

neers, 27th annual, Milwaukee, Wis. (ASTE, 10700 Puritan, Detroit 38, Mich.)

19-23. Oil and Gas Power Conf. (American Soc. of Mechanical Engineers), Houston, Tex. (O. B. Schier, ASME, 29 W. 39 St., New York 18.)

19-24. American Pharmaceutical Assoc., annual conv., Cincinnati, Ohio. (R. P. Fischelis, APA, 2215 Constitution Ave., Washington 7.)

20-21. Recording and Controlling Instruments Conf. (American Inst. of Electrical Engineers), Philadelphia, Pa. (N. S. Hibshman, AIEE, 33 West 39 St., New York 18.)

20-22. American Oil Chemists' Soc.,

spring, 50th anniversary, New Orleans, La. (Mrs. L. R. Hawkins, 35 E. Wacker Dr., Chicago 1, Ill.)

20-23. American Urological Assoc., Atlantic City, N.J. (S. L. Raines, 188 S. Bellevue Blvd., Memphis, Tenn.)

20-23. International Anesthesia Research Soc., 33rd cong., Miami Beach, Fla. (A. W. Friend, IARS, E. 107 and Park Lane, Cleveland 6, Ohio.)

20-24. American College of Physicians, Chicago, Ill. (E. R. Loveland, 4200 Pine St. Philadelphia 4, Pa.)

21-23. American Assoc. for Thoracic Surgery, Los Angeles, Calif. (H. T. Langston, 7730 Carondelet Ave., St. Louis 5, Mo.)

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 appears on page 166.

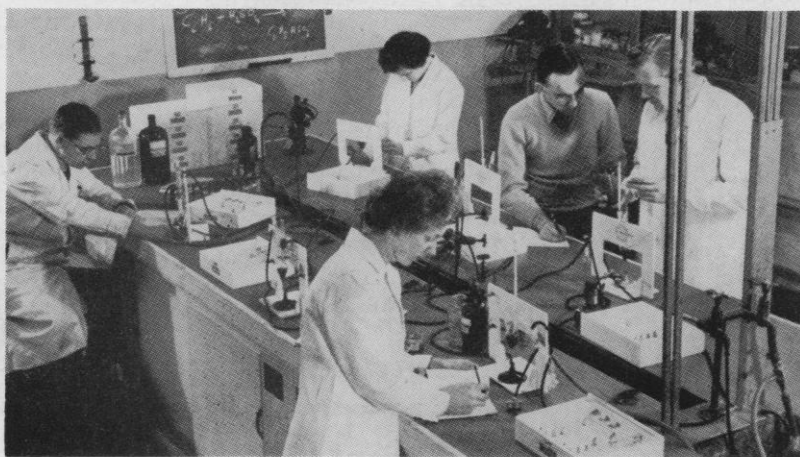
■ **PHOTOELECTRIC POLARIMETER** combines a colorimeter with an adapter unit to permit determination of optical rotation of solutions irrespective of the sign and magnitude of the specific rotation. Moderately turbid and colored solutions can be measured. Precision is approximately 0.05 deg at small angles and 0.1 deg at 20 deg. Since measurements can be made at any wavelength within the visible spectrum, determination of rotatory dispersion is possible. The adapter may be used with existing colorimeters. (Photovolt Corp., Dept. 573)

■ **MASS FLOWMETER** consists of two matched metering components, a variable-force element and a volumetric element. The variable-force element produces a voltage proportional to the product of the square of volume flow and fluid density. The volumetric element produces a frequency proportional to volume flow. The latter is divided electronically into the former to yield mass flow. Accuracy is ± 1 percent of the measured flow. Ranges up to 10^6 lb/hr can be furnished. (Fischer & Porter Co., Dept. 584)

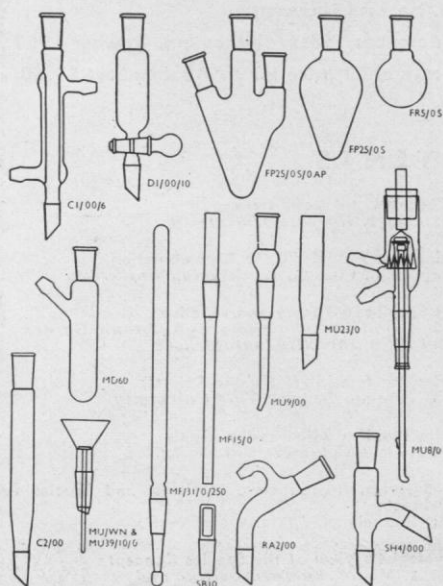
■ **TAPE PUNCH** will accommodate paper tape of either the oiled or unoled variety up to 1 in. wide. Up to eight columns may be punched at operating rates up to 27 punches per second. The unit is designed for console or rack mounting and measures 6 by 11 by $3\frac{3}{4}$ in. (Precision Specialties, Inc., Dept. 585)

■ **DRYING OVEN** for paper chromatographs accommodates three sheets $18\frac{1}{4}$ by $22\frac{1}{2}$ in. A reinforced safety-glass door affords continual viewing of the contents. The oven heats up to a preset temperature, up to 110°C , within 20 min. Evacuation of air and solvent vapor is accomplished by connection to a water aspirator. Intake air is heated to the desired temperature. Baffles conceal heating elements and prevent contact of solvent drippings with elements. (New Brunswick Scientific Co., Dept. 587)

■ **ELECTRICAL-INSULATION TAPE** is completely inorganic. The tape consists of 0.004-in. glass cloth saturated and coated on one side with silicone rubber and on the other with silicone thermosetting pressure-sensitive adhesive. Useful temperature range is -50° to $+180^\circ\text{C}$. Thermosetting is accomplished at 500°F . (Minnesota Mining and Manufacturing Co., Dept. 589)



SEMI-MICRO UTILITY SET



This is a Set of Semi-Micro Preparations Apparatus, Consisting of 20 Interchangeable Components and a Specially-Designed Box.

The Box, 28 x 23 x 7 Cm. Has All the Appropriate Spring Clips to Hold Assemblies When in Use, and Also Serves as an Ideal Housing for the Set.

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RECOVERY—as recovery of solvents.

STEAM DISTILLATION—as distillation of Aniline.

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VACUUM DISTILLATION—as purification of high boiling liquids.

SEPARATION AND EVOLUTION OF GAS—as separation of two immiscible liquids, eg. ether and water.

GAS FLOW REACTION—as estimation of alcohol by oxidation.

REFLUX—reaction under simple reflux.

Cat. No. S-71670—"QUICKFIT" SEMI-MICRO UTILITY SET—consisting of 20 components, mounted in box \$50.00



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Supply Corp. 808 BROADWAY
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LABORATORY
APPARATUS
REAGENTS
AND
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■ **DIGITAL VOLTMETER** is accurate to ± 0.015 percent over three automatically switched ranges of ± 10 , ± 100 , and ± 1000 v d-c. Input impedance is 10 megohm at all times. During operation, the voltmeter balances the input signal with a signal from a digital-to-analog converter and presents the converter reading at balance. The measurement is repeated 15 times per second. Output is a dot-projected visual read-out and a ten-line decimal code. The visual read-out shows four digits, polarity sign, and location of the decimal point. (Beckman Instruments, Inc., Dept. 590)

■ **RANDOM-ACCESS MEMORY** uses apertured ferrite plate as the storage medium. Capacity is 512 eight-binary-digit characters. Access time in 12 μ sec. All logic, power-supply, and signal-amplification circuitry is transistorized. Operating temperatures range from 65° to 105°F; no supplemental cooling is required. The system is capable of expansion in both storage capacity and word length. (Rese Engineering, Inc., Dept. 592)

■ **ION-EXCHANGE CELLULOSES** are available in four types. Cellex-E is a monofunctional anion exchanger with only tertiary amine functional groups; Cellex-D is a monofunctional anion exchanger with only tertiary amino functional groups; Cellex-P is a dibase cation exchanger with phosphoric acid functional groups; Cellex-CM is a cation exchanger with only carboxymethyl sites as functional groups. All types are analytical grade. (Bio-Rad Laboratories, Dept. 594)

■ **X-RAY IMAGE INTENSIFIER** covers a useful area of more than 41 in.² with an increase in brightness by a factor of 350 over that obtainable with a fluorescent screen. Contrast between 1.5 to 2.5 percent absorption differences is said to be observable in areas 3/16 to 1/4 in. in diameter. Closed-circuit television is used for viewing. Response speed is great enough to permit movements of the patient to be reproduced without loss of detail. (Zenith Radio Corporation, Dept. 596)

■ **LEVEL GAGE** measures liquid level in totally enclosed containers with accuracy to a few hundredths of an inch. A small radioactive source contained in a float follows the level of liquid along a path predetermined by guide lines placed inside the tank. Radiation is detected by a scintillation detector located outside the tank. The change in radiation is calibrated in terms of volume or linear distance. (Radiation Counter Laboratories, Inc., Dept. 597)

JOSHUA STERN

National Bureau of Standards

16 JANUARY 1959

COCARBOXYLASE

The Pyrophosphate of Thiamine that has been observed to catalyze the oxydative decarboxylation of keto acids and that is proving important—especially as a coenzyme in pyruvic acid conversions. Recent investigations have shown that a number of diseases are accompanied by an increased pyruvic acid level, e.g. diabetic coma and acidosis, pregnancy and infantile toxicoses, acetonaemic vomiting, preeclampsia, eclampsia and severe cardiac and circulatory decompensation. Cocarboxylase will result in the lowering of the pathologically increased pyruvic acid level.

Write for detailed information, literature references and prices.

AET

2-aminoethylisothiuronium bromide • hydrobromide

A NEW RADIATION PROPHYLACTIC

Discovered by Dr. David G. Doherty and associates at Oak Ridge, AET is now offered in commercial supply by Schwarz Laboratories and as tablets for clinical investigation (ANTIRADON). Extensive experiments on mice have shown markedly enhanced survival when AET is administered prior to exposure to lethal radiation. Similar effects have been shown on monkeys. Studies on humans are being conducted currently. The protection provided by AET is believed to result from the formation of free sulfhydryls "in situ" that combine with and detoxify free radicals. This property provides possibilities for other physiological studies, e.g. enzyme activation.

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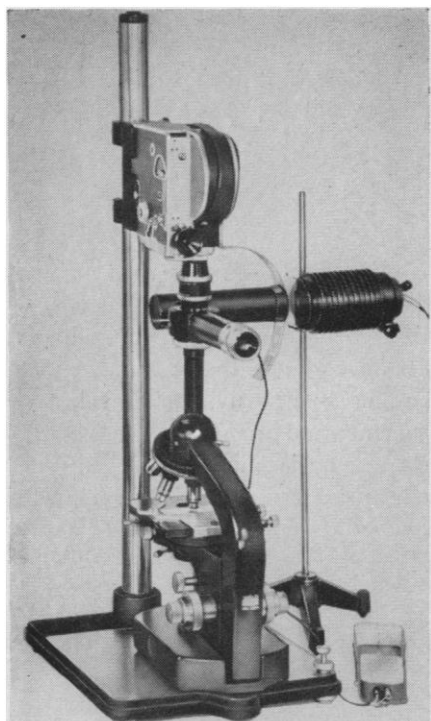
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Write for complete Schwarz Price List

SCHWARZ LABORATORIES, INC.

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For unparalleled versatility in MICROSCOPY

The Wild M20 microscope is without a peer in the realm of microscopy. This superb example of Swiss craftsmanship and precise optics provides almost unbelievable versatility for both research and scientific exploration.

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Attachments include the Cinetube (shown above), Camera II, Universal Lamp, Episcopic Equipment and Phase Contrast.

The Wild Cinetube, designed for use with any 16mm movie camera having 50mm or 75mm focal lengths, permits critical focusing on the specimen while actually exposing film. It contains two, built-in, beam-splitters together with a photo electric cell for exposure determination (with a galvanometer) and an internal projection tube for titling or designating pertinent footage.

Your consideration of the Wild M20 will prove most rewarding. Write for Booklet M-20 today.

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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	\$26.00 per inch
13 times in 1 year	24.00 per inch
26 times in 1 year	23.00 per inch
52 times in 1 year	22.00 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 WANTED

Botanist-Plant Physiologist, strong horticultural experience, available summer 1959. Cornell Ph.D., publications, research-administrative experience, age 40. Box 1, SCIENCE. 1/16

Physiologist-Biochemist, Ph.D.; 8 years of industrial and academic research experience in fields of endocrinology, enzymology, carbohydrate and lipid metabolism. Desires challenging research position. Publications. Box 2, SCIENCE. 1/16

Virology-Tissue Culture, D.V.M., Ph.D., 34, excellent experience human and animal viruses. Experimental pathology, cancer. Desires change. Box 9, SCIENCE. 1/23

Zoologist, Ph.D., 10 years of teaching experience. Numerous publications. Box 7, SCIENCE. 1/23

POSITIONS OPEN

Applications are invited for the position **Assistant Professor of Biology** to give instruction in physiology, embryology, and histology. Opportunities for research are available. The salary scale is \$5400-\$7000. A contributory pension scheme is in operation. Moving expenses are payable by the university to a maximum of \$750. Applications containing a complete curriculum vitae and the names and addresses of three referees should be sent to the Head, Department of Biology, Memorial University of Newfoundland, St. John's, Newfoundland. 1/23, 30

Biochemist, Physiologist or Biologist with strong biochemical interests, recent or 1959 Ph.D., desired to participate in basic research on cellular metabolism and renal transport mechanisms. May Institute for Medical Research, 421 Ridgeway Avenue, Cincinnati 29, Ohio. 1/16; 2/20; 3/20; 4/17

Biologists, Ph.D.'s, new state college, southern California. Prefer background in physiology, genetics, embryology, microbiology, or botany. Please send full résumé to Ralph Prator, President, San Fernando Valley State College, Northridge, California. 1/9, 16, 23

(a) **Director of Research**; minimum Ph.D., preferably M.D. or D.V.M.; experience in pharmaceutical field and research capacity required; should be able to organize department and direct staff of 25; \$12,000 to \$18,000; Midwest. (b) **Endocrinologist**, Ph.D. or preferably M.D. with experience in broad aspects of endocrinology; emphasis on medical-biological rather than biochemical side; duties consist of organizing and directing group for endocrinologic research. (c) **Young Biochemist**, Ph.D.; group association; \$8400-\$12,000; California. (d) **Biochemist**, M.S. or Ph.D.; 400-bed general hospital; new diagnostic center and laboratory; college town in New Jersey, few miles from New York; \$6000-\$9000 dependent qualifications. (e) **Publishing Director**; should have certain qualifications in direction of sales and promotions; East. S1-3 Medical Bureau, Burneice Larson, Director, 900 North Michigan, Chicago, Illinois. X

POSITIONS OPEN

Biologist to head scientific staff of growing, established biological supply house. Field collecting experience, plus knowledge of preserving and other biological techniques necessary. Ph.D. degree desired. Administrative ability and teaching experience required. Paid vacations, holidays, benefits, salary opportunities. Box 8, SCIENCE. 1/23, 30; 2/6

Equipment Technician. Background in any area of natural science; 2 years experience in design and construction of laboratory equipment and materials for instructional purposes; B.S. degree preferred. Ability to supervise and train technical nonteaching employees; small college town in northern California; salary: \$4980-6060. Inquiries should be made to Staff Personnel, Chico State College, Chico, California. X

Laboratory Technician. Openings for qualified technicians with backgrounds in any one of following scientific fields: physics, chemistry, biochemistry, immunology, and neurohistology. Salary good. Excellent benefits. Good opportunity for advancement. Write or call Mr. Kay, Personnel Director, Montefiore Hospital, Bronx 67, New York, OLinville 2-7787. 1/16

New World-Wide Graduate Award Directories for American scientists, teachers, librarians to subsidize their education and research. Stipends \$200-\$10,000. Volume I (1957), \$3; volume II (just published, no duplication), \$3; both volumes, \$5. Limited editions. Complete, specific information on 400 awards in United States and overseas in each volume. CRUSADE, Sci., Box 99, Station G, Brooklyn 22, N.Y. eow

Pharmaceutical Product Development. Challenging position, in New York area. Proved background for full responsibility of new product development, contact with clinical investigators, and so forth; growing company. Reply should include record of product development and salary level. Box 5, SCIENCE. 1/16, 23

Ph.D., Experienced in Clinical Chemistry, to supervise group of analytical technicians. Salary \$10,000 or more, depending on experience. Southern California location. Box 255, SCIENCE. 1/16

Ph.D., Biochemistry, recent graduate, to supervise group of technicians for routine and research. Southern California location. Box 256, SCIENCE. 1/16

Physiologist, Psychologist, and Physicist, Ph.D. or M.S. with appropriate experience. Strong research orientation required. To join a rapidly expanding Human Factors and Space Psychophysiology Group. Research presently undertaken by the group covers the fields of perception, human transfer functions, motor response dynamics, analyses of man as a component in complex weapon systems, animal performance in simulated space flight conditions, and other studies related to both conventional and space type weapon systems. Salary will parallel experience and demonstrated achievement. Please send résumé to Mr. C. G. Jones, Manager, Salary Personnel, Goodyear Aircraft Corporation, 1210 Massillon Road, Akron 15, Ohio. 1/23

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

UNIVERSITY OF ALBERTA. Application is invited for the position of **Assistant Professor of Botany**. Applicants should hold the Ph.D. degree and have a well-developed research program in some field of plant physiology. Preference will be given to plant physiologists with a strong background training in biochemistry.

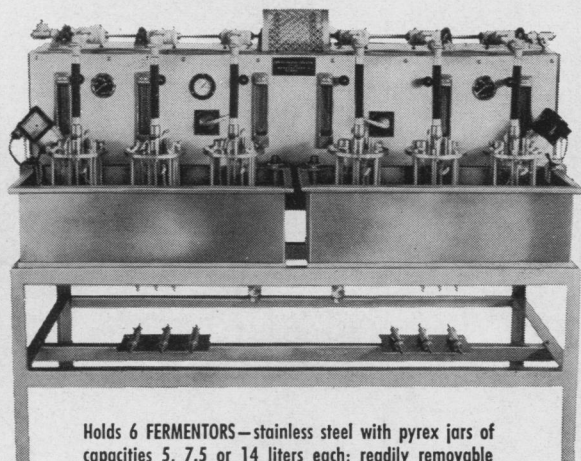
The incumbent would be expected to teach one or more courses in plant physiology and to participate in the elementary program. Every encouragement for research will be afforded. For this position, the beginning salary will be \$6000 to \$7000 per annum, depending upon the qualifications of the applicant.

Applications should be submitted to Dr. D. E. Smith, Dean of the Faculty of Arts and Science, University of Alberta, Edmonton, Canada, not later than 1 March 1959. Each applicant should provide a curriculum vitae, a transcript of record, a recent photograph, and the names of three references. X

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For laboratory and pilot plant application

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Holds 6 FERMENTORS—stainless steel with pyrex jars of capacities 5, 7.5 or 14 liters each; readily removable for autoclaving; special leak-proof, non-freezing ball bearing agitator housings.

Stainless steel baths, thermostatically controlled within $\pm 1/2^\circ\text{C}$. Twin drives afford wide range of agitation and aeration rates.

Machine available with automatic anti-foam addition system. Single and 3-fermentor drive assemblies also available.



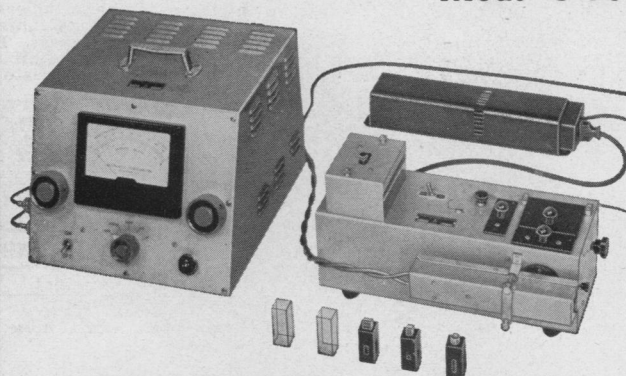
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- High-sensitivity for measurement of low concentrations (full-scale setting for 0.001 microgram quinine sulphate)
- Micro-fluorimetry with liquid volumes as low as 1 ml
- Low blank readings, strict linearity of instrument response
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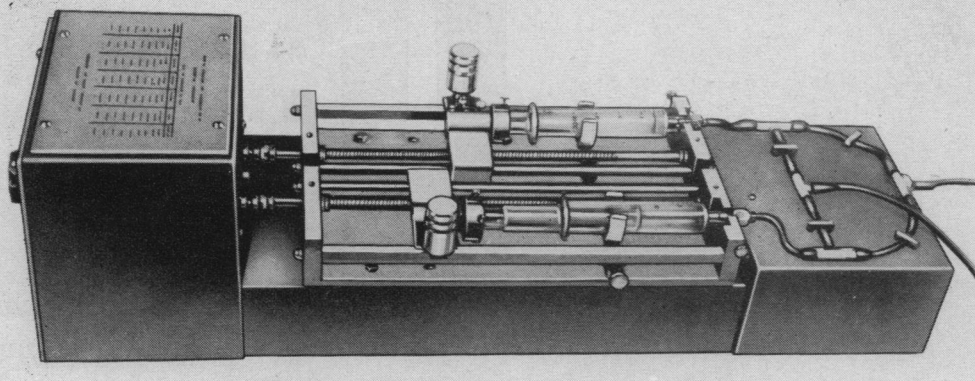
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CATALOG NO. 600-950

The 600-950 is a double infusion-withdrawal unit accomplishing automatic and continuous transfer of large quantities of liquids over extended periods of time. High accuracy is produced by a synchronous motor and precision-cut lead screws. As all actions are automatic, the pump will run continuously without maintenance. Limit stops reverse motor direction and change valves. While one syringe is filling, the other is emptying. Valves are solenoid-operated Hoffman-type clamps acting on the outside of

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SPECIFICATIONS

- 12 exact speeds over a 5000-1 range
- 72 separate pumping and withdrawal rates from 38.2 cc./min. to 0.0008 cc./min.
- Reproducibility of $\pm 0.5\%$
- Accepts standard Luer-Lok syringes

\$575.00 — f.o.b. Dover, Mass.

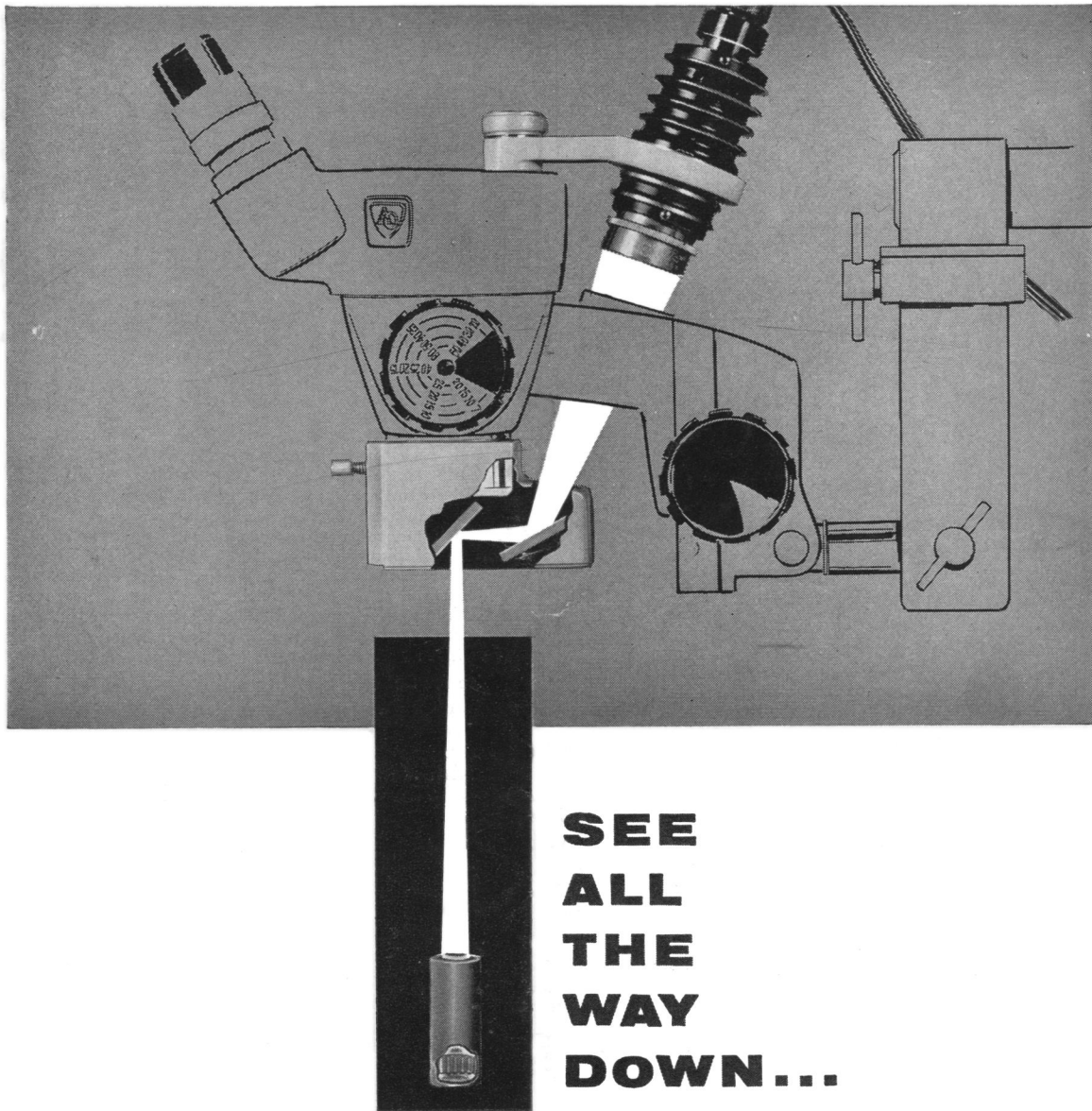
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THE
WAY
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Dept. M-3

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