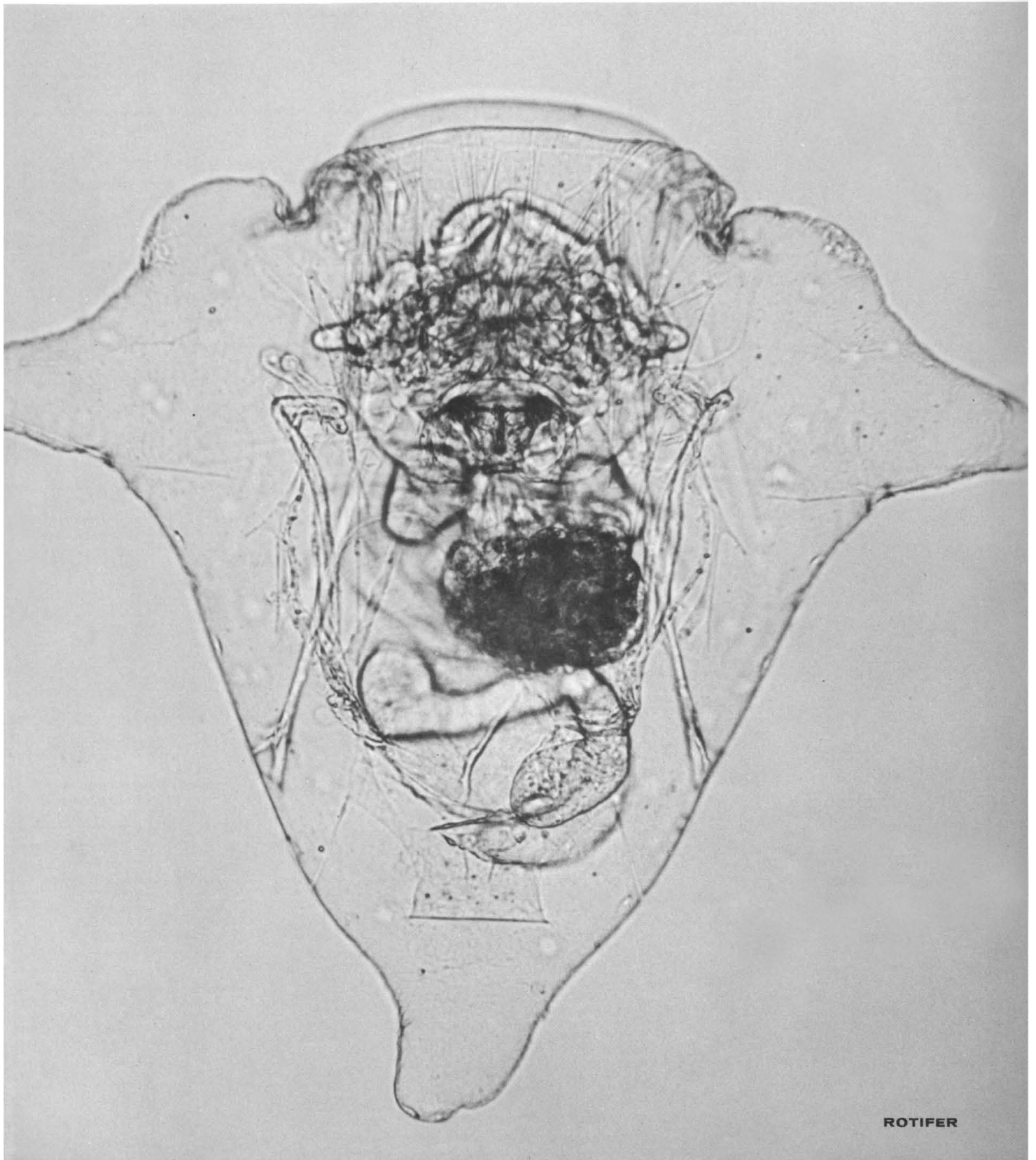


# SCIENCE

16 February 1968

Vol. 159, No. 3816

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



ROTIFER

# In G.C., you need widest dynamic range, lowest noise and drift, column/detector versatility.

## Get them all with the Model 900.

The easy-to-operate Perkin-Elmer Model 900 is for the analyst who wants the best and most businesslike G. C. available. It literally has everything you need today—and sets the standards for tomorrow.

Look at these features:

All analytical conditions are optimized for any type of sample you may encounter. The unique amplifier unquestionably provides the widest dynamic range in the business, for ease in interfacing the instrument with fast-moving computers. The Model 900, in-

deed, has the highest effective sensitivity—the lowest noise and drift—of any gas chromatograph going.

In the oven, there's dual column versatility, with simultaneous use of the most proven types of G. C. detectors, capable of being paired in all advantageous combinations. You get a truly controlled range of column temperatures (from a cryogenic  $-65^{\circ}\text{C}$ . to  $400^{\circ}\text{C}$ ).

Then add the total temperature control system, with four separate temperature zones, featuring a unique

separate insulating buffer area between columns and detectors. Temperatures are directly calibrated on column oven dials, with zero error resettability—plus selectable temperature programming.

Operation is fully automatic, providing the most useful, *repeatable* separations of any G. C.

For even more detailed information, write on your company letterhead, to: Instrument Division, Perkin-Elmer Corporation, 723 Main Avenue, Norwalk, Connecticut 06852, or your nearest Perkin-Elmer office.





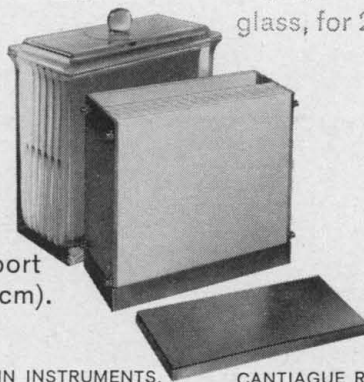
**APPARATUS FOR ANALYTICAL AND PREPARATIVE TLC—Applicators:** ☐ Adjustable, to 2 mm ☐ Adjustable, stainless steel, gradient-layer type ☐ Adjustable, to 5 mm, preparative **Glass Plates:** ☐ Standard glass, in 6 sizes ☐ Borosilicate **Mounting Boards:** ☐ Standard plexiglass and special stainless steel types **Drying Racks:** ☐ Aluminum, for 10 plates ☐ for 15 plates, 20 x 20 cm ☐ for 10 plates, 20 x 40 cm **Drying Ovens:** ☐ Small, for drying racks holding plates to 20 x 20 cm ☐ Large, for drying racks holding plates to 20 x 40 cm **Desiccators:** ☐ Vacuum desiccator, glass, for 20 x 20 cm rack ☐ Vacuum desiccator, stainless steel, for 20 x 20 cm rack ☐ Vacuum desiccator, plastic, for 20 x 40 cm rack **Storage Cabinets:** ☐ Wood, for 20 x 20 cm ☐ Wood, for 24 plates, 20 x 40 cm ☐ Stainless steel, small, for one drying rack (20 x 20 cm) ☐ Stainless steel, for drying racks (20 x 40 cm) **Labeling Templates:** ☐ Standard template, graduated ☐ Special template, for anti-oxidants **Developing Systems:** ☐ Micro Pipets, glass, 0.01 cc ☐ Micro Pipets, Lang-Levy type, 1-10 lambda ☐ Micro Syringe, 0.01 cc with Chaney adapter, 0.05 cc ☐ Micro Syringe, push-button type, 0.05 cc ☐ Micrometer buret, glass and Teflon ☐ Capillary tubes, 2 lambda ☐ Wide-mouth glass plates ☐ Standard developing tank (20 x 20 cm) ☐ Special stainless steel tank for controlled atmospheres ☐ Low-pressure tank for plates 20 x 20 cm ☐ Stainless steel development **Application Box:** ☐ Atmospheric ☐ UV lamp, short and long wave ☐ Reagents, pre-packaged ☐ Plastic **MECHANICAL APPARATUS FOR PREPARATIVE TLC:** ☐ Electromechanical sample streaker, for 20 x 40 cm ☐ Vacuum zone collector **APPARATUS FOR THIN-LAYER CHROMATOGRAPHY:** **ANALYTICAL TLC:** ☐ Aluminum Oxide, plain, with UV indicator ☐ Aluminum Oxide, plain, with UV indicator ☐ Cellulose Powder, with CaSO<sub>4</sub> ☐ Cellulose Powder, with CaSO<sub>4</sub> 40% ☐ Cellulose Powder, carboxymethylated ☐ Cellulose Powder, polyethylenimine ☐ Cellulose Powder, polyphosphate cation exchanger ☐ Silica Gel, with CaSO<sub>4</sub> and UV indicator ☐ Silica Gel, plain ☐ Silica Gel, plain, specially purified ☐ Silica Gel, plain, with UV indicator ☐ Silica Gel, plain, silanized ☐ Silica Gel, plain, with 2 UV indicators ☐ Silica Gel, with starch ☐ Silica Gel, with starch and UV indicator ☐ Silica Gel, with starch and UV indicator ☐ Kiesels gel, with CaSO<sub>4</sub> ☐ Polyamide Powder, plain ☐ Polyamide Powder, with UV indicator ☐ Polyamide Powder, acetylated **SORBENTS FOR PREPARATIVE TLC:** ☐ Aluminum Oxide, special, with UV indicator ☐ Aluminum Oxide, special, with 2 UV indicators ☐ Silica Gel, special with UV indicator ☐ Silica Gel, special with UV indicator ☐ Silica Gel, special, with 2 UV indicators ☐ Silica Gel, special, with UV indicator, for layers to 10 mm **DEVELOPING SYSTEMS FOR ANALYTICAL AND PREPARATIVE TLC—Pre-Coated Glass Plates, Analytical:** ☐ Aluminum Oxide, 5 x 20 and 20 x 20 cm ☐ Silica Gel, 5 x 20 and 20 x 20 cm ☐ Silica Gel, with UV indicator, 5 x 10, 10 x 10, 5 x 20 and 20 x 20 cm ☐ Cellulose Powder, with UV indicator, 5 x 10, 10 x 10, 5 x 20, 10 x 20 and 20 x 20 cm **Pre-Coated Glass Plates, Preparative:** ☐ Silica Gel, with UV indicator, 20 x 20 cm, layer 2 mm thick **Pre-Coated Plastic Sheets, Analytical:** ☐ Aluminum Oxide, 20 x 20 cm ☐ Aluminum Oxide, with UV indicator, 5 x 20 and 20 x 20 cm ☐ Cellulose Powder, 5 x 20 and 20 x 20 cm ☐ Cellulose Powder, with UV indicator, 5 x 20 and 20 x 20 cm ☐ Cellulose Powder, PEI, 20 x 20 cm ☐ Cellulose Powder, acetylated, 20 x 20 cm **APPARATUS FOR ANALYTICAL AND PREPARATIVE TLC—Applicators:** ☐ Adjustable, to 2 mm ☐ Adjustable, stainless steel, gradient-layer type ☐ Adjustable, to 5 mm, preparative **Glass Plates:** ☐ Standard glass, in 6 sizes ☐ Borosilicate **Mounting Boards:** ☐ Standard plexiglass and special stainless steel types **Drying Racks:** ☐ Aluminum, for 10 plates ☐ for 15 plates, 20 x 20 cm ☐ for 10 plates, 20 x 40 cm **Drying Ovens:** ☐ Small, for drying racks holding plates to 20 x 20 cm ☐ Large, for drying racks holding plates to 20 x 40 cm **Desiccators:** ☐ Vacuum desiccator, glass, for 20 x 20 cm rack ☐ Vacuum desiccator, stainless steel, for 20 x 20 cm rack, etc. **FOR EXAMPLE:**

#### **New Desaga Multi-plate Glass Developing Tank**

A die-formed tank with molded glass grooves to support five home-made or pre-coated TLC plates (20 x 20 cm).

#### **New Brinkmann Stainless Steel Multi-plate Tank**

An all-stainless steel developing tank with grooves that support up to 17 E. Merck-type pre-coated glass TLC plates (20 x 20 cm).



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CANTIAGUE ROAD, WESTBURY, N. Y. 11590



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<b>LETTERS</b>	AAAS Meetings: Complex and Diffuse: <i>E. L. Yochelson</i> ; A Breath of New York: <i>J. M. Campbell</i> ; Cold North Winds: <i>W. K. Engel</i> ; The Naiveté of Science: <i>T. H. Jukes</i> .....	693
<b>EDITORIAL</b>	After New York—What Next? .....	697
<b>ARTICLES</b>	Quantum Electronics, and Surprise in Development of Technology: <i>C. H. Townes</i> ..	699
	Teaching Science in High School—What Is Wrong?: <i>B. F. Skinner</i> .....	704
	The Experimental City: <i>A. Spilhaus</i> .....	710
<b>NEWS AND COMMENT</b>	NIH: Heightened Concern about Choosing Shannon's Successor .....	715
	Geneva: Molecular Biology Research Comes of Age .....	718
	Draft Delinquents: Professors Face Possible Induction .....	721
<b>BOOK REVIEWS</b>	<i>Psychoanalysis Observed</i> and <i>The Americanization of the Unconscious</i> , reviewed by <i>W. Ryan</i> ; other reviews by <i>J. A. Clausen</i> , <i>R. H. Manville</i> , <i>O. Hannaway</i> , <i>F. Lipmann</i> , <i>M. B. Allen</i> , <i>R. A. Guyer</i> , <i>H. W. Levi</i> ; Books Received .....	723
<b>REPORTS</b>	Block Faulting on the Gorda Rise: <i>T. M. Atwater</i> and <i>J. D. Mudie</i> .....	729
	Lysergic Acid Diethylamide (LSD): No Teratogenicity in Rats: <i>J. Warkany</i> and <i>E. Takacs</i> .....	731
	Carbon-14 Milk Constituents from Cows Fed Carbamate Labeled with Carbon-14 on the Carbonyl: <i>H. W. Dorough</i> and <i>G. W. Ivie</i> .....	732

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# AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Alpha Tocopherol Control of Sexuality and Polymorphism in the Rotifer <i>Asplanchna</i> : <i>J. J. Gilbert and G. A. Thompson, Jr.</i> .....	734
Myoglobin Subfractions: Abnormality in Duchenne Type of Progressive Muscular Dystrophy: <i>K. Miyoshi et al.</i> .....	736
Feeding Schedule Alteration of Daily Rhythm in Tyrosine Alpha-Ketoglutarate Transaminase of Rat Liver: <i>R. W. Fuller and H. D. Snoddy</i> .....	738
Structure of Membranes: Reaction of Red Blood Cell Membranes with Phospholipase C: <i>J. Lenard and S. J. Singer</i> .....	738
Genetic Selection for Voluntary Alcohol Consumption in the Albino Rat: <i>K Eriksson</i> ..	739
Hemoglobin Rainier ( $\beta^{145}$ Tyrosine $\rightarrow$ Histidine): Alkali-Resistant Hemoglobin with Increased Oxygen Affinity: <i>G. Stamatoyannopoulos et al.</i> .....	741
Myotatic Reflex: Its Input-Output Relation: <i>R. E. Poppele and C. A. Terzuolo</i> .....	743
Paradoxical Sleep: Effect of Low Partial Pressures of Atmospheric Oxygen: <i>J. Huertas and J. K. McMillin</i> .....	745
<i>Technical Comments</i> : X-rays from Source 3C 273; <i>E. Argyle; H. Friedman,</i> <i>E. T. Byram, T. A. Chubb</i> ; Chromosome Damage Not Found in Leukocytes of Children Treated with LSD-25: <i>L. Bender and D. V. S. Sankar; S. Irwin and</i> <i>J. Egozcue</i> .....	747

## ASSOCIATION AFFAIRS

H. Bentley Glass, President-Elect: <i>Th. Dobzhansky</i> .....	750
AAAS Council Meeting, 1967: <i>D. Wolfe</i> .....	751
AAAS Officers, Committees, and Representatives for 1968 .....	754
The 1967 Meeting of the AAAS: A Retrospect: <i>W. G. Berl</i> .....	758

## MEETINGS

Calendar of Events .....	762
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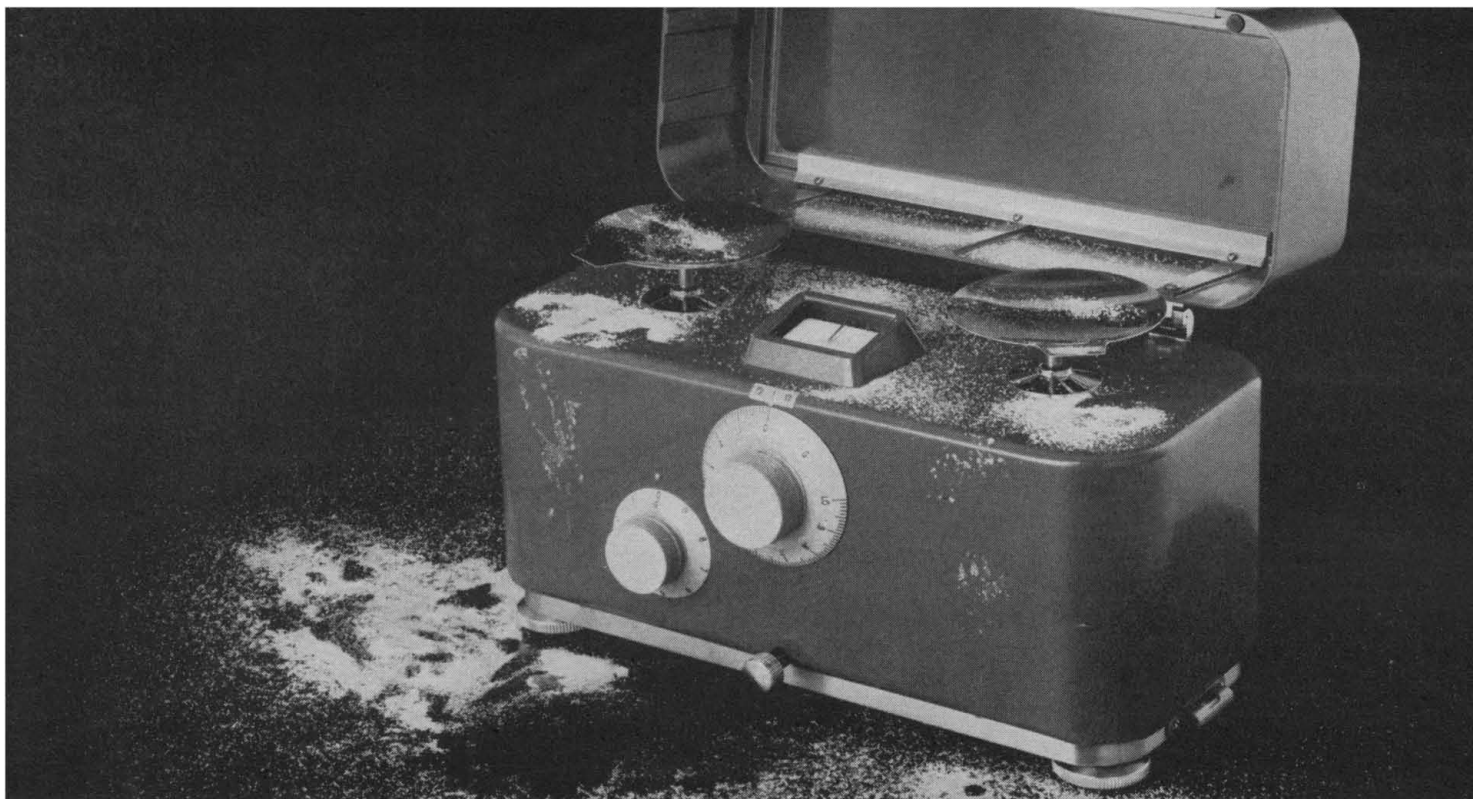
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STATISTICS (U)  
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## COVER

Humps in the rotifer *Asplanchna sieboldi* induced by alpha tocopherol. The extension of such humps is caused by positive pressure created in the body cavity when the head is withdrawn (about  $\times 275$ ). See page 734. [John J. Gilbert, Dartmouth College]

The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.



# You can snow a Torbal balance with carborundum, pigment, instant coffee, flour, or any other powder...

## but it will never 'snow' you back.

Sometimes you can't help it. In certain weighing situations no matter how hard you try, a balance gets dirty from spilled or overflowing powders. Or from dust in the air.

When this happens on a conventional knife-edge balance, the knife-edge fulcrum becomes dirty—gets gummed up, and eventually wears. Increased friction, decreased sensitivity and inaccuracy result. (In time even small amounts of dirt in the atmosphere will have this effect.)

On the other hand, with a *Torsion Balance* based on fulcrum which twist instead of roll, this cannot happen. There are no friction pivots or knife-edge fulcrum; thus no metal-to-metal wear, and the weighing mechanism cannot be affected by foreign material. The balance will not become sluggish, it retains its initial accuracy and sensitivity, and because of its virtually

one-piece construction, adjustment is permanent.

Typical of the balances in the broad Torsion line is the high speed dial balance shown above. The Torbal DWL2 is a 120-gram capacity balance with a dial accuracy of 5 mg. It incorporates silicon fluid damping for fast weighing and dials with 9 g x 1 g, and 1 g x 0.01 g graduations, to eliminate use of small loose weights. The smooth metal case with a chemical resistant finish has been designed to resist corrosion and permit cleaning with the wipe of a damp cloth.

The DWL 2 is only one example of the fast balances available with a Torsion mechanism. There is one to fit any of your needs. Torsion balances range from the 160 g capacity analyticals, such as the EA-1, to the 14 kg precision laboratory balances. Write today for literature on TORBAL laboratory balances.

**The Torsion Balance Company**  
Department S

Main Office and Factory: Clifton, N. J.;  
Sales Offices: Birmingham, Ala.; Chicago, Ill.;  
Richardson, Tex.; San Mateo, Cal.; Pittsburgh, Pa.;  
Lynnfield, Mass.; Plants and Offices in  
Montreal, Quebec and London, England

Balances shown: ET-1 top loader,  
EA-1 analytical; DWL-3V

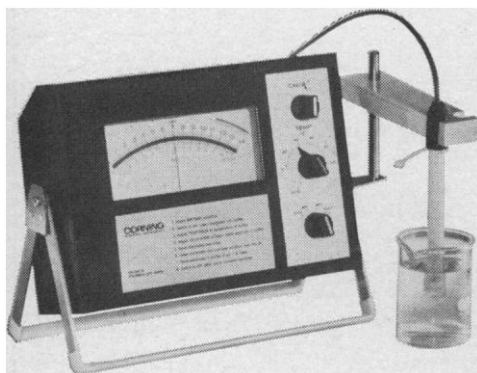


You can  
swear  
by them.



# Benchnotes

the latest news from  
Corning Laboratory Products



## Corning puts a pH meter where you measure

Now you can take a reliable pH meter to the job with our all new Model 6, the first completely portable addition to our line of precision meters. The Model 6 gives you all the features of our benchtop Model 5, plus the convenience of battery operation.

You get solid-state dependability,  $\pm 0.1$  pH accuracy on a  $5\frac{1}{2}$ " scale readable to  $0.05$  pH, repeatability of  $\pm 0.05$  pH, and provision for automatic temperature compensation and recorder output.

The Model 6 meter cradle converts quickly to a handle, and a storage clip on the meter case firmly holds electrodes.

We built a rugged new electrode for the Model 6 that's also available now for the Model 5. It's a combination electrode with a rugged plastic body that cushions impacts to give electrodes longer life.

Now in the lab or in the field, you can count on the precision in pH you get from Corning.

## Think Reasonably Big

Thinking Reasonably Big can be your key to faster dealer service.

When you're ordering any Corning labware product, remember that

shelf-package minimum orders mean better service and faster delivery. Your labware dealer can pull a shelf-package unit from stock and get it moving to you almost as soon as he receives the order. He doesn't have to spend a lot of time opening, counting, and repackaging for shipment.

Whenever practical, Think Reasonably Big and order at least shelf-package quantities. It helps your dealer serve you better.



## Toss out the tools — now demineralizing's simple

Now you can get over 5 gallons per hour of demineralized water with a typical purity of 5,000,000 ohm-cm (Corning, N. Y. well water of 185 ppm total hardness) without tools and without complicated settings.

The new CORNING® Model LD-2 gives you a 30% larger, longer lasting mixed-bed resin cartridge that can be drained in the unit and changed without tools. You also get the benefits of an easy-to-set flowmeter, dependable solid-state monitoring circuitry, a glass platinum electrode, and pilot lights to give constant purity indication. And all these features are handsomely packaged in a chemically resistant cabinet that can be bench or wall mounted.

Demineralizing and cartridge changing no longer have to be complex. Try the simple answer—the CORNING LD-2—in your lab.

Of course, if you need the ultimate purity of glass distilled water, Corning makes a complete line of all-glass water stills to fit every lab need.



## Think Reasonably Small

Sound contradictory? Not when the small is Corning's 7099-S microsampling disposable pipet. The 7099-S gives disposable convenience to a wide range of control and research laboratories where the kind of material sampled makes a reusable pipet impractical. And the cost is less than 5¢ a pipet.

Each 7099-S pipet is color coded for capacity, single line calibrated to  $\pm 1\%$  accuracy, and available in 5, 10, 20, 25, 50, and 100 microliter sizes. Need disposables? Need economy? Think Reasonably Small with the 7099-S microsampling disposable from Corning.

## Welcome aboard

*Benchnotes* will be a regular publication of Corning Laboratory Products to report new products and services to you quickly. Your Corning Labware or Scientific Instruments dealer can fill you in, or you can write us for additional information on any product.

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# CORNING

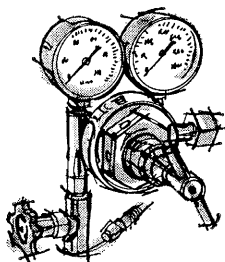
LABORATORY PRODUCTS

Matheson has

# 78 Gas Regulators

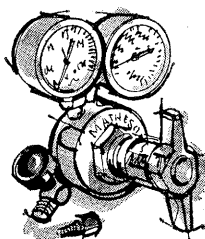
Customized for your specific requirements

## Gas Chromatography



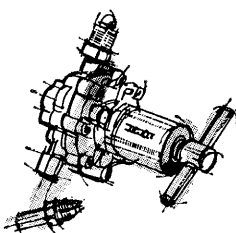
Model 19. This low diffusion, metal diaphragm regulator preserves carrier gas purity permitting sampling from high pressure sources using vacuum flushing techniques. Ideal for precise chromatography work. We also offer Model 19 (special) which is adapted for use with Doping Gases.

## Workhorse



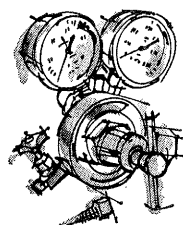
Model 1L. Basic laboratory regulator for accurate, stable delivery pressures of 3-80 p.s.i.g. Provides the most constant delivery pressures we've seen in a single stage regulator. Brass internal parts; fabric reinforced; neoprene rubber diaphragm and seat.

## Ultra Pure



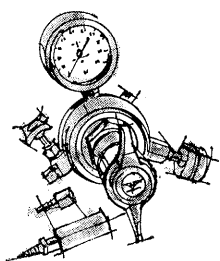
Model 18, Stainless Steel Regulator is designed for the delivery of pure gases where inboard leakage is very critical such as in lamp filling, crystal growing and heat treating. Helium leakage rate is no greater than  $3 \times 10^{-9}$  cc. per second and most have inboard leakage rate of  $8 \times 10^{-10}$  cc. per second. Shipped with certificate showing exact leakage rate. All parts 304 stainless steel except valve stem which is 303 stainless steel with a Teflon seat.

## 2 Stage



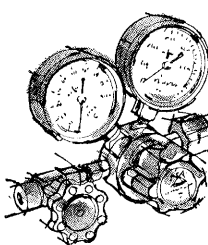
Two regulators combined in one unit. High inlet pressure is reduced automatically to a pre-set intermediate pressure in first stage which feeds gas at relatively stable pressure to second stage. This stage is adjustable for the required delivery pressure. Permits unvarying delivery pressure until cylinder is almost empty. Model 8 has delivery pressure range of 5-50 p.s.i.g. Model 9, 5-250 p.s.i.g.

## Corrosion Resistant



Models 11 through 16. The Matheson Catalog lists 29 regulators designed to handle specific corrosive gases. One group, designed to withstand the effects of gases that attack copper bearing alloys, has an anodized aluminum body, with 316 stainless steel internal parts and resistant plastics for diaphragm and seating surfaces. The other style, for use with acid forming gases, such as halogens, has a chemically coated nickel body with internal parts of Monel, Kel-F and Teflon.

## High Purity



Model 3500. New high purity regulator in the medium price range. All stainless steel. Has cylinder pressure gauge and delivery pressure gauge. Helium leakage rate is certified not to exceed  $8 \times 10^{-10}$  cc. per second inboard and  $2 \times 10^{-8}$  cc. per second outboard.

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Please send Compressed Gas & Equipment Catalog 26.

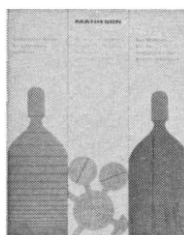
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## Write for Matheson Catalog



In addition to regulators, it lists flowmeters, valves, gas handling equipment and instruments and over 100 compressed gases and gas mixtures. An essential book for any laboratory. Mail coupon for your free copy.

### The Matheson Company

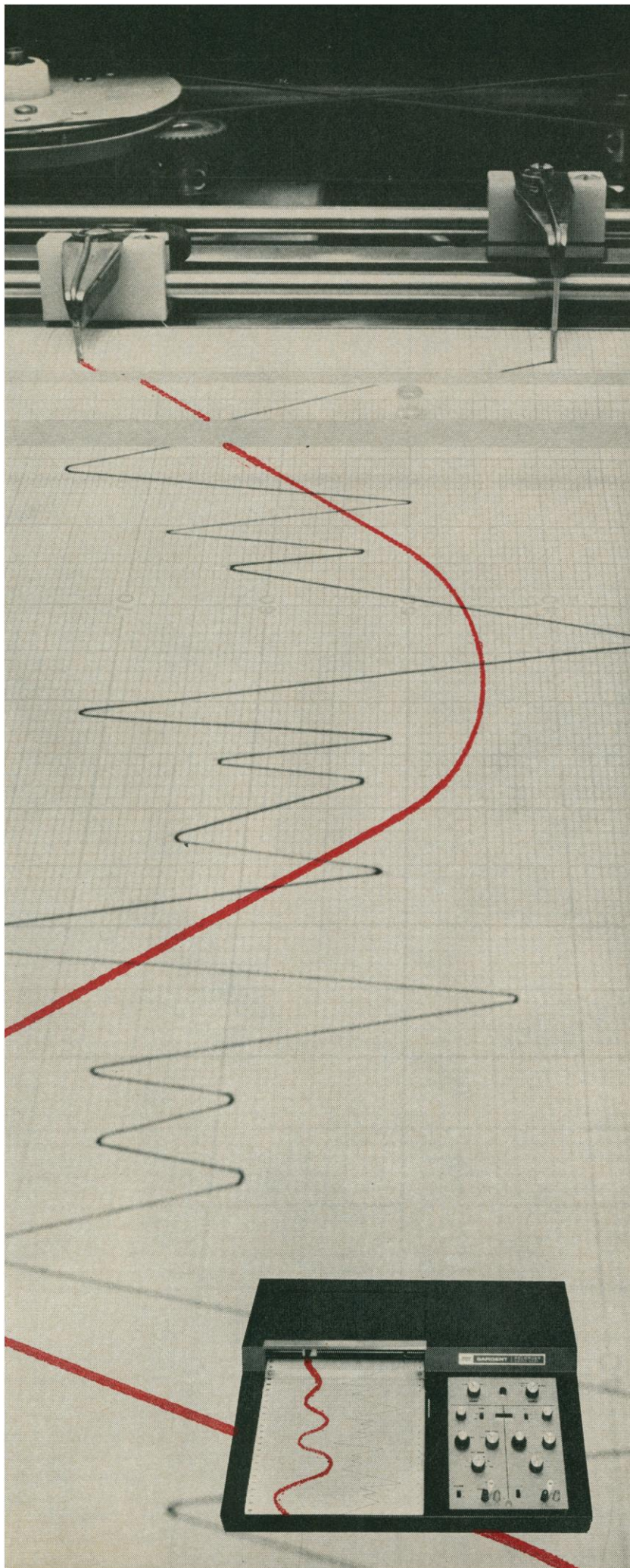
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**$X_1$  and  $X_2$  vs. time.**

**Two pens.**

**Two sets of controls.**

**In a single, sensitive recorder: Sargent's new Model DSRG.**

There's much to be said for recording two independent, time-related variables side-by-side on the same chart. You can more easily compare and contrast both functions. You can conserve precious bench space. And you should save a good deal of chart paper.

But for benefits like these you need a recorder like this: Sargent's new Model DSRG Dual-Pen Recorder.

The DSRG has two pens, two independent recording channels, and two sets of controls. You can operate the channels singly or simultaneously, with related or independent inputs. And select a different span for each channel, for full or half-scale, with or without a marginal integrator for each trace.

So you can record two variables as either two overlapping traces slightly offset in time or as two side-by-side traces coincident in time.

Either way, you'll get a faithful record of both variables—the DSRG's accuracy is  $\pm \frac{1}{4}\%$  (or  $\pm 5$  microvolts, whichever is greater). Reproducibility is  $\pm 0.1\%$ . Add to those figures a full-scale pen response of less than 1.0 second. And circuits are guarded to give a common mode rejection of 140 db (60 Hz) and inputs are filtered for a normal mode rejection of 80 db (60 Hz).

But all of this accuracy and versatility isn't worth much unless it's conveniently packaged. That's why we built the DSRG with three chart speeds, provision for remote switching of chart drive, and seven calibrated spans for each channel, with expansion to  $2\frac{1}{2} \times$  to provide continuous selection from 0.4 to 100 mv. The new Sargent capillary pens are easy to use, too—they're filled by a disposable plastic cartridge.

Two more things to know about the DSRG. It may act like two recorders, but it's only an inch or two larger than our single-pen models. And it's designed and manufactured by E. H. Sargent & Co.—which is another way to say reliability.

Price? With pens, paper, and connecting cables, the DSRG Dual-Pen Recorder costs \$1575.00. With one integrator installed, \$2160.00. (Dual integrators are available—ask for details.)

Please call your Sargent man or write directly to us.

7-251

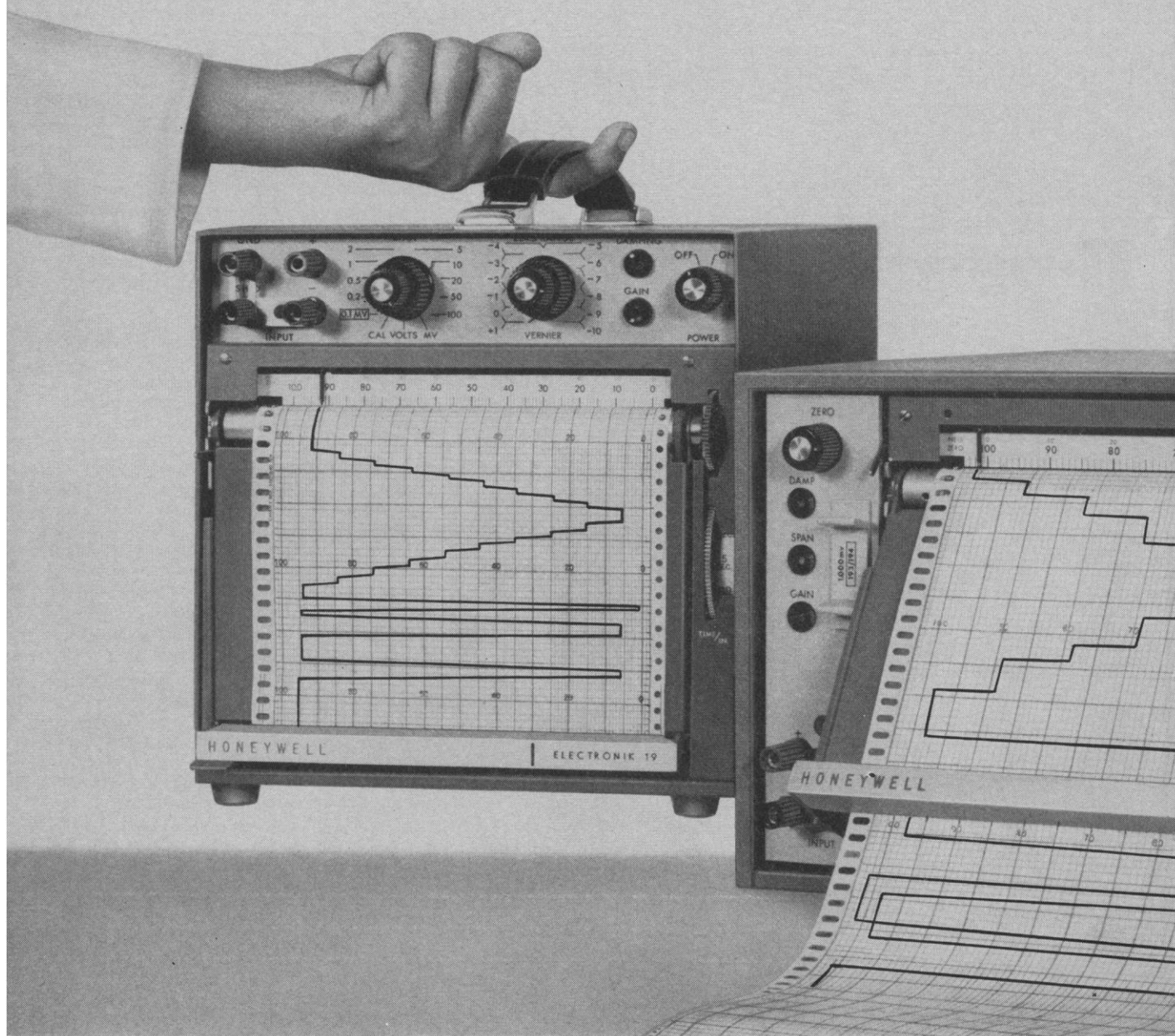
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Nearly everybody takes  
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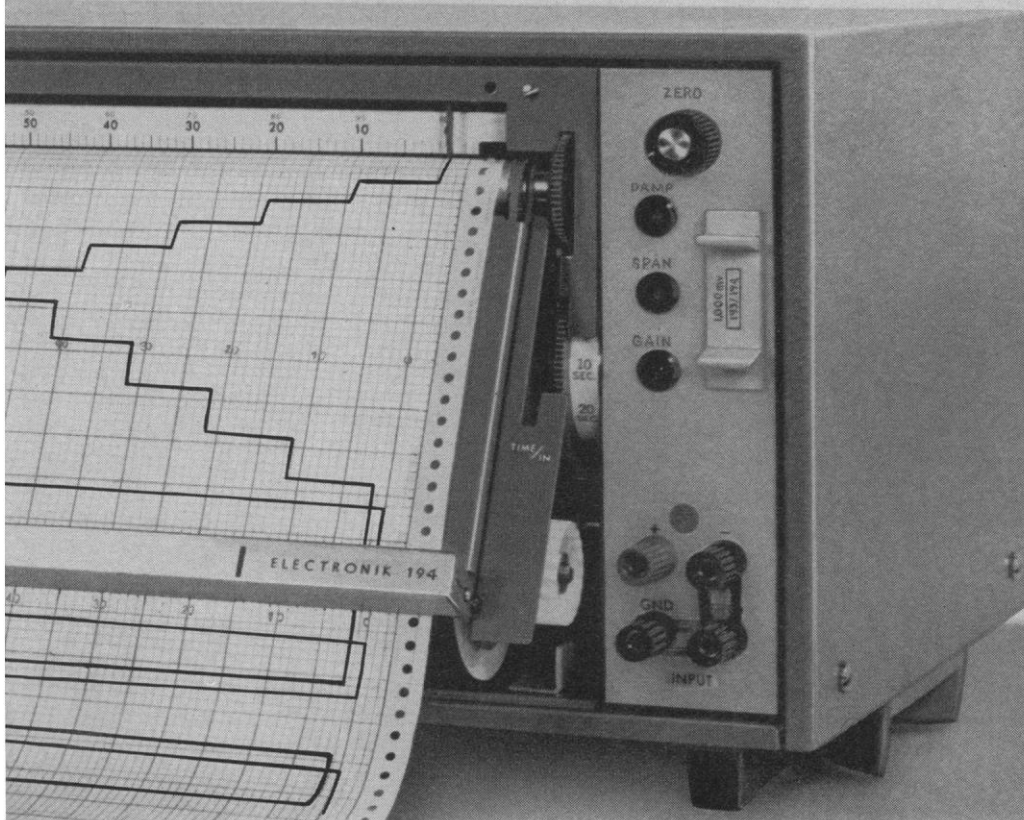
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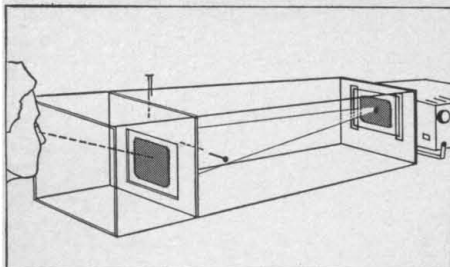
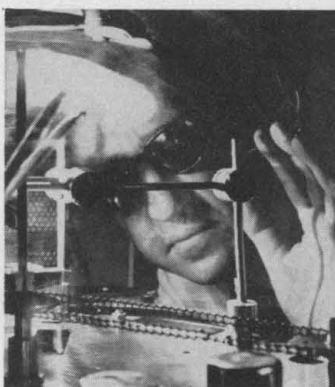
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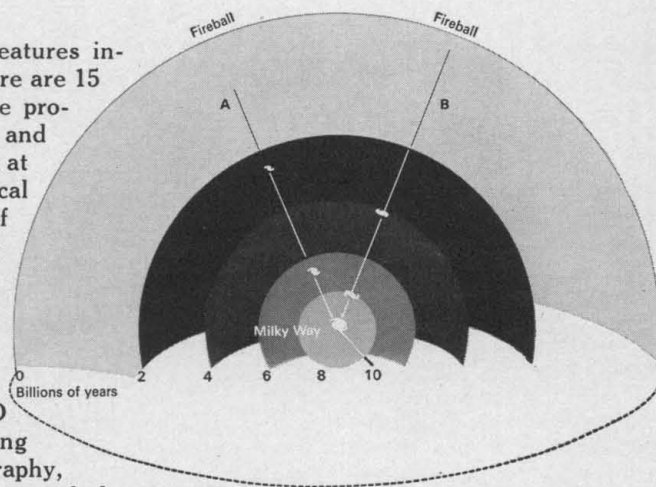
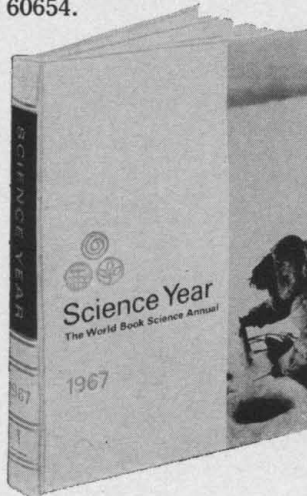


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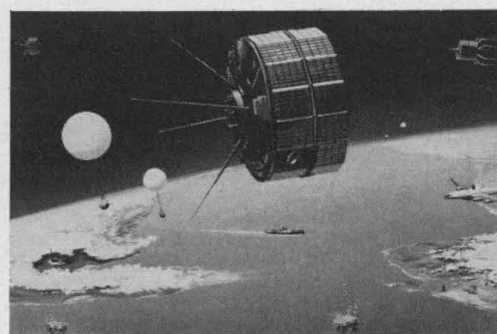
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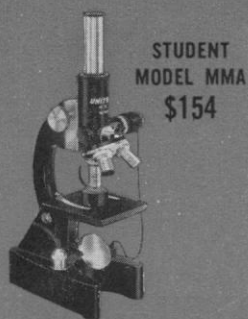


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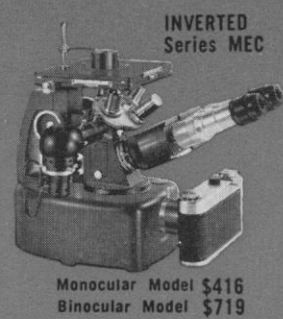
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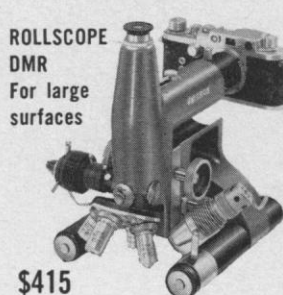
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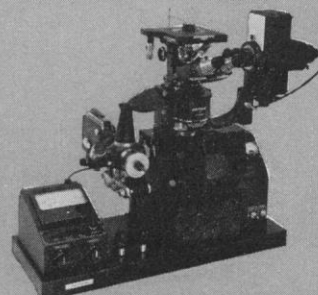


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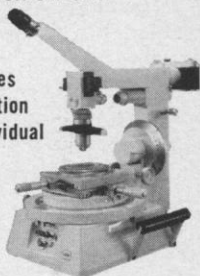
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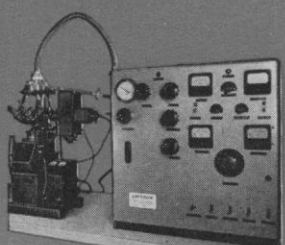


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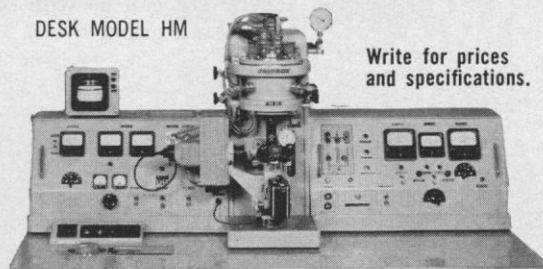
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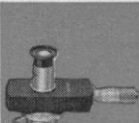
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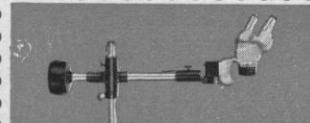
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*Proceedings of an International Symposium on the Pharmacology of Hormonal Polypeptides, held in Milan, Italy, September 14-16, 1967*

edited by **Nathan Back**, *Department of Biochemical Pharmacology, School of Pharmacy State University of New York, Buffalo, New York*, **Luigi Martini and Rodolfo Paoletti**, *Institute of Pharmacology, University of Milan, Milan, Italy*

This volume contains the results of significant studies concerning peptide and protein chemistry, new hormonal peptides, peptides affecting lipid metabolism, and posterior and anterior pituitary hormones. Also included are important papers on the topics of hypothalamic neurohumoral principles, insulin and glucagon, and growth hormone, placental lactogen, parathormone and thyrocalcitonin.

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## the molecular structure of amino acids

by **G. V. Gurskaya**, *Institute of Crystallography, Academy of Sciences of the USSR*  
translated from Russian by **J. E. S. Bradley**

This book gives a survey of all the data published through 1965 on the crystal structures of the principal amino-acids and their simple derivatives. It also includes some important items of unpublished work, and is profusely illustrated, with an average of nearly two figures and two tables per structure. Some discrepancies in the literature are pointed out. Methods of crystal preparation are described, and brief notes on the history of the discovery and examination of each compound are included. Extensive tables at the end serve as a guide to further reading.

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## reproduction in the female mammal

*Proceedings of the Thirteenth Eastern School in Agricultural Science, University of Nottingham, 1966*

edited by **B. E. Lamming**, *Professor of Agriculture, University of Nottingham*  
and **E. C. Amoroso**, *Professor of Physiology, Royal Veterinary College, University of London*

Considers the basic processes of reproduction, beginning with the neurohumoral control of hypophyseal function and proceeding via the hypophysis and the gonads to study those reactions of the uterus which influence the activity of spermatozoa, fertilized and unfertilized ova, the early development of the embryo and the sequence of processes leading to implantation. In view of the wide current interest in the interrelationships between the hypophysis, the corpus luteum and the uterus, a special session was organized to consider these aspects.

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## progress in mathematics

edited by **R. V. Gamkrelidze**

*Institute of Scientific Information, Academy of Sciences of the USSR*

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This first volume of the series presents three review articles on mathematical analysis. *Operational Calculus* and *Spaces of Analytic Functions* both offer new data to the mathematics of analytic function spaces, and solutions of concrete analytic problems using functional analysis. *Operational Differential Equations* discusses the recently developed theory of differential equations in linear spaces.

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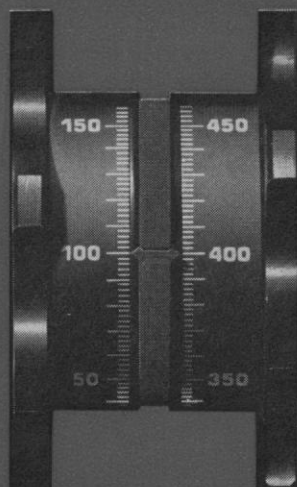
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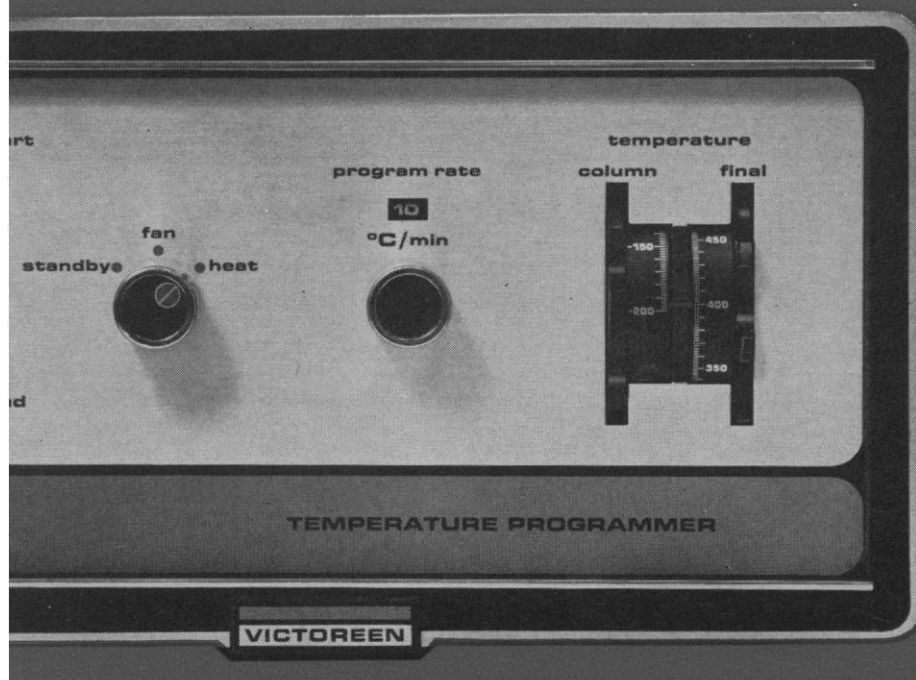
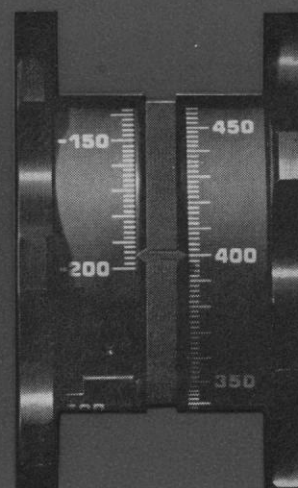


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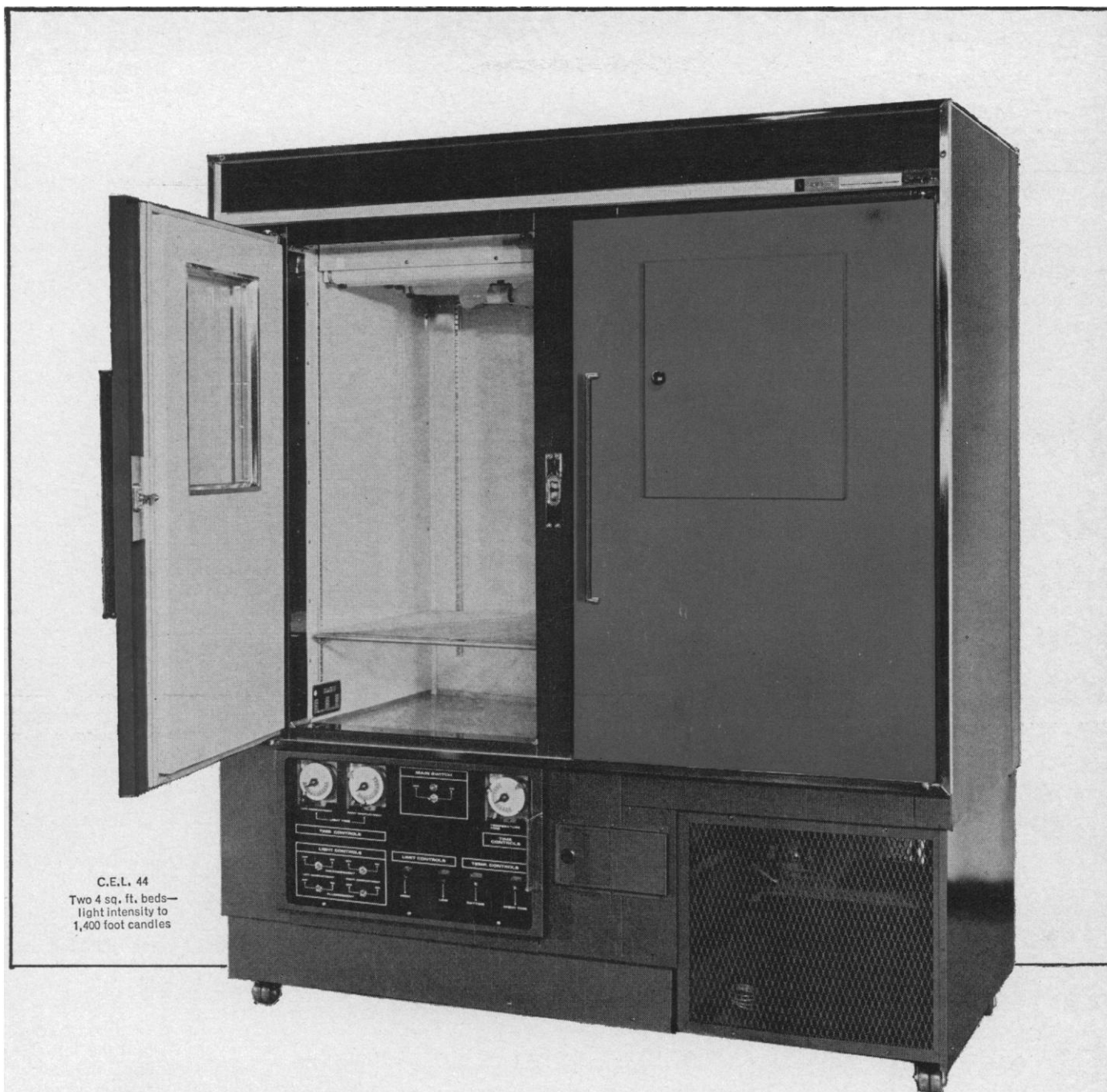
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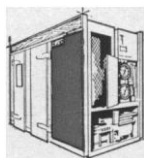




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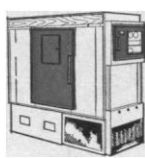
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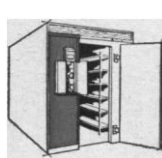
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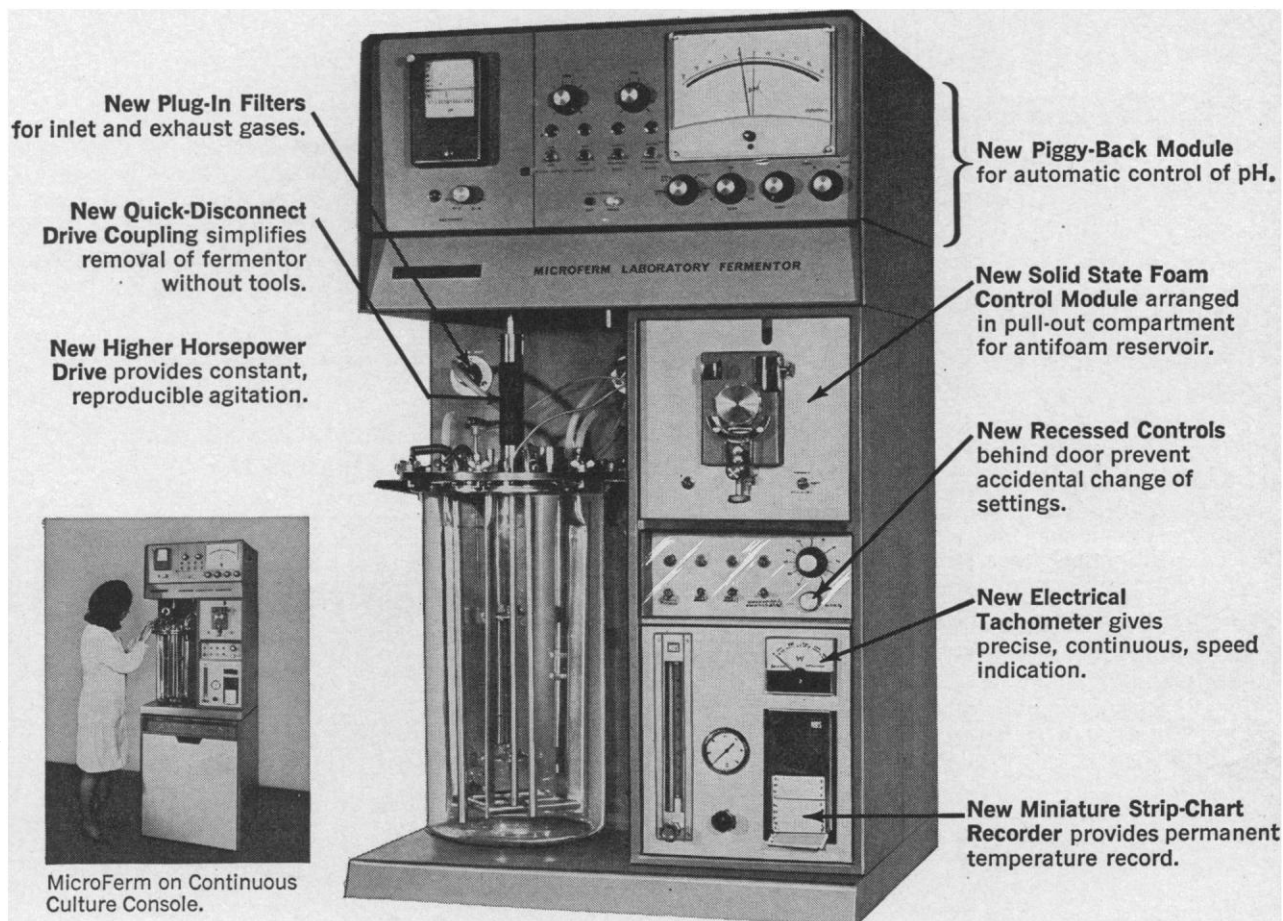
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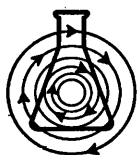
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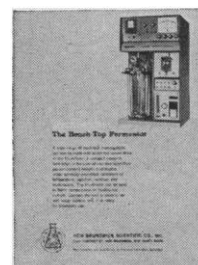
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Editor: Robert H. Shaw. AAAS Publication No. 86, 408 pages, 144 illustrations, bibliography, index, November, 1967. Retail price, \$12.50; AAAS Members' Cash Orders, \$10.50.

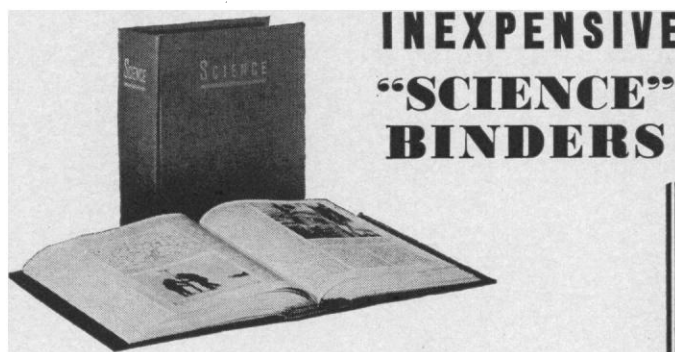
*Ground Level Climatology* consists of 20 papers dealing generally with the theme of weather and agriculture (including forestry) and specifically with the climate closely surrounding plants and animals—the microclimate. Investigators in the field of ground level climatology seek to understand the complex relationships between living organisms and their environment; the relation of climate to the distribution and abundance of plants and animals; the effects of weather modification on physical processes within the microclimate; and the effects of moisture, temperature, and energy balance on physiological functions.

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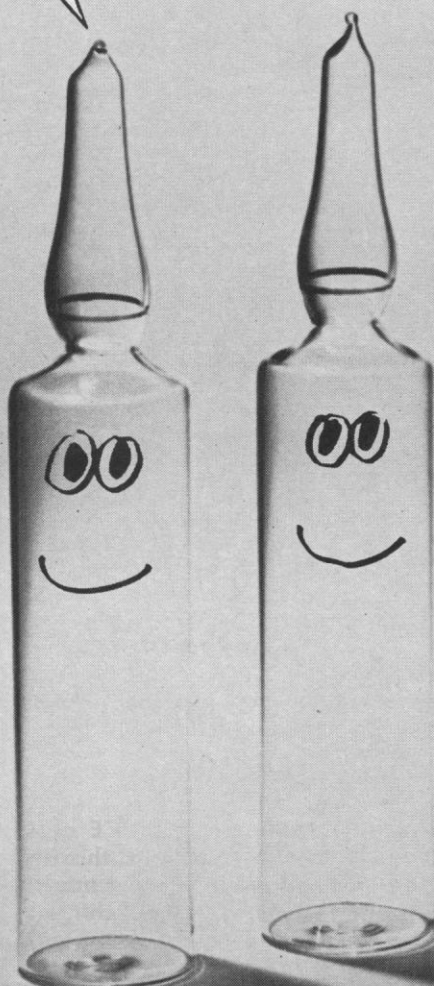
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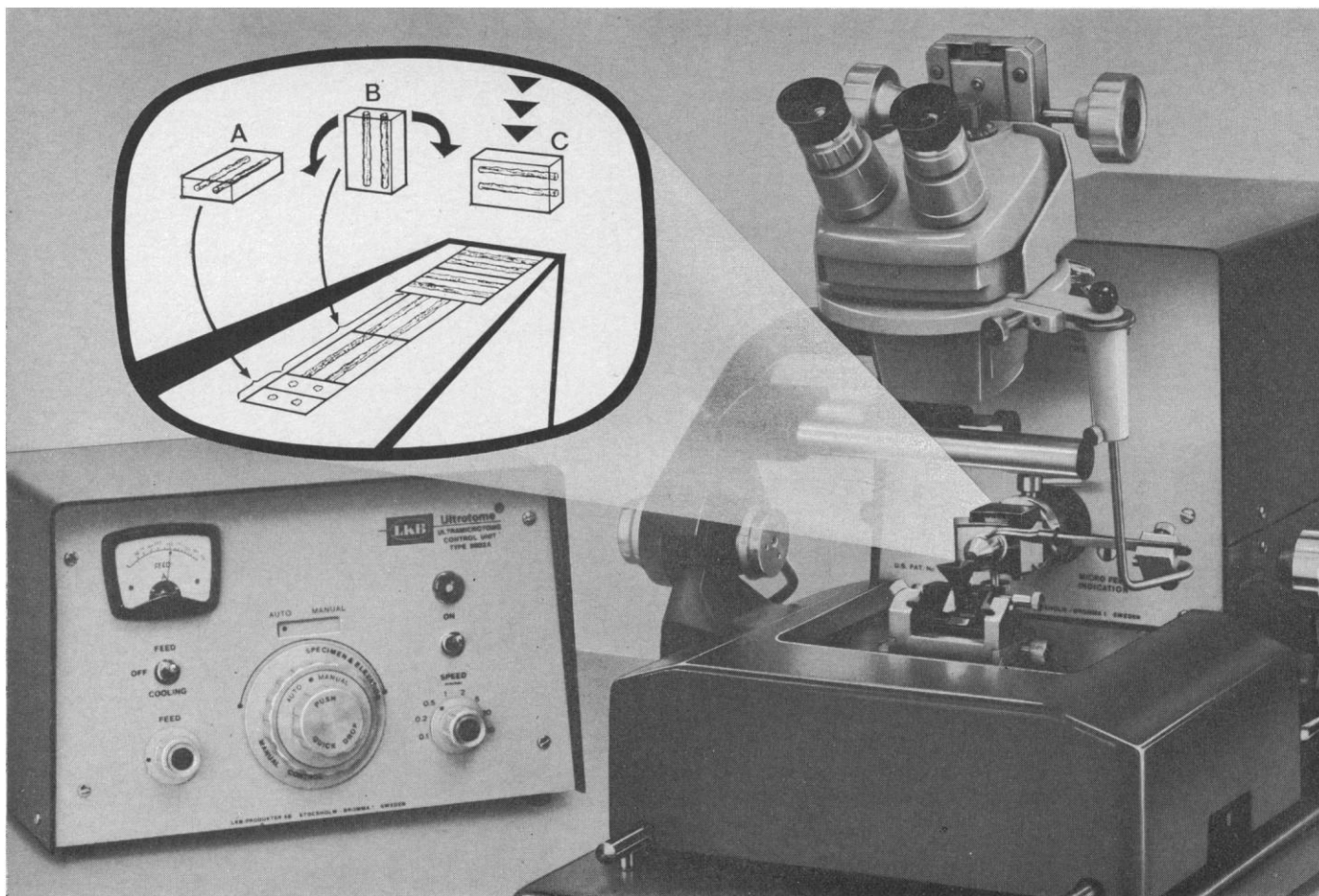
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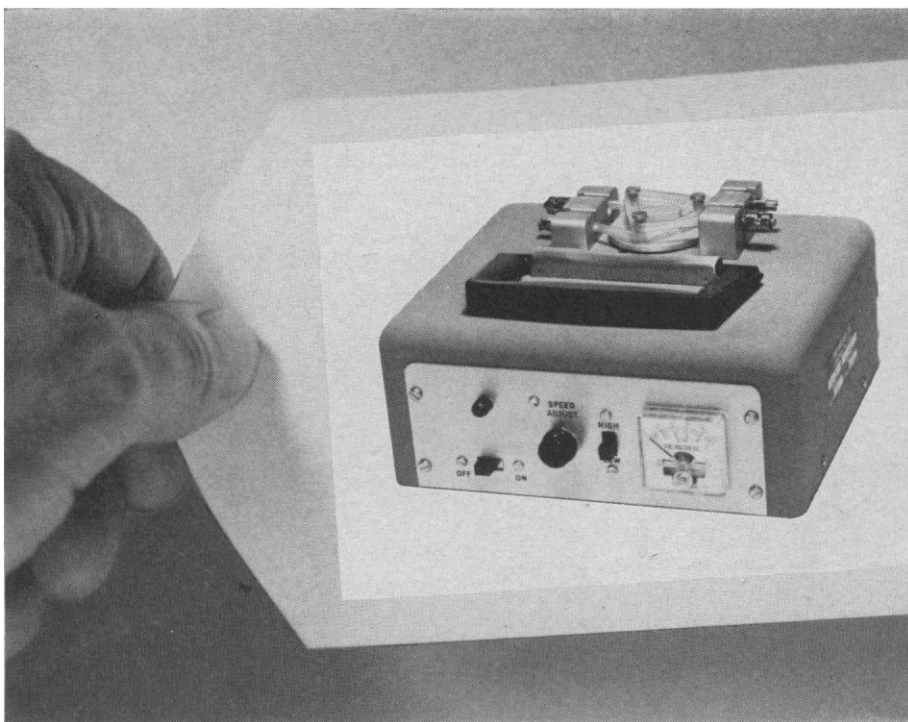
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levels that have been reported have never, to the best of our knowledge, been so high as to warrant alarm in terms such as "catastrophe" and "lethal levels." Nevertheless, the public must be protected against unusual prolonged periods of air stagnation and against local pockets of high concentrations of carbon monoxide that might occur during such periods in areas of traffic congestion.

The estimated 50-percent reduction of carbon monoxide emissions that will be brought about by compliance with the 1968 federal requirements should bring the prevailing atmosphere in New York City well below the New York State standard as new cars replace the older cars now on the streets. In extremely congested areas, somewhat higher levels may persist and public officials must evaluate what hazards, if any, may be associated with them so that appropriate control measures can be taken.

In summary, the trend of carbon monoxide concentrations in the prevailing atmosphere, and even in local congested areas, in large cities like New York is expected to be definitely downward despite any reasonable projected increase in national car population.

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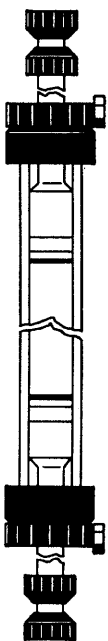
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#### Cold North Winds

I hope the Eskimologists don't elaborate too many animated hypotheses of Eskimo social, intellectual, and esthetic beliefs on the basis of the mask purporting to be "half man, half animal" (*Science*, cover right, 29 Dec.). The mask shows a classic Bell's palsy (facial nerve paralysis) on the right, with full voluntary contraction of the facial muscles achieved on the left. Old wives

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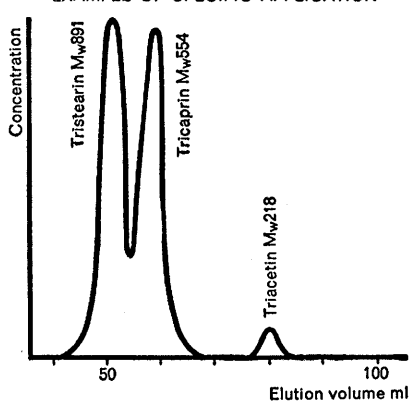
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n-butanol	1.8	3
Dioxane	1.4	2.5-3.0
Tetrahydrofuran	1.4	2.5-3.0
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\*Containing 1% ethanol. Particle size: 25-100  $\mu$ .

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tell that the *à frigore* variety of Bell's palsy results from cold wind blowing on the cheek, sitting at an open window, and the like. Perhaps the Eskimologists will, with further study, be able to tell us if the subject for this mask lived in a drafty igloo.

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### The Naivet   of Science

In "Environmental pollution: Scientists go to court" (22 Dec., p. 1552), Carter cites the enthusiasm of Yannacone for the testimony given by scientists: "Those guys are virgin witnesses" he says." Carter then summarizes testimony given by Wurster, including the statement: "In New Hanover [presumably he means Hanover] 70 percent or more of the robins died, whereas in Norwich the population of robins actually increased, Wurster said."

The detailed report by Wurster *et al.* [*Ecology* 46, 488 (1965)] states:

Since the study areas represent 2¼ % of the sprayed part of town, and the May 1 resident population on these areas averaged 12 Robins, the total Hanover Robin population was approximately 500 to 550. Based on a 70% decline in the study areas by June 1, total Robin mortality in Hanover was about 350 to 400 birds.

The virginity extolled by Yannacone as an attribute of scientists would be helpful to those who wish to accept the extrapolation, made by Wurster, based on a sample of 12 robins. Worldly readers, however, might wonder if some of the Hanover robins had flown across the Connecticut River to Norwich, 2 miles away.

Robins fortunately are well equipped to fight off the extinction that has been meted out to them by the pens of conservationists. Roger Tory Peterson [*The Birds* (Time Inc., New York, 1963), p. 85] states:

What is North America's number one bird? Is it the house sparrow, introduced from England? Almost certainly not; the starling, less restricted to cities and farms, now outnumbers it. The American robin, however, is a more likely candidate than either. Found from coast to coast, it inhabits cities and forests alike and is one of the most abundant birds in the vast, 3,000-mile belt of conifers stretching across Canada to Alaska.

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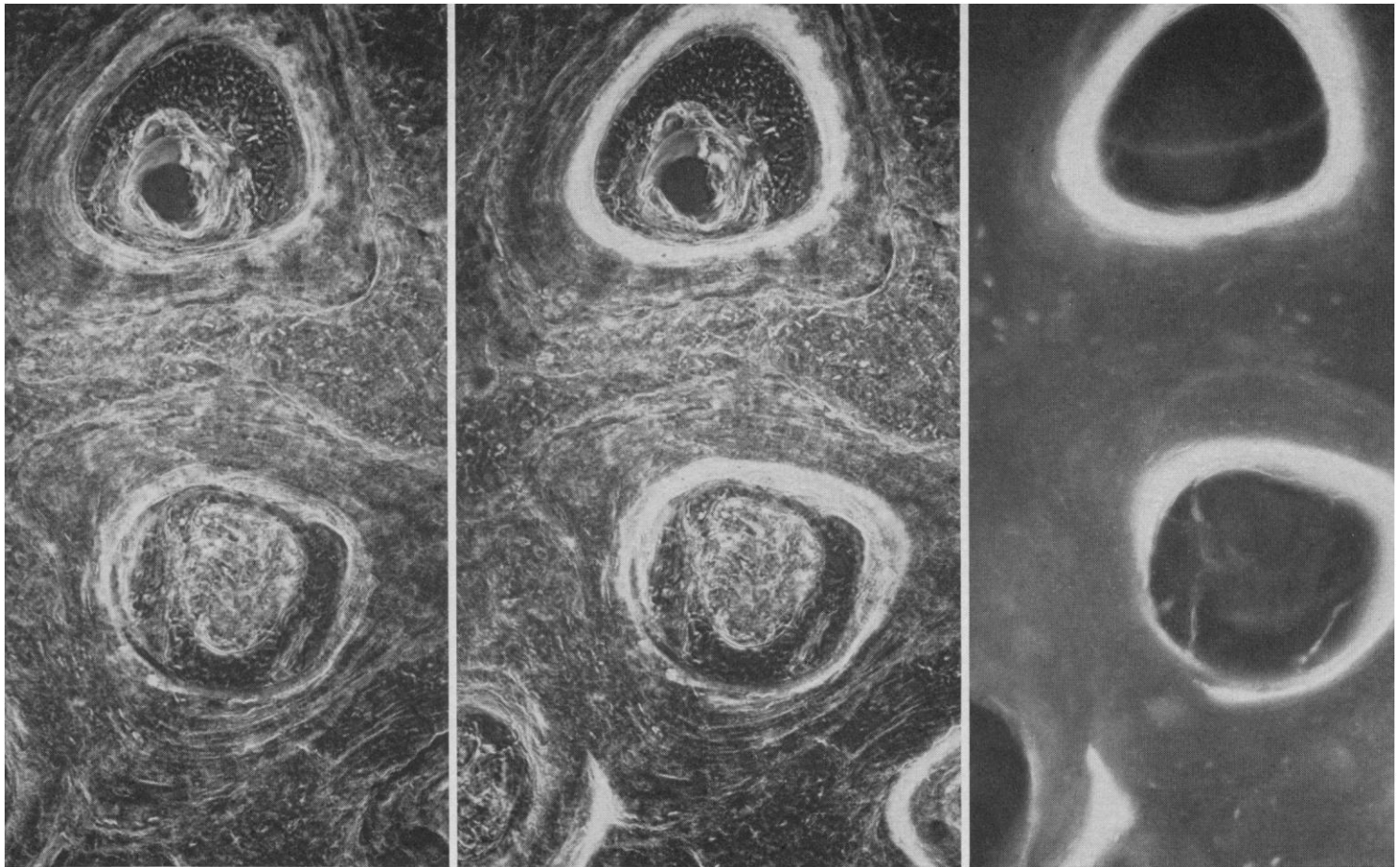
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## After New York—What Next?

A substantial part of this week's issue of *Science* deals with "fallouts" from the 1967 AAAS Annual Meeting in New York. This editorial discusses the future. It has just been announced that the next meeting of the Association in Dallas, Texas, will have as its general chairman the Honorable J. Erik Jonsson, mayor of Dallas and former president of Texas Instruments, Inc.

Three features mark the AAAS and its Meeting: a long past, a broad concern with all aspects of science and technology, and a complex organization. This can lead to stodginess, excessive specialization, and confusion. It can also provide a sense of history, wide-ranging interests, and an opportunity for creative action. For many years the AAAS Meeting, like its British counterpart but for different reasons, has been buffeted by suggestions, criticism, and advice. The most thoughtful response to them was the Arden House Statement of 1951, which warned against too much involvement with the more detailed and more isolated technical aspects of science and suggested that the Meetings "... act, in all ways that promise useful results, as a synthesizing and unifying influence. . . ."

Are we now moving in the right direction, and are we moving quickly enough? The Committee on Meetings,\* which has general responsibility over the Annual Meetings of the Association, is concerning itself with these questions. It will look at the innovations of the New York Meeting—the extensive involvement with Educational Television, the rejuvenated Science Film Theater, the Faraday Centennial celebration, the numerous tours and open houses. It will judge the increased involvement in discussion of matters of public concern. It will, at some stage, come to grips with the problems of advanced planning, selection of topics for intensive discussion, and ordering of responsibilities among the many persons and organizations who contribute to the Meeting content. These are difficult assessments. They will be made easier if friends and critics of the AAAS Meeting will submit their individual ideas and suggestions.

Constantinos Doxiadis, speaking of the obligations of city planners, pointed out that their task is not well done unless attention is paid to all of man's senses and account is taken of all the differing human interests. So it is with good scientific meetings. Variety, appeal to many levels of sophistication and concern, discussion of exciting discoveries by the experts, reviews of prospering fields for the interested public, lively confrontations, looking beyond narrow geographical and mental borders, listening to critics, celebrating significant events, having time for quiet contemplation—these are the important intellectual ingredients. Judging the right proportions, maintaining high standards, raising the needed funds, and engaging the most effective tools of communication—these are the essential editorial functions. Joined together, they will promote the objectives of the AAAS: To further the work of scientists, to facilitate cooperation among them, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the method of science in human progress.—WALTER G. BERL, *Editor, Annual Meeting*

\*Members of the committee are N. C. Brady, Cornell; R. E. Gibson, Applied Physics Laboratory, Johns Hopkins; P. M. Hauser, Chicago; R. B. Livingston, California; D. J. deS. Price, Yale; W. Sullivan, New York Times; A. Spilhaus, Franklin Institute; F. Whitmore, Jr., Geological Survey; W. G. Berl, AAAS; and D. Wolfe, AAAS.

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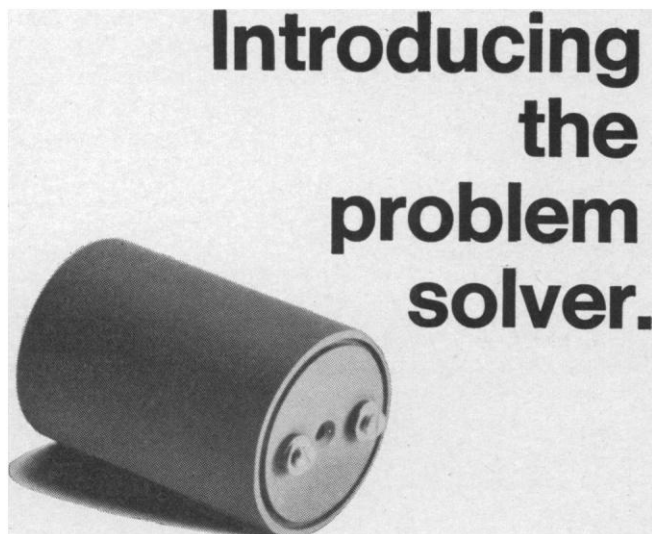
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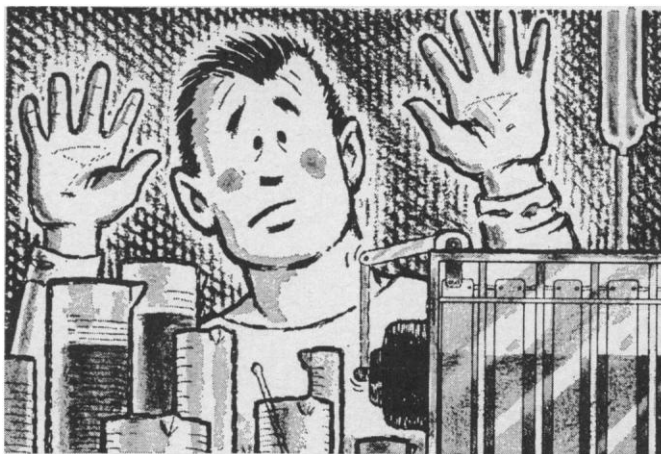


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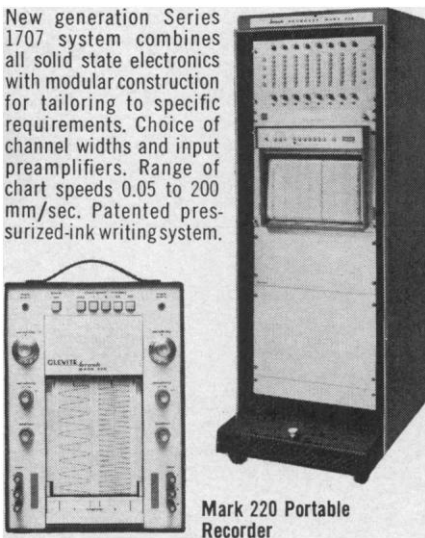
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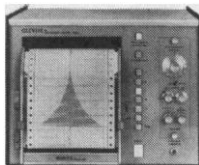


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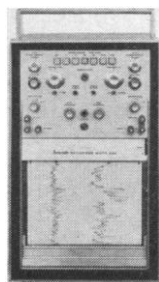
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highest standards, and the best available domestic and foreign films. These needs were met—and several thousand guests attended the seven half-day sessions.

The 100th anniversary of the death of *Michael Faraday* was commemorated in several ways. To a symposium on Michael Faraday—Natural Philosopher was added a demonstration lecture by Ronald King of the Royal Institution, London, who held his audience spell-bound with a brilliant performance, in spite of the difficulties of performing a large number of experiments in an unfamiliar lecture hall. Supplementing this was an exhibit at the Abbey Rockefeller Hall of Rockefeller University. Much unusual material about Faraday was presented for the enjoyment of AAAS members, high school students attending the Rockefeller Christmas Lectures, and the citizens of New York.

Finally, museums and other establishments in New York opened their doors or contributed their help. The Sierra Club, with an exhibit of Ansel Adams' photographs in the Hilton Hotel; The John Pierpont Morgan Library exhibiting some of its scientific treasures (including a letter from Thoreau giving his reasons for not wishing to become a member of the AAAS); the IBM Gallery with an exhibit of Leonardo da Vinci models; the New York Public Library with an exhibit of suspension bridges; the Historical Society of New York with a display of its collection of the paintings of J. J. Audubon; the Ford Foundation with an invitation to visit its new headquarters building; the Museum of Modern Art with a special offer to visit its exhibit of statues by Picasso; and the American Geographical Society inviting AAAS registrants to be their guests at the Explorers' Club.

This, then, is a brief synopsis of a large and complex meeting. The unflagging support and enthusiasm of its general chairman, D. W. Bronk, was visible everywhere. Yet, despite much that was pleasing, useful, constructive, and new, there are problems of objectives, of size, of content, and of style that have not been solved as yet. How to steer a safe course between being too small and specialized (and, thereby, competing with the myriads of technical meetings held every day all over the world) or too large and fragmented (thereby offering insufficient sustenance to the professionals and too much complexity for everyone else)? What limits can one wisely set on size? What audiences are to be served? Can one find

a harmony in tune with immediate and future needs? These difficult questions of objectives and priorities are being raised by the most thoughtful friends and critics of AAAS Meetings.

## Calendar of Events

### National Meetings

#### February

25. **Psychoanalysis**, 6th annual scientific conf., New York, N.Y. (A. Blatt, Chairman Program Committee, 7 W. 96 St., New York 10025)

25–29. **American Inst. of Mining, Metallurgical, and Petroleum Engineers**, 97th annual mtg., New York, N.Y. (C. Hopkins, 345 E. 47 St., New York 10017)

26–28. **American Physical Soc.**, Boston, Mass. (W. W. Havens, Jr., Columbia Univ., New York 10027)

26–28. **Association of Asphalt Paving Technologists**, Atlanta, Ga. (L. L. Kole, Box 619, Ann Arbor, Mich. 48107)

26–28. **Association of Iron and Steel Engineers**, Western mtg., San Francisco, Calif. (T. J. Ess, 1010 Empire Bldg., Pittsburgh, Pa. 15222)

26–1. **American Assoc. of Junior Colleges**, 48th annual conv., Boston, Mass. (The Association, 1315 16th St., NW, Washington, D.C. 20036)

27. **National Multiple Sclerosis Soc.**, New York, N.Y. (S. Lawry, Executive Director, 257 Park Ave., South, New York 10010)

27–28. **National Dairy Engineering Conf.**, 16th annual, East Lansing, Mich. (D. R. Heldman, Dept. of Agricultural Engineering, Michigan State Univ., East Lansing 48823)

27–3. **Scintillation and Semiconductor Counter**, 11th symp., Washington, D.C. (R. M. Emberson, 345 E. 47 St., New York 10017)

28. **Commission on Engineering Education**, 5th annual mtg., Washington, D.C. (Commission on Engineering Education, 1501 New Hampshire Ave., NW, Washington, D.C. 20036)

28–3. **American College of Cardiology**, annual mtg., San Francisco, Calif. (W. D. Nelligan, 9650 Rockville Pike, Bethesda, Md. 20014)

28–3. **Biology Teachers**, Anaheim, Calif. (J. P. Lightner, Secretary, 1420 N St., NW, Washington, D.C.)

29–2. **Cystic Fibrosis and Related Human and Animal Diseases**, symp., New York, N.Y. (National Cystic Fibrosis Research Foundation, 202 E. 44 St., New York 10017)

#### March

4–6. **Society of Toxicology**, Washington, D.C. (C. S. Weil, Mellon Inst., 4400 Fifth Ave., Pittsburgh, Pa. 15213)

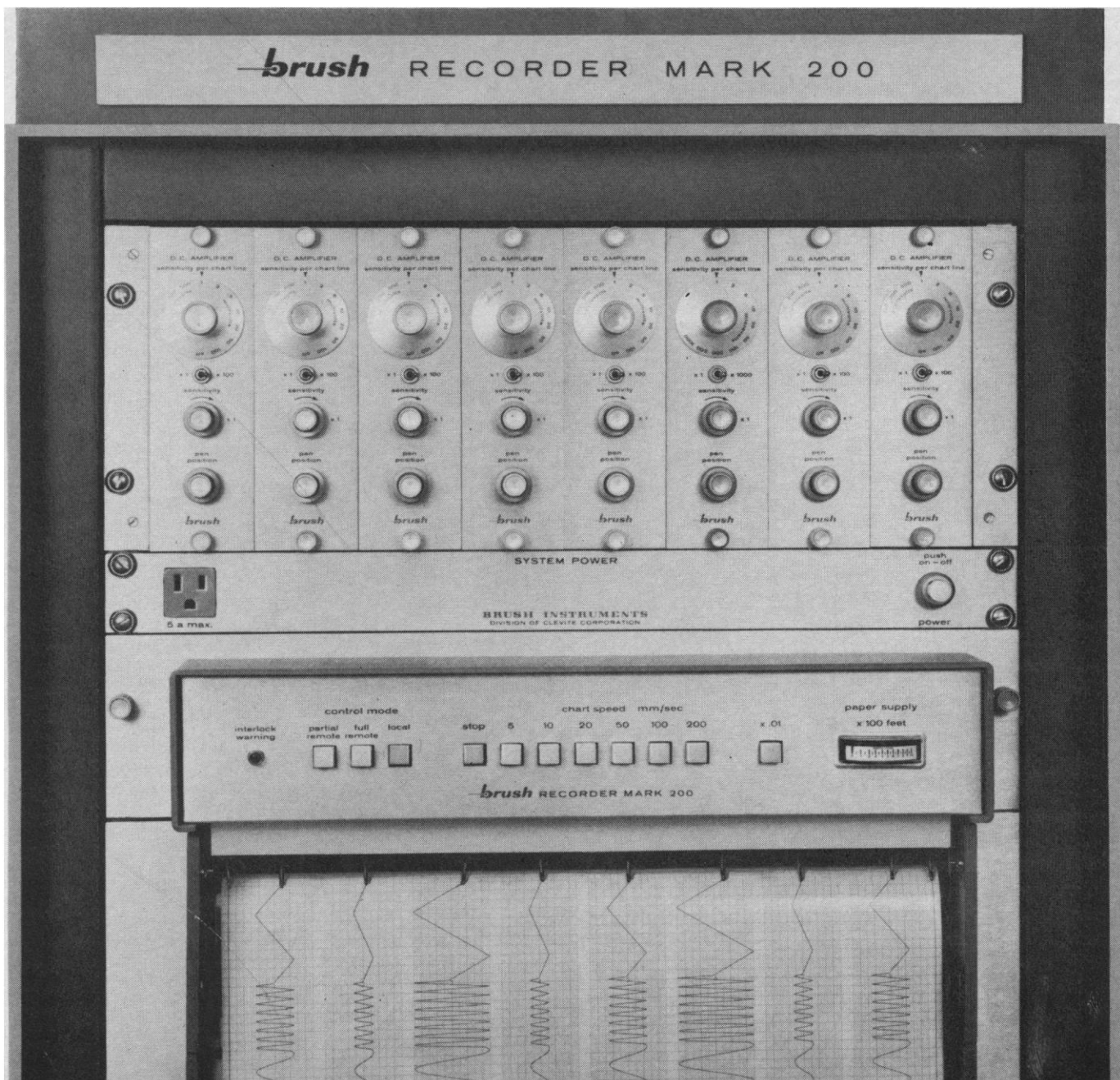
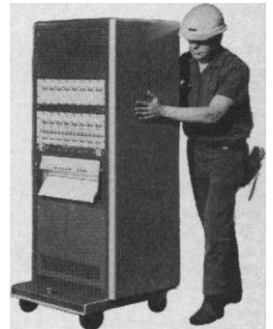
4–6. **Technology for Manned Planetary Missions**, New Orleans, La. (Meetings Manager, 1290 Sixth Ave., New York 10019)

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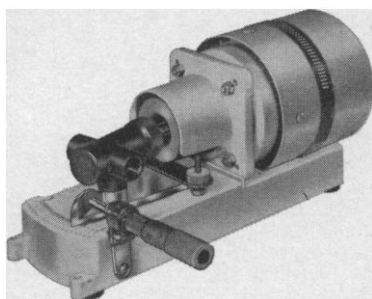
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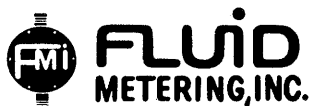
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4-7. **Neutron Cross Section and Technology Conf.**, Washington, D.C. (D. T. Goldman, Natl. Bureau of Standards, Washington, D.C. 20234)

4-8. **Analytical Chemistry and Applied Spectroscopy**, Cleveland, Pa. (R. T. Oliver, Alcoa Research Labs., New Kensington, Pa.)

5-7. **Aviation-Electronics and Its Supporting Sciences**, Fort Monmouth, N.J. (Commanding General, U.S. Army Electronics Command, Attention AMSEL-RD-LN, Fort Monmouth 07703)

6-8. **Fundamental Cancer Research**, 22nd annual symp., Houston, Tex. (F. Goff, Special Projects, M. D. Anderson Hospital and Tumor Inst., Univ. of Texas, Houston 77025)

7-8. **The Doctor and His Hospital**, Inst. of Medicine of Chicago workshop, Chicago, Ill. (R. M. Potter, Secretary, Inst. of Medicine of Chicago, 332 S. Michigan Avenue, Chicago 60604)

7-8. **Society of Vacuum Coaters**, 11th annual, Miami Beach, Fla. (The Society, P.O. Box 3095, Cleveland, Ohio)

7-9. **Cerebellum in Health and Disease**, Dallas, Tex. (S. P. Cole, Coordinator, Univ. of Texas Southwestern Medical School at Dallas, 5323 Harry Hines Blvd., Dallas 75235)

7-9. **Southern Soc. of Anesthesiologists**, Dallas, Tex. (R. G. Zepernick, Mercy Hospital, New Orleans, La. 70119)

8-10. **Colorado Medical Soc.**, Denver. (D. G. Derry, Colorado Medical Soc., 1809 E. 18 Ave., Denver 80218)

8-10. **National Wildlife Federation**, 32nd annual, Houston, Tex. (The Federation, 1412 16th St., NW, Washington, D.C. 20036)

9-10. **American Psychiatric Assoc. Colloquium on Postgraduate Teaching of Psychiatry**, New Orleans, La. (M. L. Enelow, 3439 Prytania St., New Orleans 70115)

10-12. **American Soc. for Abrasive Methods**, Philadelphia, Pa. (R. J. Mayer, ASAM, 330 S. Wells St., Chicago, Ill. 60606)

10-14. **Gas Turbine Conf.**, Washington, D.C. (A. B. Conlin, Jr., Meetings Manager, 345 E. 47 St., New York 10017)

10-15. **American Soc. of Photogrammetry/American Congr. on Surveying and Mapping**, annual mtg., Washington, D.C. (W. B. Overstreet, 1819 Franwall Avenue, Silver Spring, Md. 20902)

11-13. **American College of Surgeons**, sectional mtg. for **Doctors and Nurses**, Williamsburg, Va. (Communications Department, 55 E. Erie St., Chicago, Ill. 60611)

11-13. **New Tools for Planning and Research Programming**, Commercial Chemical Development Assoc., Inc. annual mtg., New York, N.Y. (R. L. Chilenskas, Manager of Commercial Development, M & T Chemicals Inc., New York, N.Y.)

11-14. **Canaveral Council of Technical Societies**, 5th space congr., Cocoa Beach, Fla. (E. P. Wynne, General Electric Co., Apollo Support Dept., P.O. Box 7011, Cape Canaveral, Fla. 32920)

11-14. **Western Metal and Tool Conf. and Exposition**, Los Angeles, Calif. (J. A. Fellows, Director of Technical Programming, Metals Park, Ohio)

12-14. **Fire Weather Conf.**, Salt Lake City, Utah. (K. C. Spengler, 45 Beacon St., Boston, Mass. 02108)

13-15. **Instrumentation for the Iron and Steel Industry**, 18th natl. conf., Pittsburgh, Pa. (T. Schuerger, U.S. Steel Corp., Research Lab., Monroeville, Pa. 15146)

13-16. **Optical Soc. of America**, spring mtg., Washington, D.C. (M. W. Wurga, Executive Secretary, 1155 16th St., NW, Washington, D.C. 20036)

14-15. **Forum on Geology of Industrial Minerals**, 4th annual, Austin, Tex. (W. L. Fisher, Bureau of Economic Geology, Univ. of Texas, Austin 78712)

14-16. **Arizona Acad. of General Practice**, Tucson. (P. R. Boykin, Executive Secretary, P.O. Box 441, Scottsdale, Ariz. 85252)

14-16. **Biomathematics and Computer Science in the Life Sciences**, 6th annual, Houston, Tex. (Office of the Dean, Univ. of Texas Graduate School of Biomedical Sciences at Houston, Division of Continuing Education, P.O. Box 20367, Houston 77025)

14-20. **Marquette Univ. Medical Alumni Assoc.**, clinical conf., Palm Springs, Calif. (R. H. Herzog, Executive Secretary, The Association, 561 N. 15 St., Milwaukee, Wis. 53233)

15-16. **State Mental Health Representatives**, 14th annual, Chicago, Ill. (W. Wolman, Dept. of Mental Health, 535 N. Dearborn St., Chicago 60610)

18-20. **Lubrication and Lubricant Rheology**, symp., Ann Arbor, Mich. (W. O. Winer, Dept. of Mechanical Engineering, 225 West Engineering Bldg., Univ. of Michigan, Ann Arbor 48104)

18-20. **American Acad. of Pediatrics**, spring session, Atlanta, Ga. (G. E. Hughes, Secretary for Meetings, 1801 Hinman Ave., Evanston, Ill. 60204)

18-21. **American Physical Soc.**, Berkeley, Calif. (W. Whaling, California Institute of Technology, Pasadena 91109)

18-21. **American Radium Soc.**, annual mtg., Miami Beach, Fla. (J. L. Pool, Executive Secretary, Memorial Hospital, 444 E. 68 St., New York, N.Y.)

18-22. **National Assoc. of Corrosion Engineers**, 24th annual conf. and show, Cleveland, Ohio. (T. J. Hull, 980 M & M Building, Houston, Tex. 77002)

19-20. **Equipment Manuals Symp.**, Washington, D.C. (National Security Industrial Assoc., 1030 15th St., NW, Washington, D.C. 20005)

19-20. **Ocean Sciences and Engineering of the Atlantic Shelf**, natl. symp., Philadelphia, Pa. (T. Evans, Conference Management Organization, Inc., Sheraton Park Hotel, 2660 Connecticut Ave., NW, Washington, D.C. 20008)

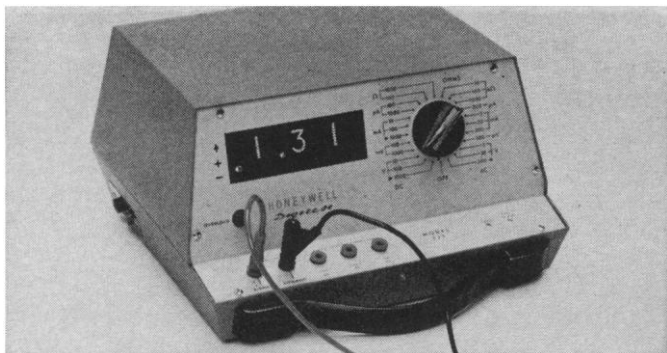
19-21. **American Railway Engineering Assoc.**, Chicago, Ill. (E. W. Hodgins, Executive Secretary, 59 E. Van Buren St., Chicago 60605)

20. **Suicidology**, 1st natl. conf., Chicago, Ill. (E. S. Shneidman, Center for Studies of Suicide Prevention, National Inst. of Mental Health, 5454 Wisconsin Ave., Chevy Chase, Md. 20203)

20-23. **American Orthopsychiatric Assoc.**, 45th annual, Chicago, Ill. (The Association, 1790 Broadway, New York 10019)

21-22. **Modulation Transfer Function**, Boston, Mass. (Society of Photo-Optical Instrumentation Engineers, P.O. Box 288, Redondo Beach, Calif. 90277)

21-23. **Symp. on Microwave Power**, 3rd



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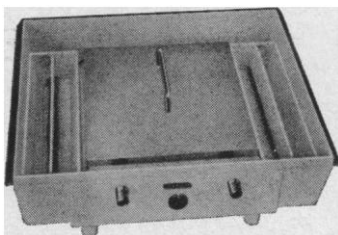
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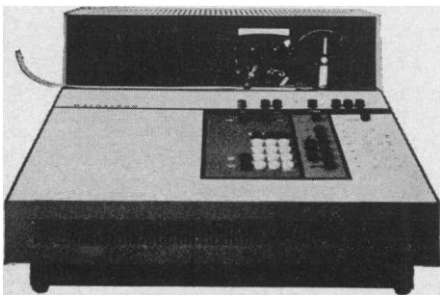


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symp., Boston, Mass. (C. Olsen, % Eimac, Division of Varian Assoc., 301 Industrial Way, San Carlos, Calif. 94070)

22-23. Montana Medical Assoc., Helena. (L. R. Hegland, The Association, P.O. Box 1692, Billings, Mont. 59103)

22-23. Socio-Economics of Health Care, 2nd natl. congr., Chicago, Ill. (H. W. Doan, Dept. of Health Care Services, American Medical Assoc., 535 N. Dearborn St., Chicago 60610)

22-27. California Medical Assoc., San Francisco. (R. L. Thomas, 693 Sutter St., San Francisco 94102)

23. New Jersey Post Graduate Anesthesia Seminar, 9th annual, Cherry Hill. (P. A. Tucci, 22 The Fairway, Upper Montclair, N.J. 07043)

23-24. Missouri Soc. of Anesthesiologists, Kansas City. (G. W. N. Eggers, Jr., Univ. of Missouri Medical Center, Columbia 65201)

24-27. American Assoc. of Dental Schools, 45th annual session, San Francisco, Calif. (D. E. Mattson, 211 E. Chicago Ave., Chicago, Ill. 60611)

24-29. American College of Allergists, 24th annual congr., Denver, Colo. (E. Bauers, 2160 Rand Tower, Minneapolis, Minn. 55402)

24-30. American Soc. of Clinical Pathologists, New Orleans, La. (L. H. Hoyt, Methodist Hospital, Indianapolis, Ind.)

25-27. Operations Research Symp., 2nd, Pittsburgh, Pa. (H. O. Teeple, TAPPI, 360 Lexington Ave., New York 10017)

25-27. Simulation and Support Conf., AIAA 2nd flight test, Los Angeles, Calif. (Meetings Manager, American Inst. of Aeronautics and Astronautics, 1290 Sixth Ave., New York 10019)

25-28. National Plant Engineering and Maintenance Show and Conf., Philadelphia, Pa. (K. E. Knowles, 245 Park Ave., New York 10017)

25-28. Organic Solid State Chemistry Symp., Upton, N.Y. (G. Adler, Brookhaven National Lab., Upton, L.I., N.Y. 11973)

25-28. Southeastern Surgical Congr., Washington, D.C. (A. H. Letton, 340 Boulevard NE, Atlanta, Ga. 30312)

27. Oral Cancer Symp., 6th, Poughkeepsie, N.Y. (M. A. Engelman, One East Academy St., Wappingers Falls, N.Y. 12590)

27. Association for the Advancement of Psychoanalysis, New York, N.Y. (E. Schattner, Secretary, 147 E. 50 St., New York 10022)

27-28. Railroad Conf., Chicago, Ill. (Institute of Electrical and Electronics Engineers, Inc., 345 E. 47 St., New York 10017)

27-29. Linear Free Energy Relationships, 2nd conf., Irvine, Calif. (J. E. Lefler, Dept. of Chemistry, Florida State Univ., Tallahassee 32306)

28-30. American Fertility Soc., San Francisco, Calif. (H. H. Thomas, 944 S. 18 St., Birmingham, Ala. 35205)

28-31. Missouri State Medical Assoc., Kansas City. (R. McIntyre, The Association, 515 E. High St., Jefferson City, Mo. 65101)

29. Symbiosis, symp., Fullerton, Calif. (L. A. Stevens, Div. of Life Sciences, Fullerton Junior College, 321 Chapman Avenue, Fullerton 92634)





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## NEW BOOKS

(Continued from page 728)

**Atomic Absorption Spectrometry in Geology.** Ernest E. Angino and Gale K. Billings. Elsevier, New York, 1967. x + 144 pp., illus. \$11.75. Methods in Geochemistry and Geophysics, No. 7.

**Attraction and Repulsion.** Mechanical Applications of Permanent Magnets. Malcolm McCaig. Oliver and Boyd, Edinburgh, 1967 (distributed in the United States by Benjamin, New York). viii + 119 pp., illus. Paper, \$1.65. Contemporary Science Paperbacks, No. 7.

**Automation.** Its Anatomy and Physiology. J. Rose. Oliver and Boyd, Edinburgh, 1967 (distributed in the United States by Benjamin, New York). viii + 144 pp., illus. Paper, \$1.65. Contemporary Science Paperbacks, No. 8.

**Automation.** Its Uses and Consequences. J. Rose. Oliver and Boyd, Edinburgh, 1967 (distributed in the United States by Benjamin, New York). viii + 123 pp., illus. Paper, \$1.65. Contemporary Science Paperbacks, No. 9.

**Baroreceptors and Hypertension.** Proceedings of an international symposium, Dayton, Ohio, November 1965. P. Kezdi, Ed. Pergamon, New York, 1967. xiv + 460 pp., illus. \$16.

**Basic Astronomy.** Patrick Moore. Oliver and Boyd, Edinburgh, 1967 (distributed in the United States by Benjamin, New York). viii + 120 pp., illus. Paper, \$1.65. Contemporary Science Paperbacks, No. 1.

**Basic Programming.** John G. Kemeny and Thomas E. Kurtz. Wiley, New York, 1967. x + 122 pp., illus. Paper, \$4.95.

**The Basis of Modern Physics.** J. M. Irvine. Oliver and Boyd, Edinburgh, 1967 (distributed in the United States by Benjamin, New York). viii + 124 pp., illus. Paper, \$1.65. Contemporary Science Paperbacks, No. 12.

**Behind the Scenes of Human Progress.** John Bennett Underwood. Exposition Press, New York, 1967. viii + 230 pp., illus. \$7.50.

**Bibliography and Index of Geology Exclusive of North America.** Vol. 29. Marie Siegrist, Mary C. Grier, and others. Geological Society of America, Boulder, Colo., 1966. xviii + 760 pp. \$47.

**The Biology of Dreaming.** Ernest Hartmann. Thomas, Springfield, Ill., 1967. xiv + 206 pp., illus. \$9.75. American Lecture Series, No. 686.

**The Biology of the Striped Skunk.** B. J. Verts. University of Illinois Press, Urbana, 1967. xiv + 218 pp., illus. \$7.95.

**Burmese Supernaturalism.** A Study in the Explanation and Reduction of Suffering. Melford E. Spiro. Prentice-Hall, Englewood Cliffs, N.J., 1967. xii + 300 pp., illus. Cloth, \$7.95; paper, \$3.95. Prentice-Hall College Anthropology Series.

**Calculus for Beginners.** W. L. Ferrar. Oxford University Press, New York, 1967. viii + 194 pp., illus. Cloth, \$8.75; paper, \$4.

**Calculus of Variations and Partial Differential Equations of the First Order.** Part 2, Calculus of Variations. Carathéodory. Translated from the German edition (Berlin, 1956) by Robert B. Dean. Julius J. Brandstatter, Translation Ed. Holden-

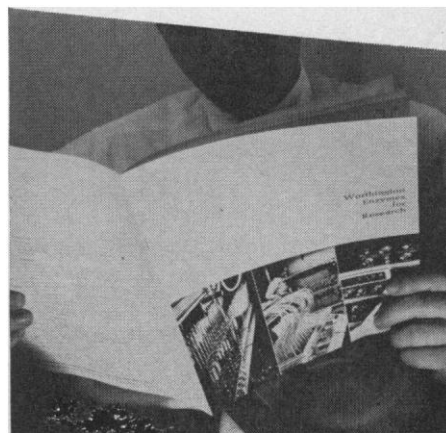


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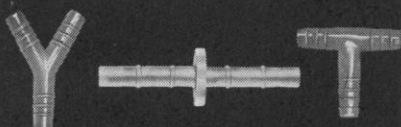
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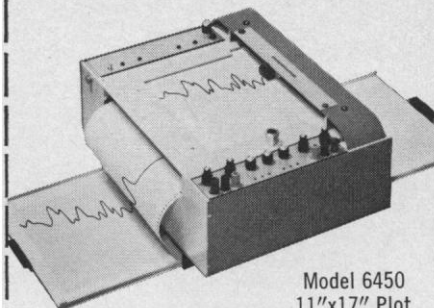
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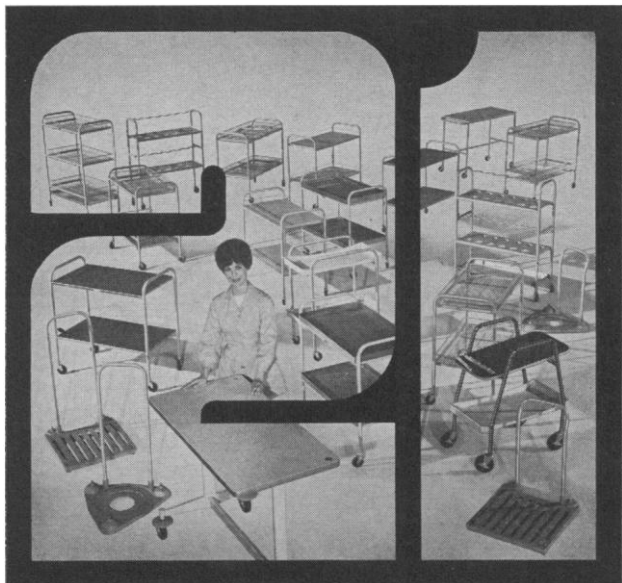
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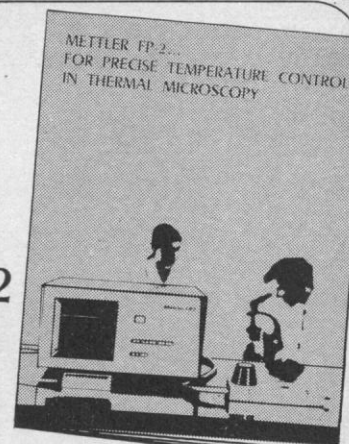
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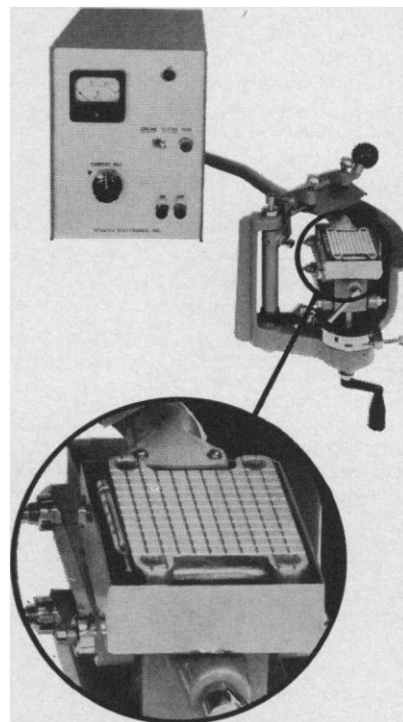
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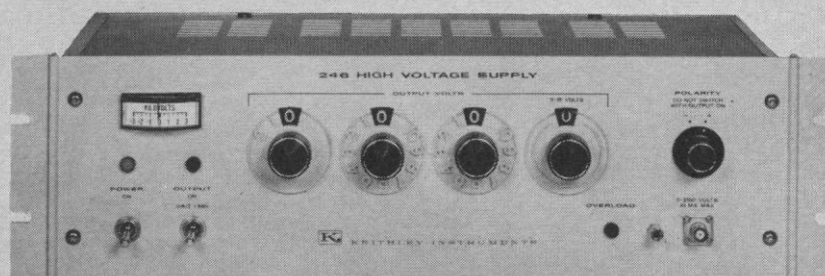
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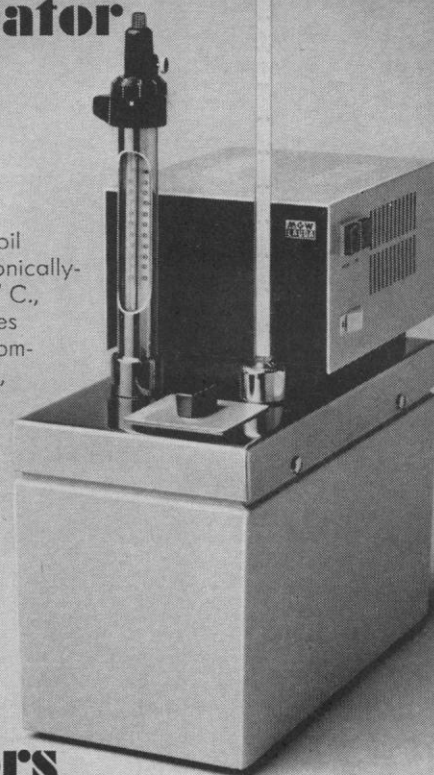
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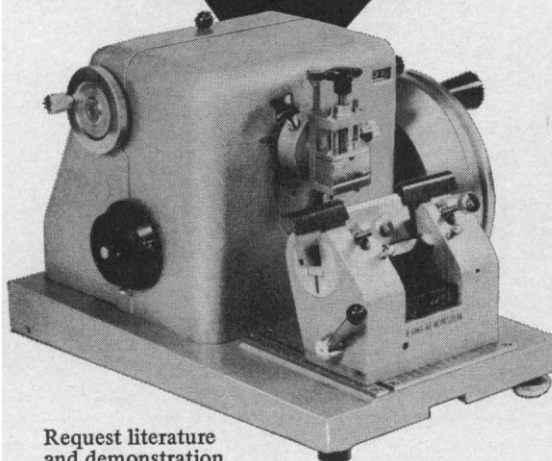
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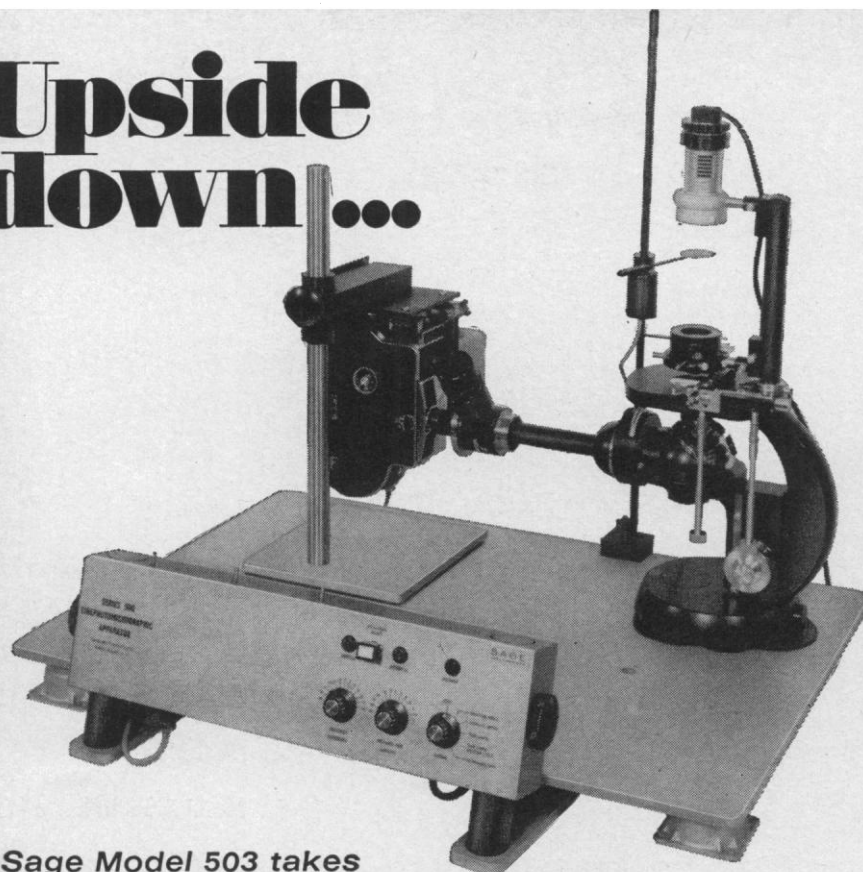
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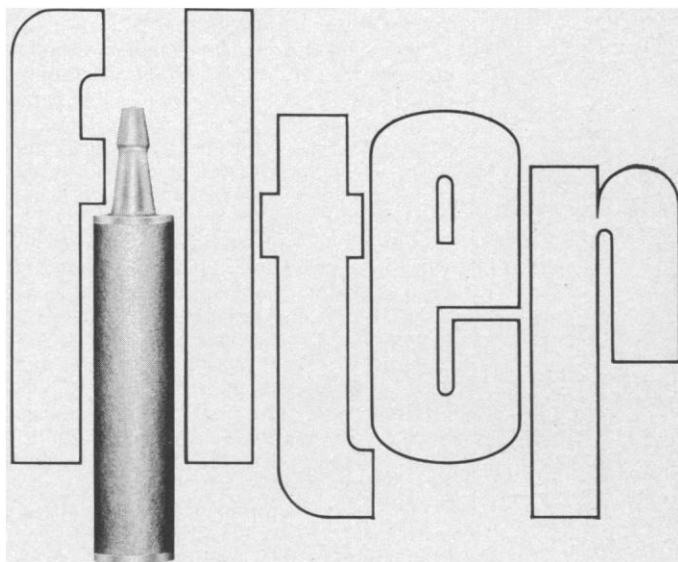
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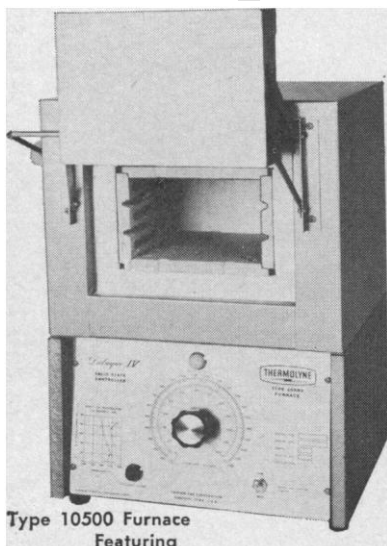


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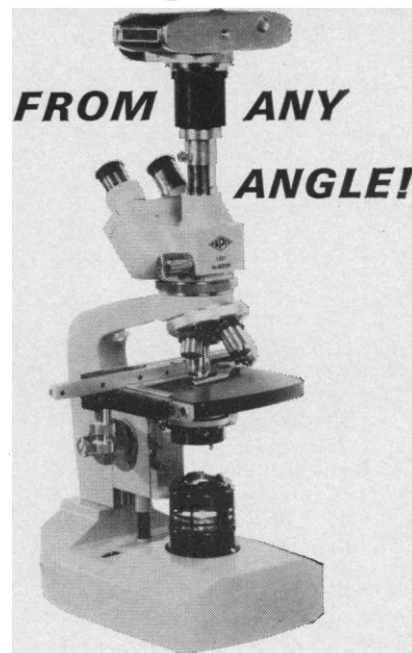
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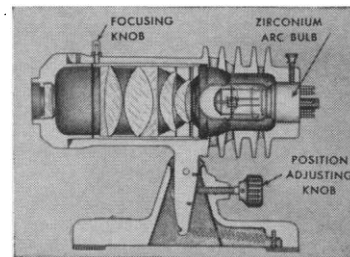
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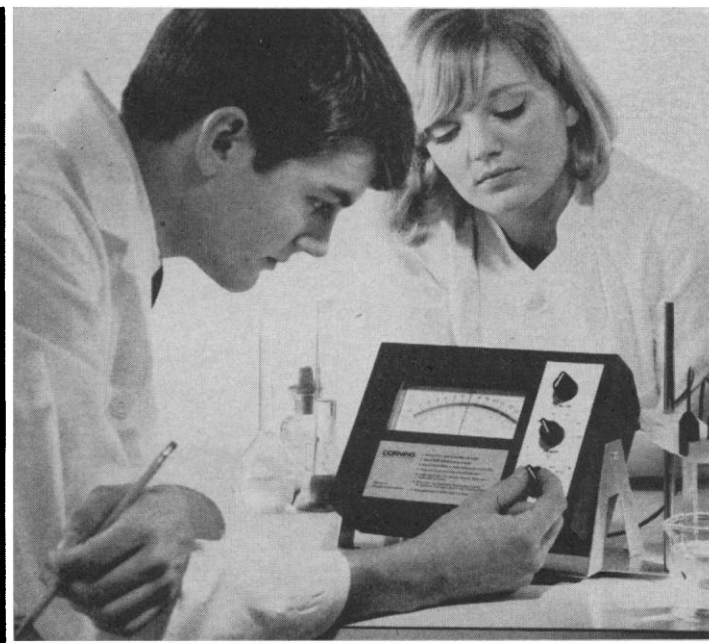
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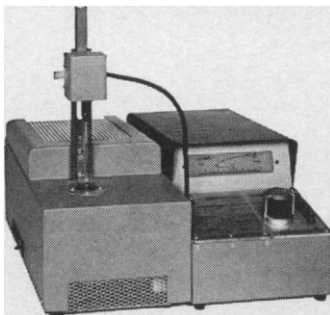
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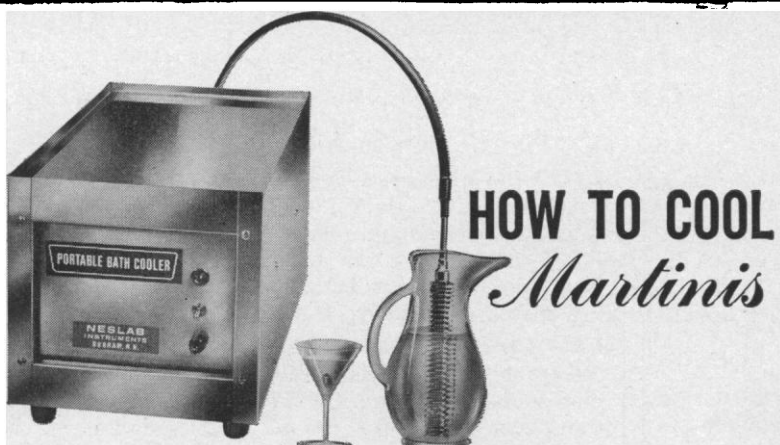
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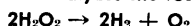
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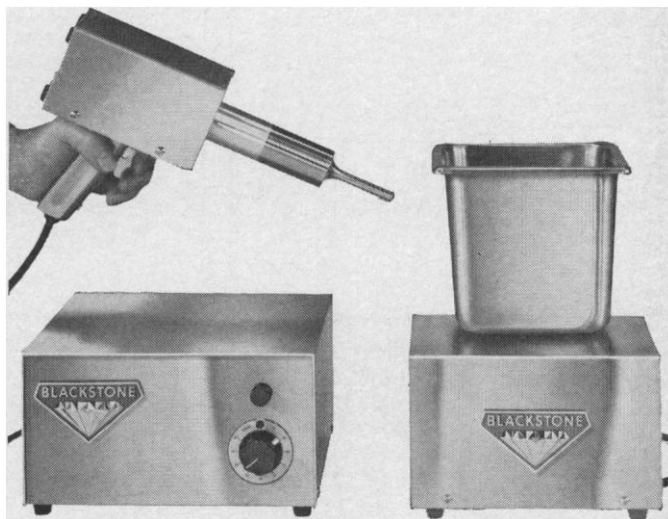
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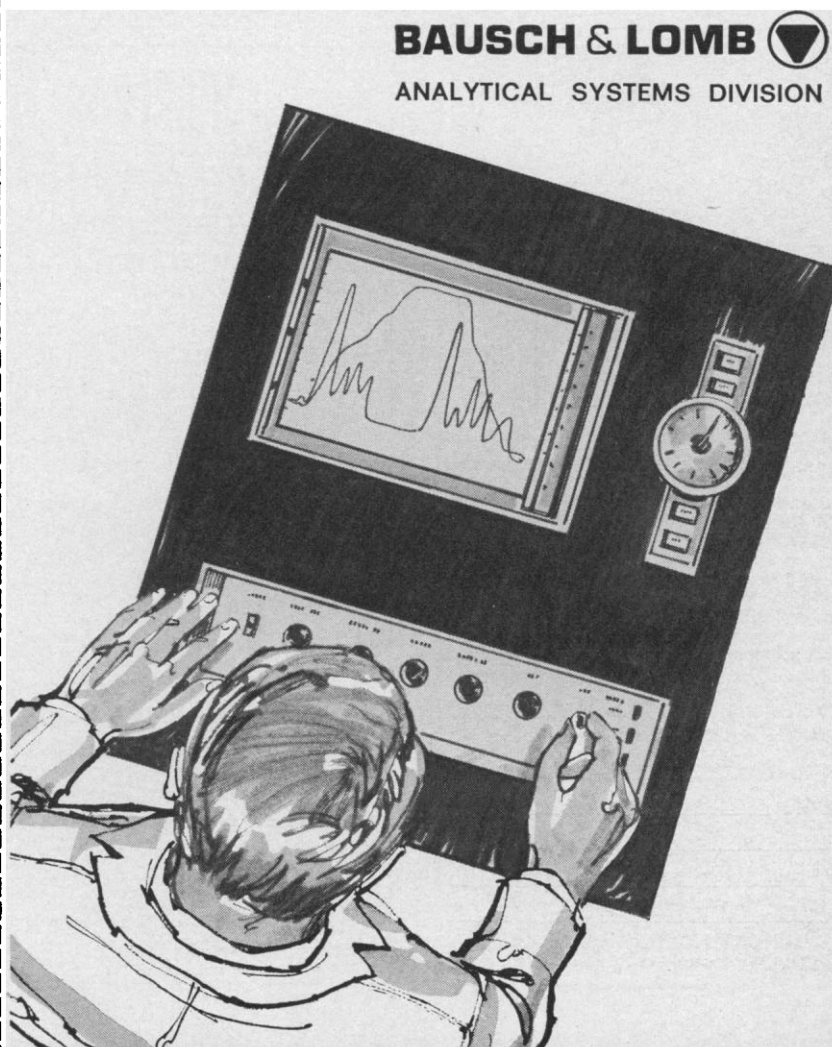
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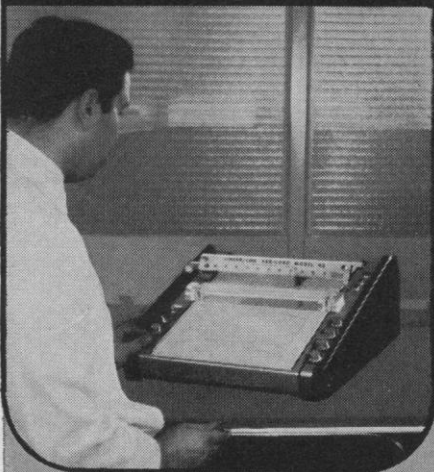
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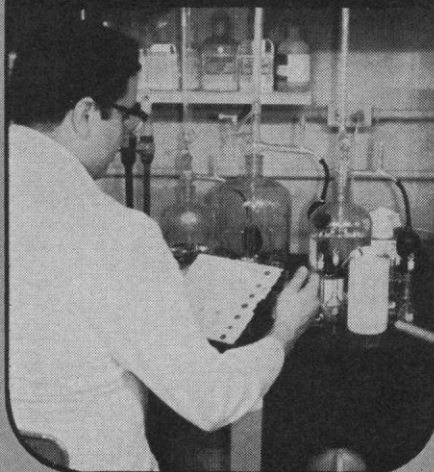


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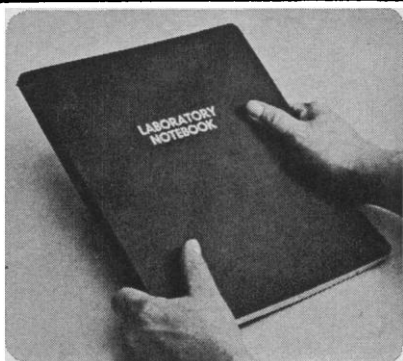
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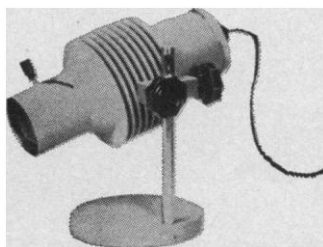
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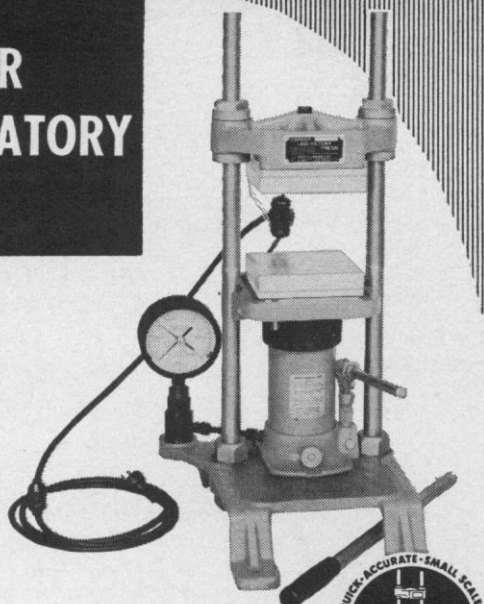
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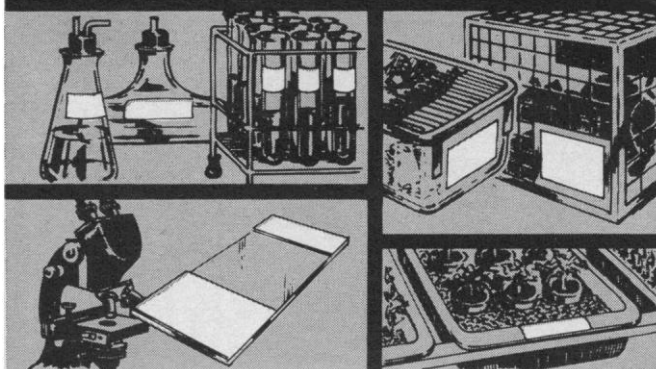
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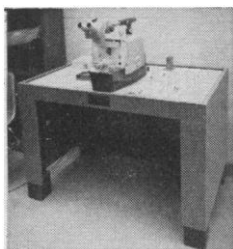
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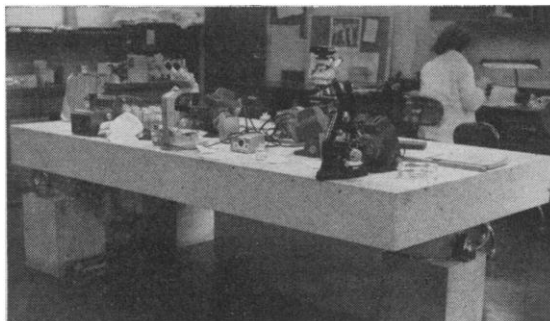
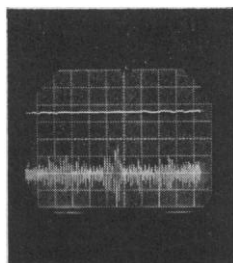
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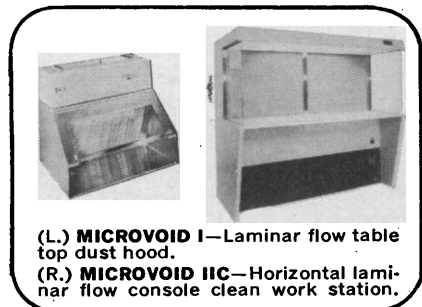
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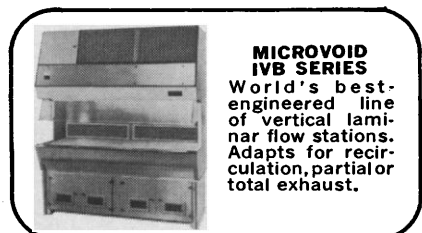
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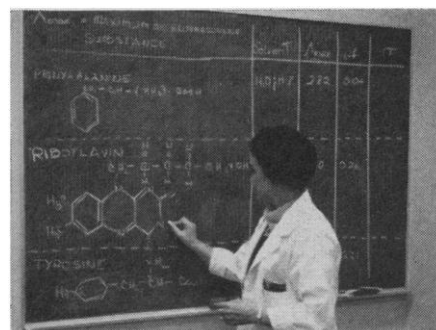
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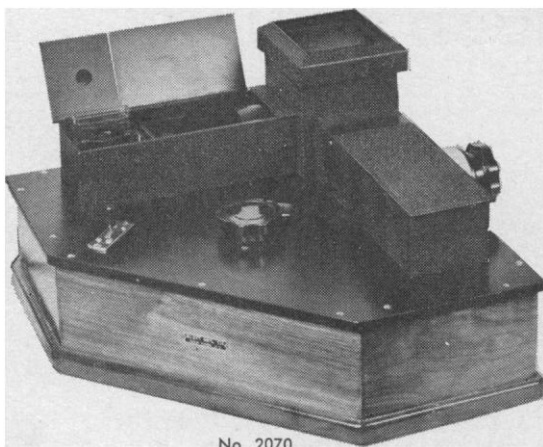
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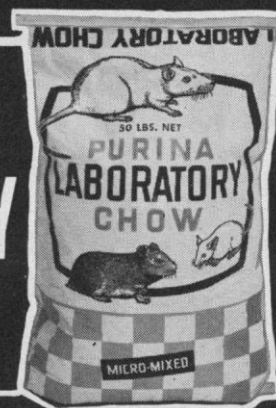
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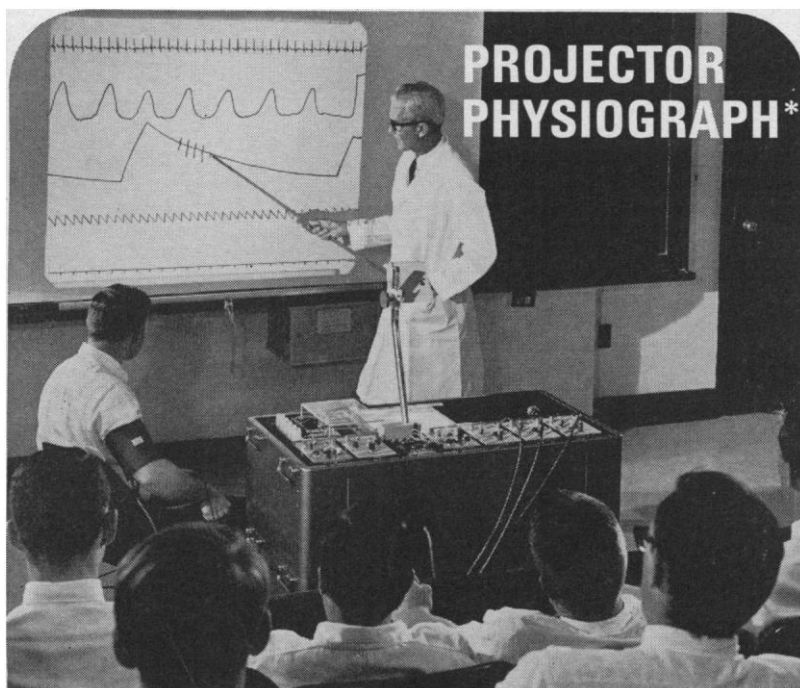
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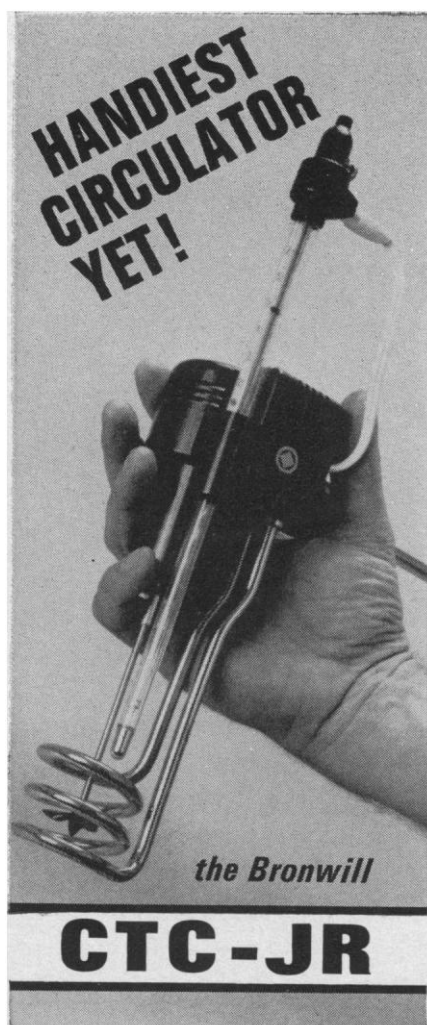


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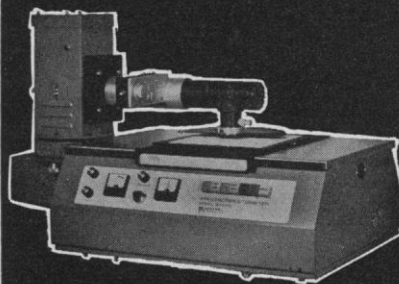
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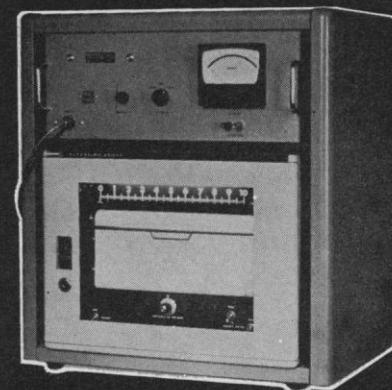
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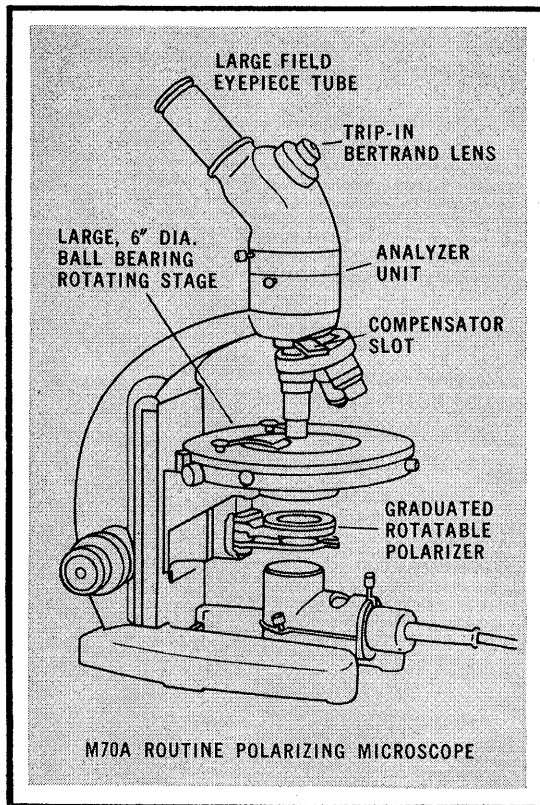
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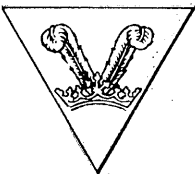
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despite its low price, the M70A Polarizing Microscope was not designed to a price, but to a job. It is a modification of the well-known Vickers M72-M74 polarizing stands, — retaining all the quality features which are needed in routine investigations and student instruction. For example: — **Rotating Stage** is large, 6" in diameter, with smooth ball-bearing motion, graduated and reading to 6' on either side of the stand by double vernier. It is a research grade stage, as on all Vickers models. **Field of View** is wide, utilizing wide field, large diameter, focusing cross-line eyepieces. **Optical Equipment** to carry out all regular orthoscopic and conosopic observations can be provided —

patented trip-in Bertrand Lens; high numerical aperture 40x, high-dry, spring mounted objective; swing-out top lens condenser; wide choice of strain-free optics, wedges, compensators, etc. **Polarizer and Analyzer** are made from rigorously selected polarizing material with excellent extinction qualities. Analyzer is on a slider — the rotatable polarizer is mounted on a swing-out mount, so that both polarizing components can be quickly removed from the optical train. **Stand Construction** is versatile and, at the same time, student proof. Visual and photographic body tubes of all types can be instantly interchanged, as well as a variety of built-in illuminators. The microscope stand is ruggedly built and very stable. Focusing mechanism incorporates friction clutches, so that it is **impossible to damage slides or optics by over-running the coarse or fine motions.** **Service and Guarantee** — Materials and workmanship of the stand and optics are guaranteed for a period of ten years from purchase. Full servicing facilities are maintained in the U.S. and Canada, with service engineers performing work in your laboratory, if required. ▼ May we show you the M70A or send complete specification and price? Just phone or drop us a line.



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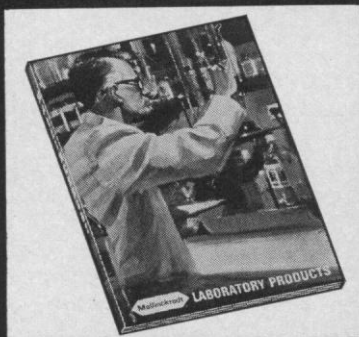
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**Test Methods for Compression Members.** A symposium presented at the 69th annual meeting of the American Society for Testing and Materials, Atlantic City, N.J., June-July 1966. American Society for Testing and Materials, Philadelphia, 1967. vi + 213 pp., illus. \$11.50; 30 percent discount to members. ASTM Special Technical Publication, No. 419.

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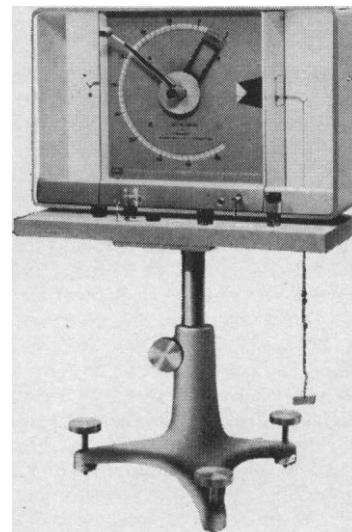
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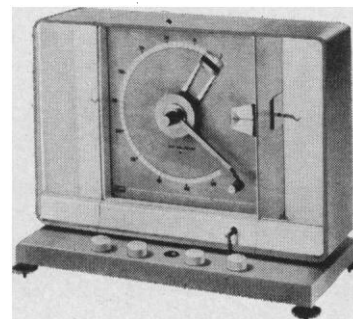
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