extra cost. Type SCD diamond balance; Type SCH with high weighing chamber; Type SC 300 extended capacity.



A BALANCE FOR EVERY NEED

The name Ainsworth is your guarantee

WRITE FOR CATALOG

WM. AINSWORTH & SONS, INC.

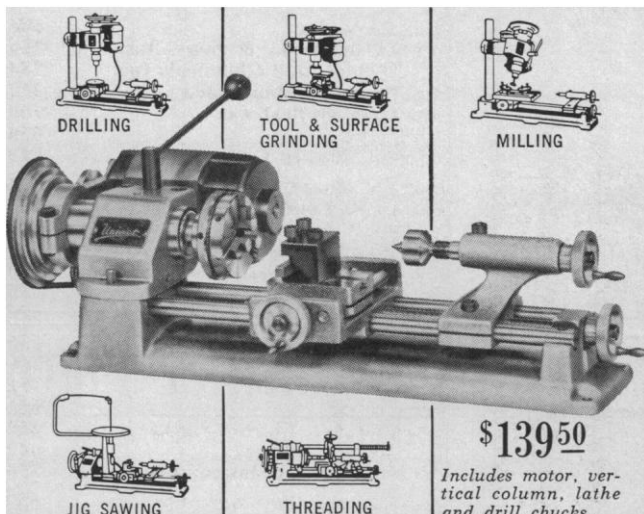
2151 LAWRENCE STREET • DENVER, COLORADO 80205
Telephone Area Code 303 255-1723

INDEX TO ADVERTISERS

14 August 1964

| | |
|--|----------|
| Ace Glass Inc. | 645 |
| Ainsworth, Wm., & Sons, Inc. | 756 |
| Air Products and Chemicals Inc. | 744 |
| American Edelstaal, Inc. | 757 |
| American Optical Co. | 760 |
| ANS, Inc. | 654 |
| Applied Physics Corp. | 743 |
| Barber-Colman Co. | 646 |
| Bausch & Lomb Optical Co. | 753 |
| Biological Research Inc. | 627 |
| Blickman, S., Inc. | 749 |
| Booz-Allen Applied Research Inc. | 740 |
| Borden Chemical Co. | 736 |
| Brush Instruments | 626 |
| Canal Industrial Co. | 636 |
| Central Scientific, Div. of Cenco Instruments Corp. | 732 |
| Clay-Adams | 651 |
| Consolidated Electrodynamics | 658 |
| Control Data Corp. | 647 |
| Custom Scientific Instruments, Inc. | 754 |
| Economics Laboratory, Inc. | 653 |
| Edmund Scientific Co., Inc. | 731 |
| Falcon Plastics Div. of B-D Laboratories, Inc. | 747 |
| Fisher Scientific Co. | 745 |
| Gilford Instrument Laboratories Inc. | 755 |
| Hacker, William J., & Co., Inc. | 737 |
| Hamilton Co. | 631 |
| Honeywell Photographic Products, Denver Div. | 748 |
| Industrial Instruments | 732 |
| Instron Engineering Corp. | 652 |
| Instruments for Research and Industry | 737 |
| International Equipment Co. | 634 |
| Kinney Vacuum | 734 |
| Klett Manufacturing Co. | 755 |
| LaPine Scientific Co. | 736 |
| Leitz, E., Inc. | 664 |
| London Co. | 630 |
| Lourdes Instrument Corp. | 656 |
| Matheson, Coleman & Bell, Div. of Matheson Co., Inc. | 660, 661 |
| Mechanical Enterprises, Inc. | 736 |
| Mettler Instrument Corp. | 750 |
| Mikros Inc. | 739 |
| Millipore Filter Corp. | 738 |
| Nalge Co., Inc. | 735 |
| New England Nuclear Corp. | 657 |
| Nuclear Data, Inc. | 635 |
| Ohaus Scale Corp. | 759 |
| Phipps & Bird, Inc. | 734 |
| Photovolt Corp. | 755 |
| Picker X-Ray Corp. | 632 |
| Pioneer Plastics, Inc. | 738 |
| Polaroid Corp. | 662, 663 |
| Reeve Angel | 731 |
| Sage Instruments, Inc. | 738 |
| Sargent, E. H., & Co. | 638 |
| Scientific Industries Inc. | 740 |
| Siemens America Inc. | 640 |
| Sigmamotor Inc. | 734 |
| Sorensen | 637 |
| Sorvall, Ivan, Inc. | 633 |
| Technical Measurement Corp. | 666 |
| Technicon | 639 |
| Tektronix, Inc. | 733 |
| Texas Instruments Inc. | 752 |
| Thermolyne Corp. | 754 |
| Tracerlab | 746 |
| Vanguard Instrument Corp. | 642 |
| Varian Associates | 746 |
| VirTis Co., Inc. | 641 |
| Wilmot Castle Co. | 650 |
| Yellow-Spring Instrument Co., Inc. | 748 |
| Zeiss, Carl, Inc. | 655 |

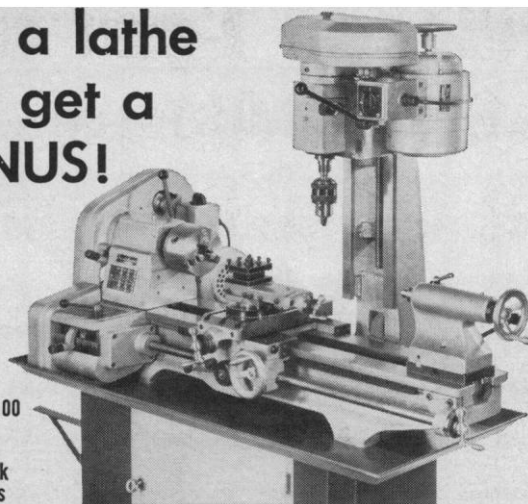
COMPLETE METALWORKING SHOP FOR SMALL PRECISION PARTS!



Do your own R&D and model shop machining. Unimat turns, drills, bores, mills, threads, grinds, saws, files, divides, buffs, polishes. Eleven-speed range (900 to 7200 rpm) handles all materials. More than 10,000 in use for scientific, industrial, commercial applications. Write for free product catalog or send \$1.00 for illustrated Handbook of Miniature Machining Techniques.

AMERICAN EDELSTAAL, INC.
Dept. B-H, 350 Broadway
New York 13, New York

Buy a lathe and get a BONUS!



Model MQ-3100
with twin
headstocks,
motors, quick
change gears

MAXIMAT is a mighty fine 10" lathe that beats ASA toolroom specs. Think about it just as a lathe and it's a good buy, priced between \$857 and \$1279 depending on which outfit you select. Where's the bonus? The machine has two beds instead of one. You have the usual ground and scraped-flat lathe bed, and another matching one mounted dead true vertically. Using the same motors, chucks, headstocks and work-holders, you gain the use of a complete vertical mill and boring machine. Use it for grinding too . . . for indexing . . . make gears, locate to tight tolerances all with one machine that fits in 20 x 40 inch floor space. In R & D, Maintenance and prototype design work, it's a time-and-money saving tool. Write for free catalog and Tool-room Timesaver Tips.

AMERICAN EDELSTAAL, INC.
Dept. B-H, 350 Broadway
New York 13, New York

PERSONNEL PLACEMENT

CLASSIFIED: Positions Wanted. 25c per word, minimum charge \$4. Use of Box Number counts as 10 additional words. Payment in advance is required.

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

DISPLAY: Positions Open. Rates listed below—no charge for Box Number. Rates net. No agency commission allowed for ads under 4 inches. No cash discount. Minimum ad: 1 inch. Ads over 1 inch will be billed to the nearest quarter inch. Frequency rate will apply only to repeat of same ad. No copy changes. Payment in advance is required except where satisfactory credit has been established. Send copy for display advertising to SCIENCE, Room 1740, 11 West 42 St., New York 36.

Single insertion \$65.00 per inch
4 times in 1 year 60.00 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, D.C. 20005

POSITIONS WANTED

Biochemist, M.S., female. Experiences include clinical chemistry, protein isolation, enzyme mechanism, radioisotope and ethical drug industry. Seeks nonindustrial research position anywhere in U.S. Box 483, SCIENCE. X

Vertebrateologist, Physioecologist, Ph.D. California. Sixteen years teaching, research, administration (if need). Box 440, SCIENCE.

14 AUGUST 1964

POSITIONS WANTED

Biological Science Instruction and Fundamental Research. Ph.D. (1937), broad experience in university instruction and research. Seek to instruct integrated biology, comparative and/or general physiology, and counsel graduate work. Present research: water and metabolic thermal range. Recent publication (1962): fundamental bases of physiological phenomena entitled "Unity Structure and Natural Phenomena." Preference: college or university in Southwest. Salary no objective. Recently resigned Oklahoma City University. Inquiry invited. H. Hixson, 4548 NW 19th, Oklahoma City, Okla. X

Microbiologist, Ph.D. Postdoctoral experience in virology, tissue culture, and germ-free animal research. Desires academic position. Box 485, SCIENCE. X

POSITIONS OPEN

UNIVERSITY OF ALBERTA Edmonton, Canada

Applications are invited for the position of **Assistant Professor of Microbiology.** Duties to include formal lecturing and instruction with emphasis on immunology at both graduate and undergraduate levels.

Qualifications: Ph.D. in microbiology with major in immunology or immunochemistry. Appointment as of 1 September 1964.

Starting salary: \$8500 per annum. Excellent pension plan, medical services and hospitalization plan, disability and group life insurance.

Well-equipped modern microbiological laboratory. Ample opportunity will be available for research.

Applications, including personal data and details of training and experience, should be addressed to

**Dr. G. E. Meyers, Head
Department of Microbiology
Faculty of Science
University of Alberta**

POSITIONS OPEN

HISTOCHEMIST

Experimental morphologist, Ph.D. or equivalent. Active research program in enzyme and electron histochemistry. Opportunity for training in electron microscopy. Salary commensurate with qualifications. Hospital-affiliated research institute, New York.

Box 460, SCIENCE

MICROBIOLOGY

Research Division of Central New York State pharmaceutical firm has challenging positions available for:

RESEARCH BACTERIOLOGIST

M.S. in bacteriology or equivalent training to conduct basic bacteriological studies in chemotherapy.

JR. RESEARCH BACTERIOLOGIST

B.S. in bacteriology with or without experience to screen compounds for chemotherapeutic activity in vitro and in vivo.

Company offers semi-rural living conditions with up-to-date salary and fringe benefits.

Qualified persons are invited to forward résumé to: John E. Wedge, Professional Employment Manager

**THE NORWICH PHARMACAL CO.
& EATON LABORATORIES DIV.**

Norwich, New York

POSITIONS OPEN

BIOCHEMIST ANTIBIOTICS

Continued growth & expansion of a prominent North Jersey drug & pharmaceutical company has created a highly desirable opening for a Ph.D.—biochemistry or organic chemistry—with 2 to 5 years' industrial experience in the isolation & early purification stages of antibiotics from crude broths. Will direct the activities of 5 to 8 assistants in a variety of challenging assignments:

Salary commensurate with experience and training. Excellent benefit program. Pleasant suburban environment. Send résumé including present salary in complete confidence to

Box 479, SCIENCE

An equal opportunity employer

THE AUSTRALIAN NATIONAL UNIVERSITY INSTITUTE OF ADVANCED STUDIES Research Fellow

Radiocarbon Dating Laboratory

The Departments of Geophysics and of Anthropology and Sociology propose jointly to establish a Radiocarbon Dating Laboratory for the Australian National University. Commercially available equipment will be provided which will be housed in the Department of Geophysics. This Department has a large section devoted to geological age measurements and extensive workshop and technical facilities.

The Research Fellow will be expected to bring the equipment into operation and to establish dating on a routine basis. The samples to be used initially will be mostly of archaeological material. When the unit is fully established, the Research Fellow will be able to undertake research of his own, either in the laboratory or in the field.

The salary of the successful applicant will be determined within the range \$A1,980—\$A2,680. Appointment is for three years, with a possible extension to five years.

Superannuation is on the F.S.S.U. pattern. Reasonable travel expenses are paid and assistance with housing is provided.

Further particulars should be obtained from the undersigned, with whom applications close on 30 September, 1964.

D. K. R. HODGKIN, Registrar
Institute of Advanced Studies

Box 4, G.P.O.,
CANBERRA, A.C.T.

TEXTBOOK EDITOR

FOR LEADING MEDICAL PUBLISHER

Develop new texts. Must be free to travel.

Replies held confidential

Box 486, SCIENCE

VIROLOGIST

Challenging laboratory opening in Virology Group of major Philadelphia drug firm. Prefer someone with M.S. degree plus industrial or hospital experience in virology or tissue culture. Salary commensurate with background. Liberal benefit program includes company-paid life and health insurance, 35-hour week, etc. Please send complete resume including current earnings to:

THOMAS M. BUSHOLD

Smith Kline & French Labs.

1500 Spring Garden St. Phila. Pa. 19101

An Equal Opportunity Employer

POSITIONS OPEN

Postdoctoral biochemist to participate in basic science project of the Department of Medicine, New York Medical College. Experience with enzymes and protein fractionation important. Contact:

Dr. Sheldon Rothenberg (or)
Dr. Robert Goldstein
New York Medical College
Flower and Fifth Ave. Hospitals
106th St. and Fifth Ave.
New York, N.Y. 10029

Clinical Microbiologist. Opportunity to head Department of Microbiology in a hospital in New York City. Duties to include supervision of routine work in diagnostic microbiology and planning and carrying on research in medical microbiology. Candidate should possess Ph.D. or Sc.D. degree and interest in clinical microbiology. Salary commensurate with qualifications. Send complete résumé to Box 484, SCIENCE. X

Position available for **YOUNG PHYSICIST** interested in biomedical and accelerator research at midwestern medical school. Strong background in electronics and B.S. degree required.

Box 478, SCIENCE

PHARMACOLOGIST— PHYSIOLOGIST

A new position has developed requiring a recent Ph.D. preferably with a background in cardiovascular pharmacology or physiology. Duties will be to evaluate various chemical leads and investigate the mechanism and site of action of the more interesting compounds. In addition, the individual filling this opening will supervise approximately five junior pharmacologists in the performance of their duties and be expected to maintain close liaison with other members of the R & D Division.

Please send resume to: Cyrus M. Greenberg, Ph.D., Director of Scientific Employment, SMITH KLINE & FRENCH LABORATORIES, 1552 Spring Garden Street, Philadelphia, Pa. 19101. An Equal Opportunity Employer.



PHARMACOLOGISTS

Applications of Senior Pharmacologists are invited for vacancies in the Pharmaceuticals Department of expanding pharmaceutical company. The positions require a Ph.D. with 1-3 years postdoctoral experience, preferably in the field of analgesics and general neuropharmacology. Salary commensurate with experience. Outstanding employee benefits and working conditions.

Complete resume, which will be treated in confidence should be addressed to: PERSONNEL DIRECTOR

GEIGY CHEMICAL CORP.

P. O. Box 430, Yonkers, N.Y.

An Equal Opportunity Employer

PHYSICAL CHEMIST (Fundamental Research)

Ph.D. or equivalent with demonstrated independent research capability and with sufficient knowledge of plant physiology to plan and direct a program of basic studies of the limiting mechanisms of fertilizer-plant nutrition relations.

Salary commensurate with experience, plus liberal leave, retirement, insurance, and other employee benefits. Modern facilities, National Fertilizer Development Center at Muscle Shoals, Alabama. Write to:

Tennessee Valley Authority
Employment Branch
Knoxville, Tennessee

POSITIONS OPEN

UNIVERSITY OF NEWCASTLE UPON TYNE

Applications are invited for the post of **Senior Research Associate** in the Department of Organic Chemistry in the University of Newcastle upon Tyne. Applicants should possess a good Honours Degree in either Biochemistry or Chemistry and should have carried out postgraduate work in either subject. The position is for work on the biosynthesis and structure of substances in bacterial cell walls and membranes. The appointment is full-time in research but a limited amount of teaching is permitted. Salary £1,050 x £75 - £1,200 with F.S.S.U. benefits for 3 years from 1st October 1964, or by arrangement.

Further information available from Professor J. Baddiley, F.R.S., Department of Organic Chemistry, University of Newcastle upon Tyne, England, to whom application should be made.

The Market Place

DISPLAY: Insertions must be at least 1 inch in depth. Weekly invoices will be sent on a charge account basis—provided that satisfactory credit is established.

| | |
|--------------------|---------------|
| Single insertion | \$65 per inch |
| 4 times in 1 year | 60 per inch |
| 13 times in 1 year | 50 per inch |
| 26 times in 1 year | 50 per inch |

PROOFS: If copy is to be set, and proofs submitted for approval, complete copy and cuts must be received 4 weeks in advance of issue date (Friday of each week); complete plates no later than 3 weeks in advance of issue date.

BOOKS AND MAGAZINES

Authors

Your book can be published, promoted, distributed by a reliable company on a subsidized basis. Fiction, non-fiction, poetry, scholarly, religious and even controversial manuscripts welcomed. Free Editorial Report. For Free Booklet write Vantage Press, Dept. SC, 120 W. 31 St., New York 1, New York.

SUPPLIES AND EQUIPMENT

• HYPOPHYSECTOMIZED RATS

Shipped to all points via Air Express

For further information write

HORMONE ASSAY LABORATORIES, Inc.
8159 South Spaulding Ave., Chicago 29, Ill.

1919 - 1964

LaMotte Chemical

Chester town, Maryland, U.S.A.

Specialists in

Colorimetric Techniques

Reagents-Standards-Comparators

Send for illustrated

Controls Handbook

Dept. H

IDENTIFY YOUR ANIMALS

cats • dogs

rabbits • poultry • monkeys • guinea pigs

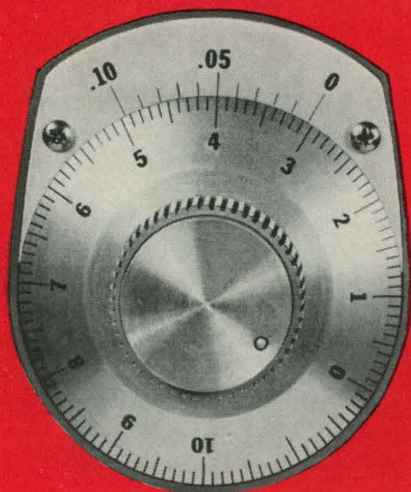
Color Coding Included

Write for free

Ident-A-Band®
samples

HOLLISTER
INCORPORATED
835 N. Orleans St., Chicago 10, Ill.

OHAUS



Fastest Weigh Yet!

THE NEW

DIAL O GRAMTM
310

To the already superlative Cent-O-Gram features we have now added the convenience of direct dialing and magnetic damping to give you the "Fastest Weigh Yet".

- EASY DIRECT-READING DIAL
10 GRAMS TO .01 GRAM
- FRICTION-FREE MAGNETIC DAMPING
LIFE-TIME PERMANENT ALNICO MAGNETS
- TRUE PRECISION SPRING FOR EXTREME ACCURACY
OVER LIFE OF BALANCE

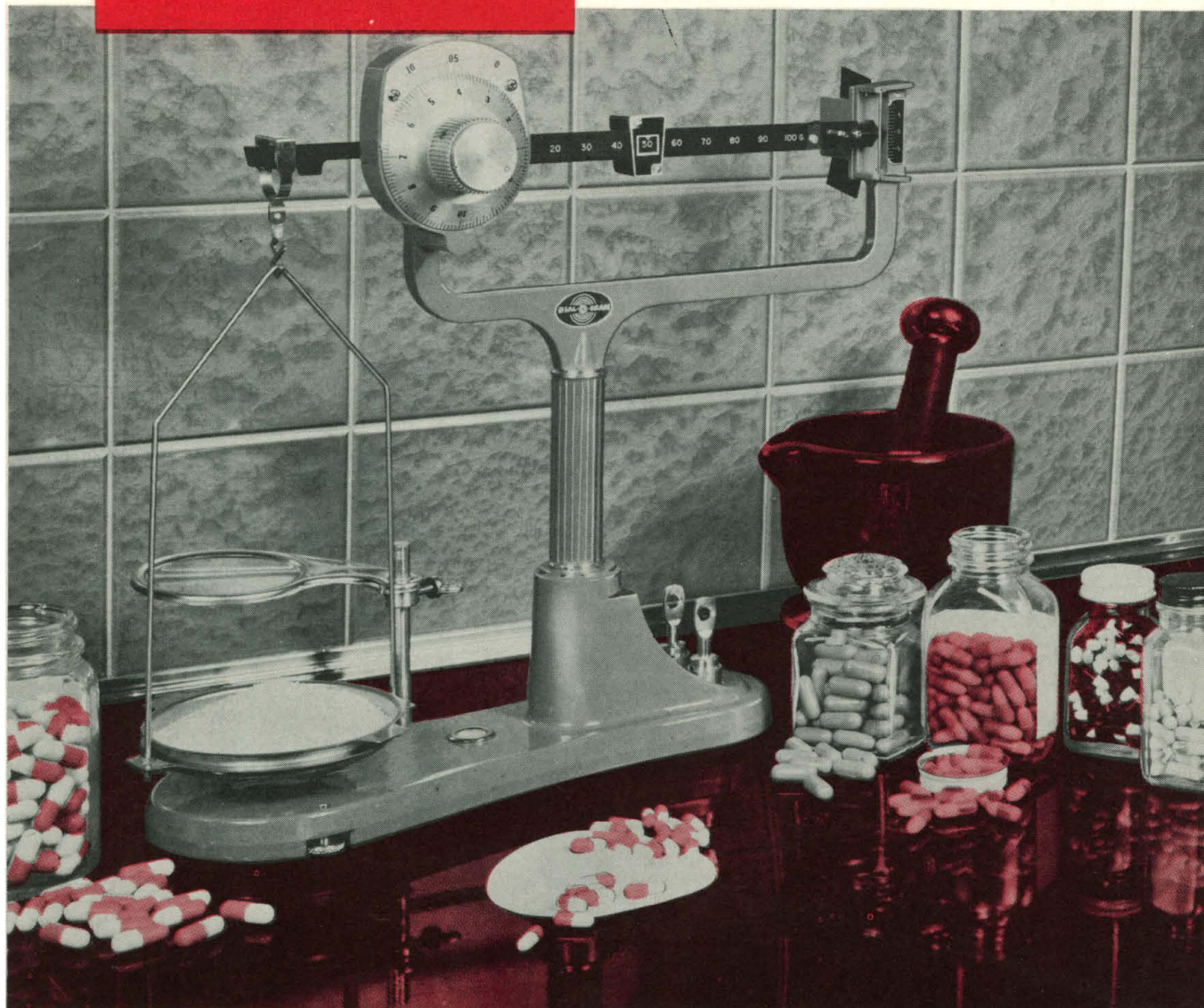
all for only \$49.75

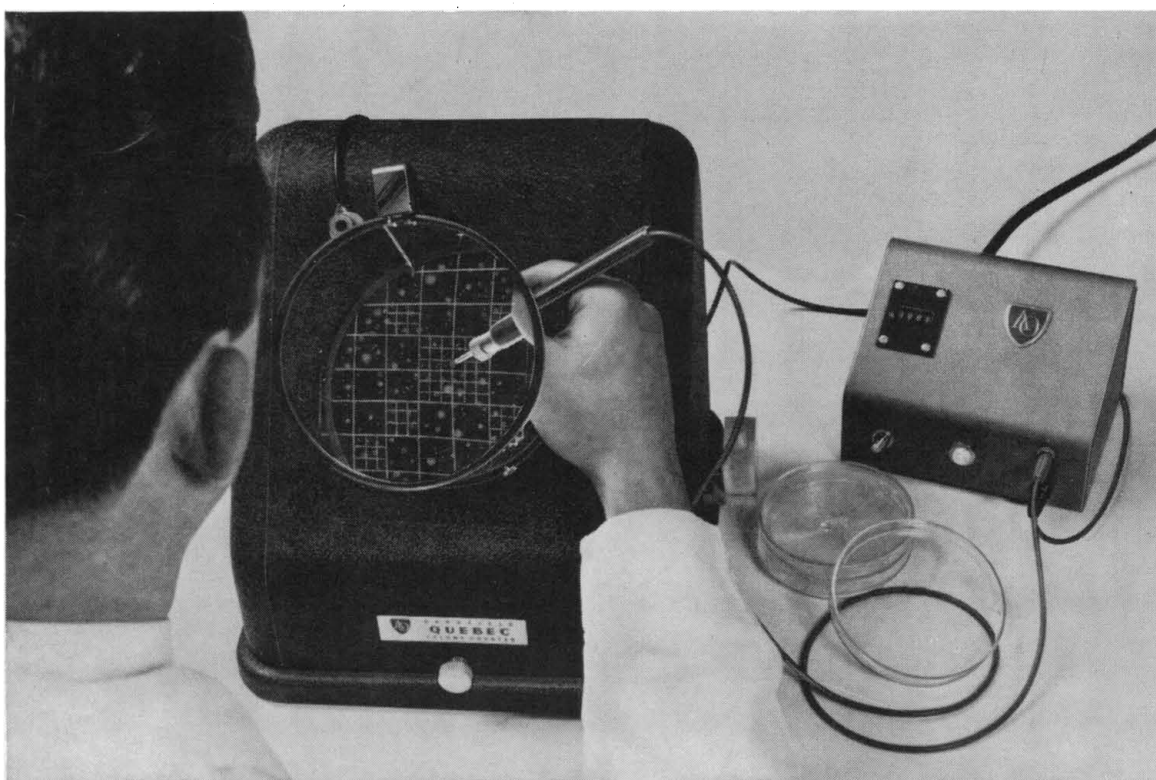
Write for Bulletin No. 3D.

OHAUS SCALE CORPORATION
1050 COMMERCE AVENUE • UNION, N. J.

Dept. HF

3





NEW! AO Electronic Register for fast, accurate recording of colony counts

The new AO Spencer Electronic Register can be used with your AO Quebec® Colony Counter (or other counters) to provide precise recording of bacteria counts. The count is instantly recorded on the register upon contact of the probe with the media. It's fast...up to 12 counts per second without jitter or sputtering. It's transistorized...requires no warmup time.

An optionally available marking pen can be used instead of the probe when it's desirable to make counts from a

closed petri plate or dish. The pen is used to mark the location of each counted colony on a permeable membrane applied to the bottom of the plate. Each mark on the membrane is automatically recorded on the Electronic Register. Difficult-to-remove grease pencil marks are eliminated. Replacement pen cartridges are commercially available in various colors to permit differential counts.

Ask your AO Dealer about the new AO Electronic Register, or write:

®Registered Trademark American Optical Co.



AMERICAN OPTICAL COMPANY
INSTRUMENT DIVISION • BUFFALO, NEW YORK 14215

Dept. H3 — Gentlemen: Please send information on the AO Electronic Register.

Name _____

Address _____

City _____

State _____

Zip Code _____

IN CANADA write — P. O. Box 130, Postal Station R, Toronto 17, Ontario