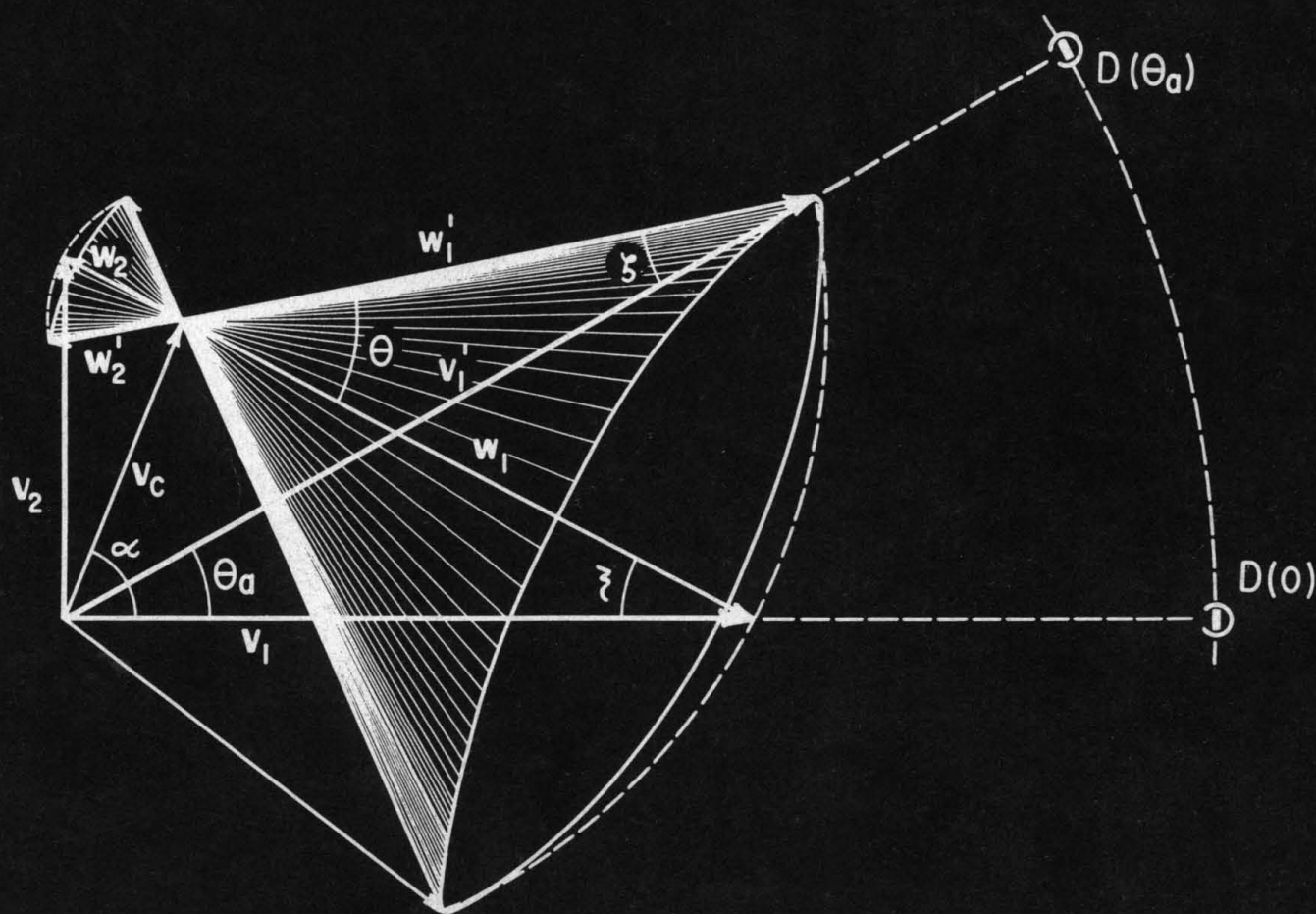


SCIENCE

10 April 1964

Vol. 144, No. 3615

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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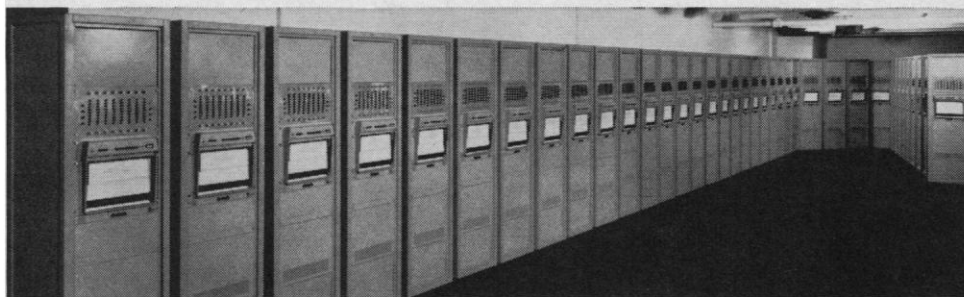
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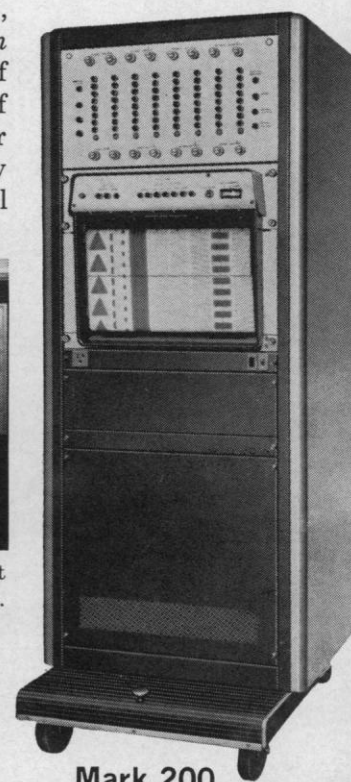
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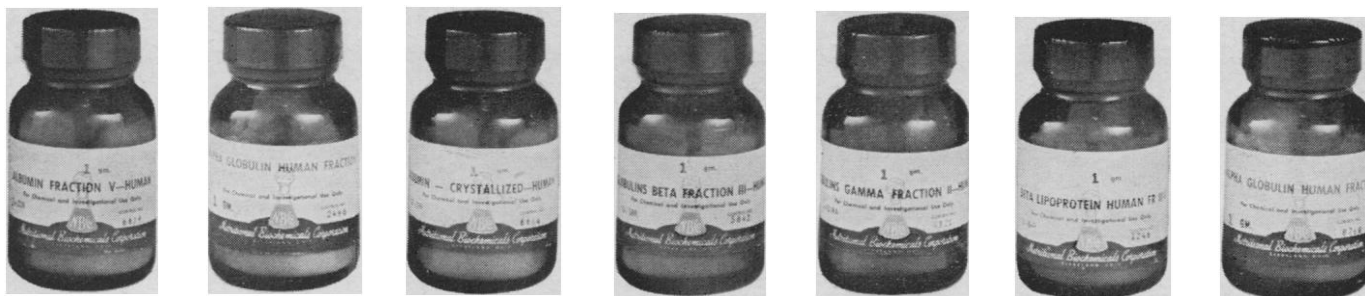


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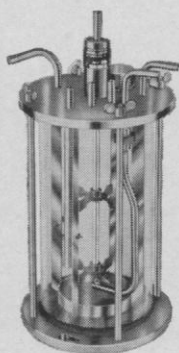
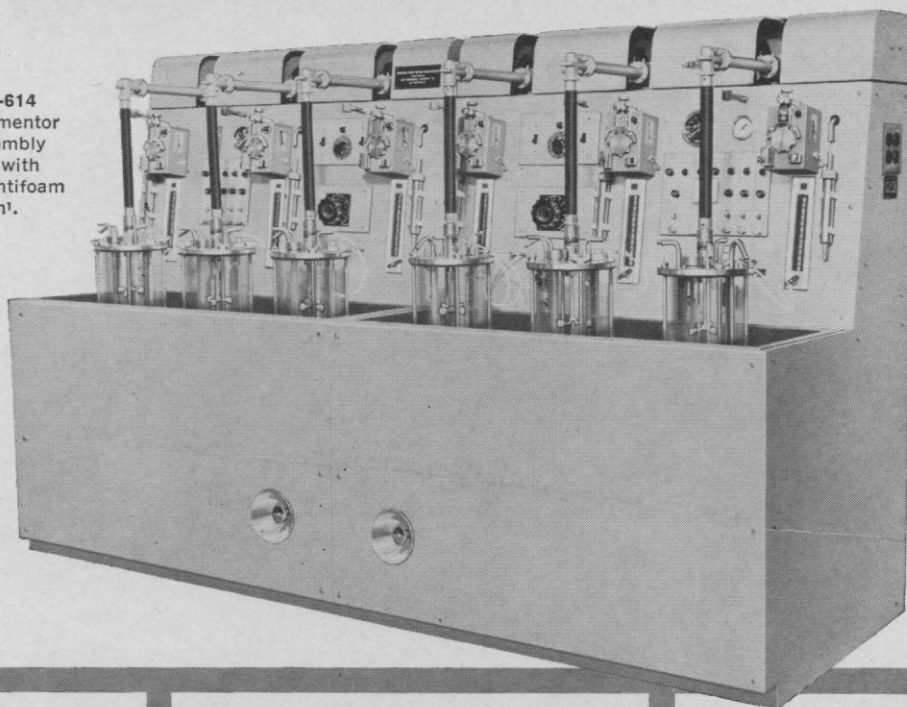
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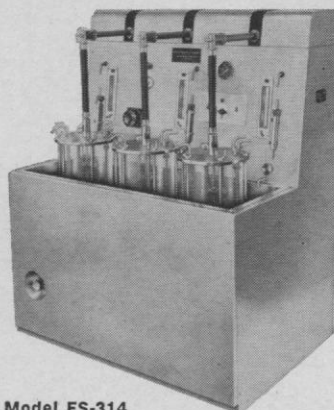
COVER

"Velocity diagram" used in the analysis of experimental data on the scattering of crossed molecular beams. This example illustrates certain relationships between velocities (and angles) in the center-of-mass system and in the apparatus system for a special case—90° incidence, elastic scattering. See page 141.

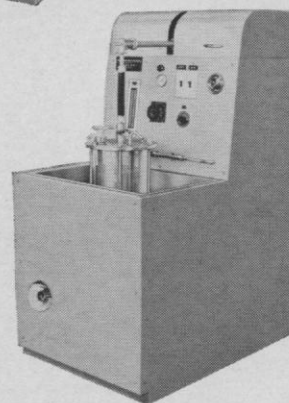
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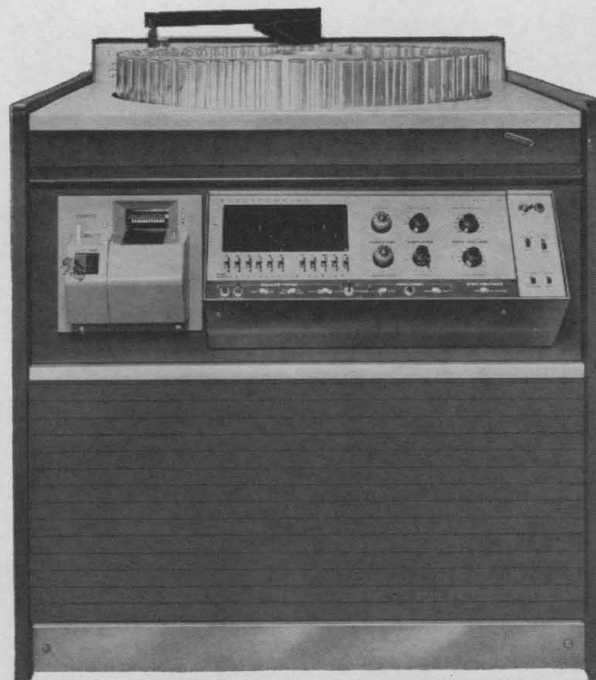
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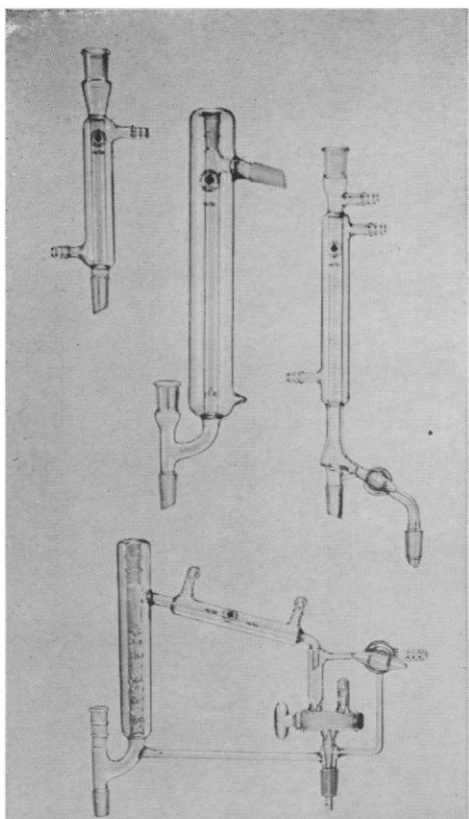
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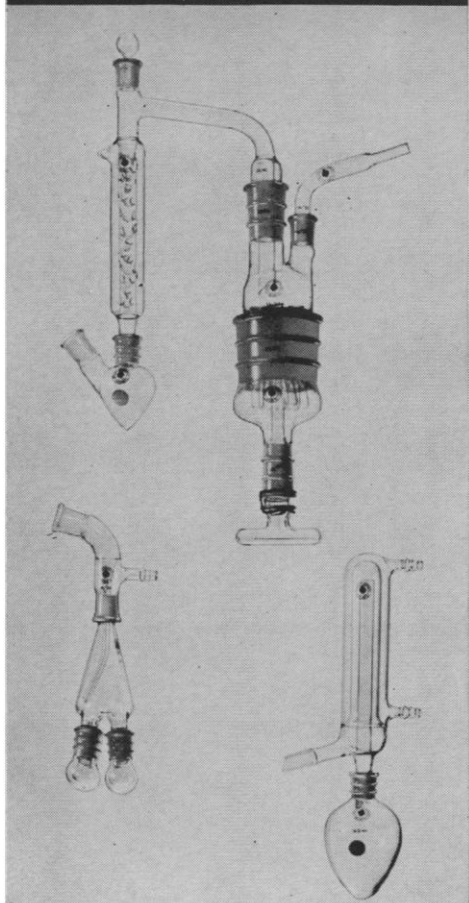
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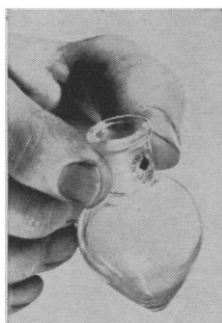
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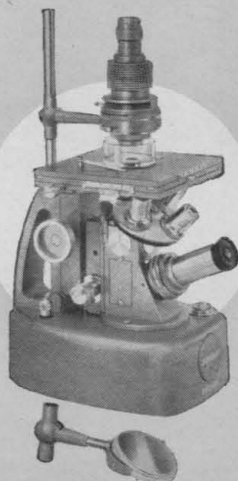
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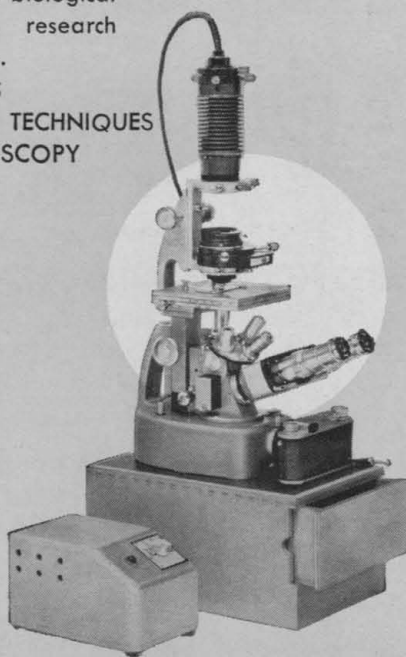
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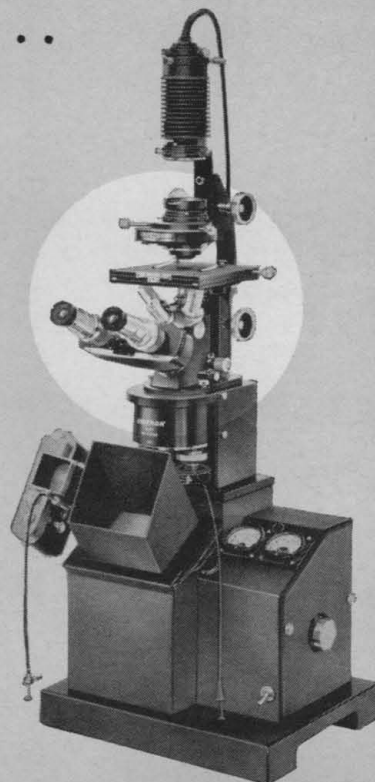
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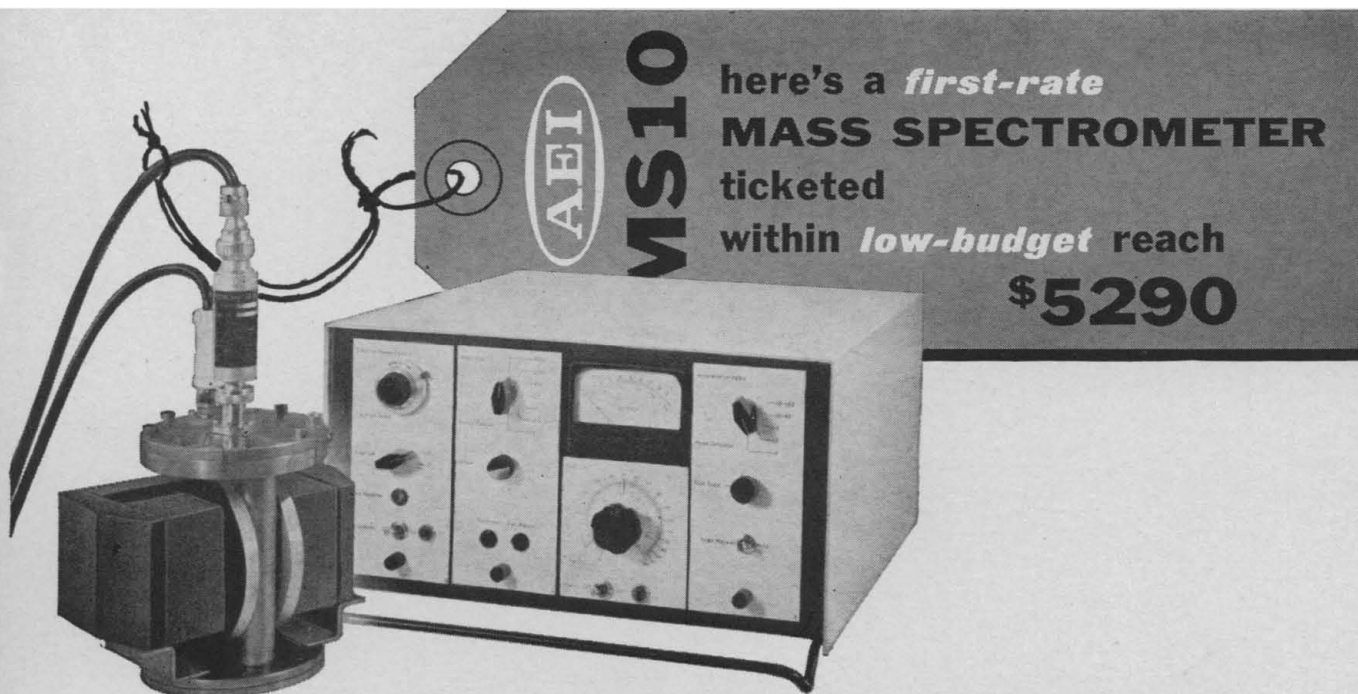


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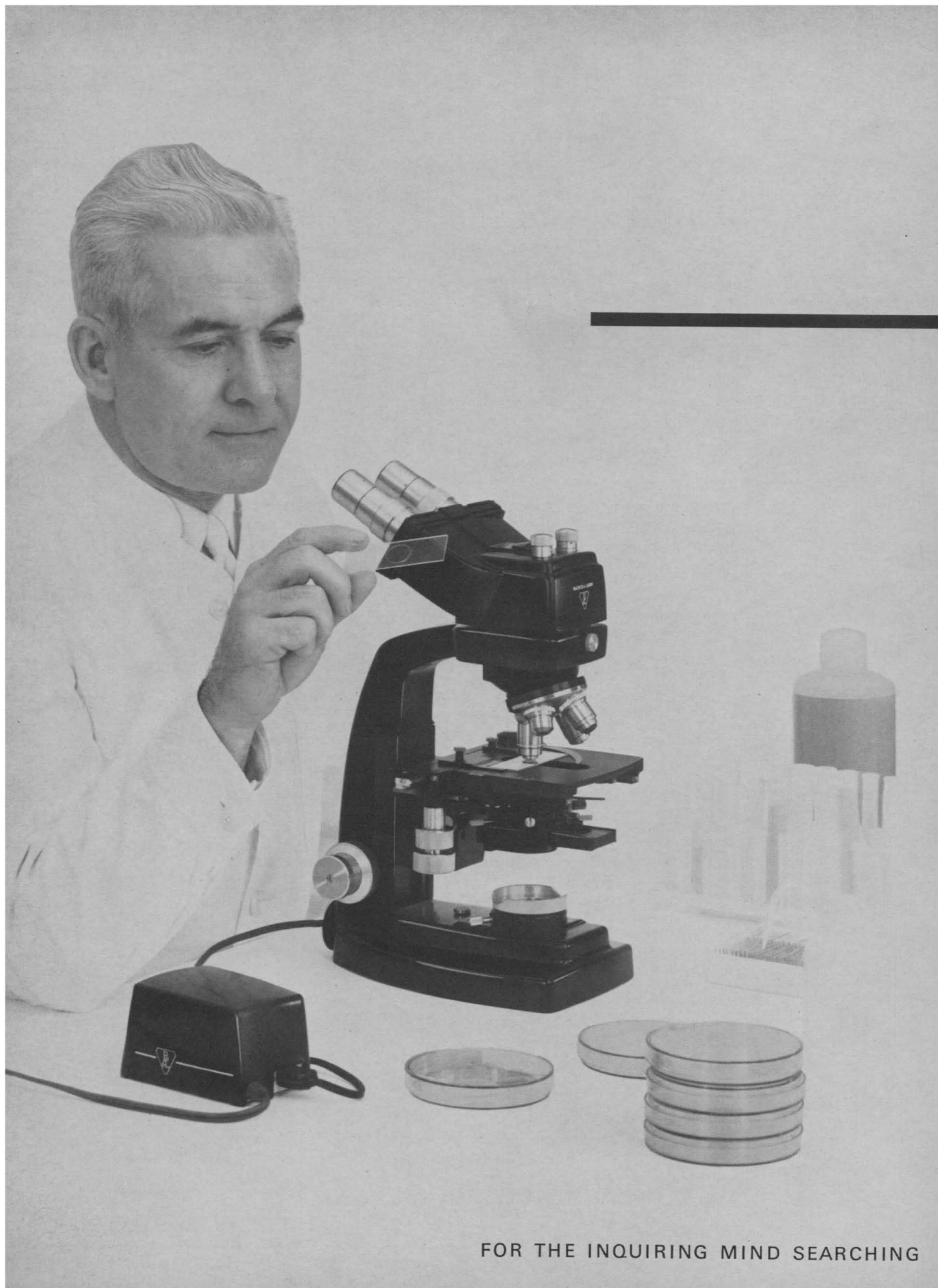
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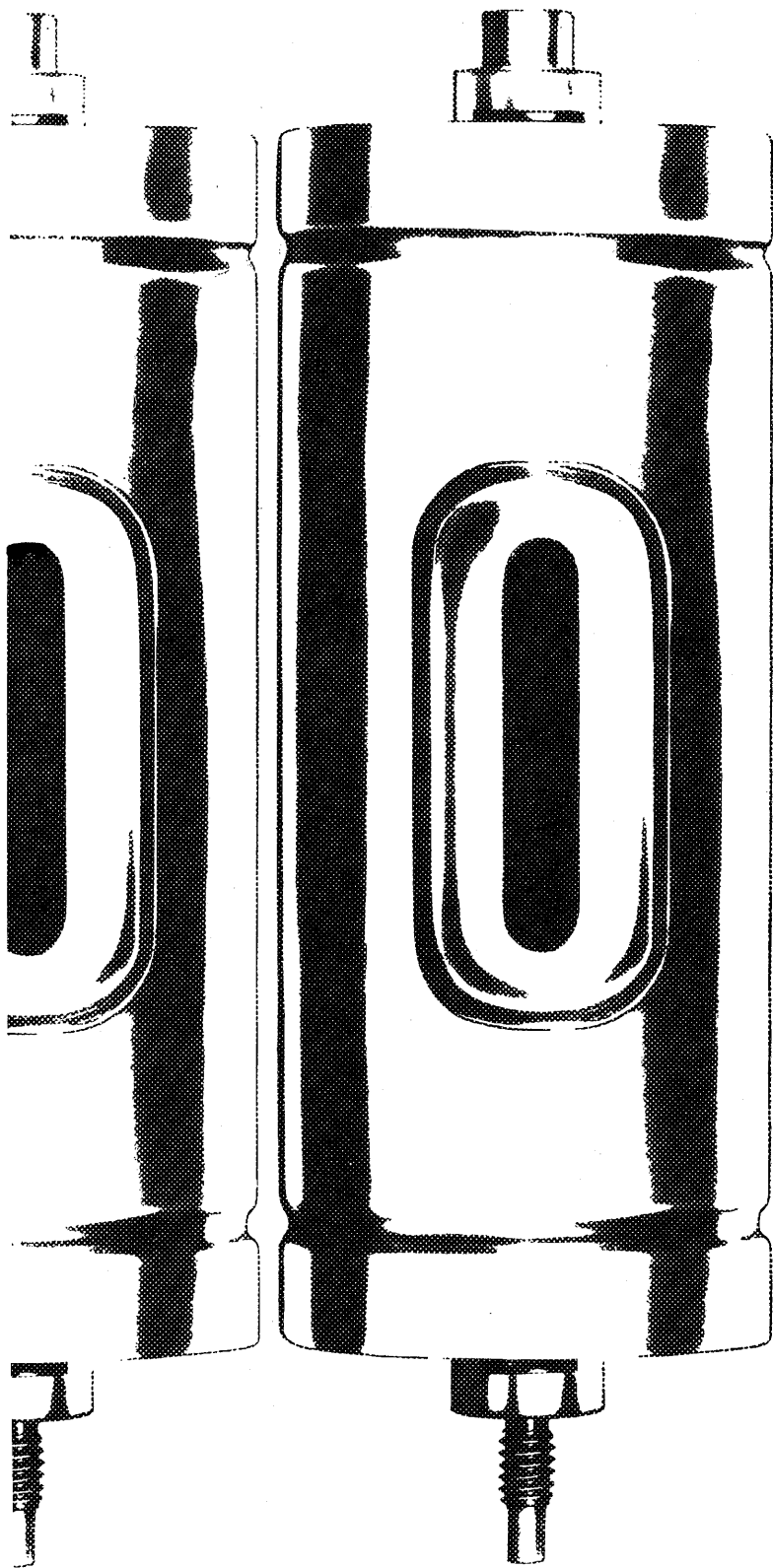
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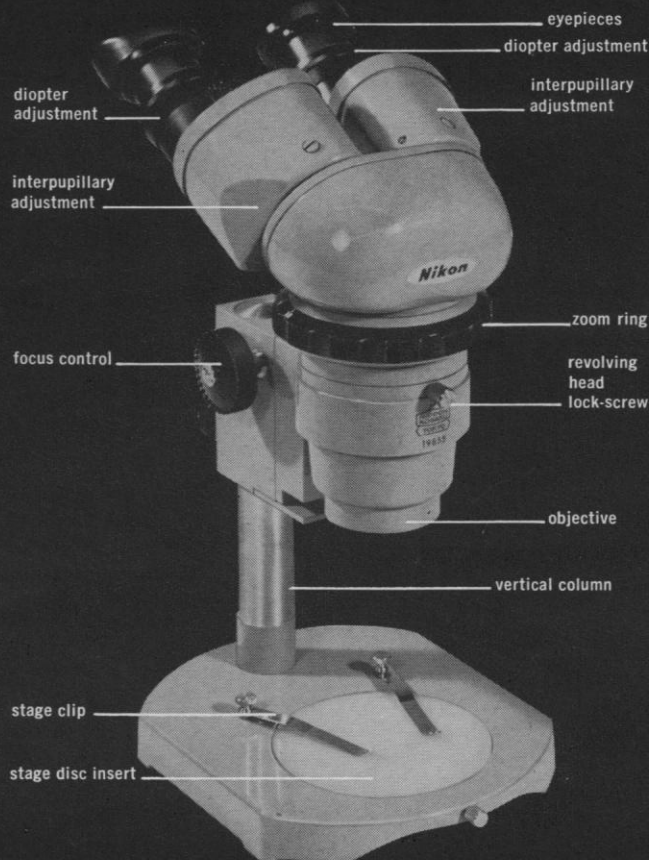
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		20X		15X		10X		
		mag.	field dia.	mag.	field dia.	mag.	field dia.	
0.8X to 4X zoom	none	8X to 40X	29.7mm to 5.6mm 1.17 in. to .22 in.	12X to 60X	15.3mm to 2.9mm .60 in. to .11 in.	16X to 80X	14.2mm to 2.7mm .56 in. to .11 in.	77.5mm 3.05 in.
	0.5X	4X to 20X	45.5mm to 9.4mm 1.79 in. to .37 in.	6X to 30X	24.8mm to 5.1mm .98 in. to .2 in.	8X to 40X	22.2mm to 4.5mm .87 in. to .18 in.	103mm 4.06 in.
	0.7X	5.6X to 28X	38.0mm to 7.3mm 1.50 in. to .29 in.	8.4X to 42X	19.8mm to 3.9mm .78 in. to .15 in.	11.2X to 56X	18.2mm to 3.5mm .72 in. to .14 in.	95.5mm 3.76 in.
	1.5X	12X to 60X	21.0mm to 4.1mm .83 in. to .16 in.	18X to 90X	11.0mm to 2.1mm .43 in. to .08 in.	24X to 120X	9.0mm to 1.8mm .35 in. to .07 in.	45mm 1.77 in.

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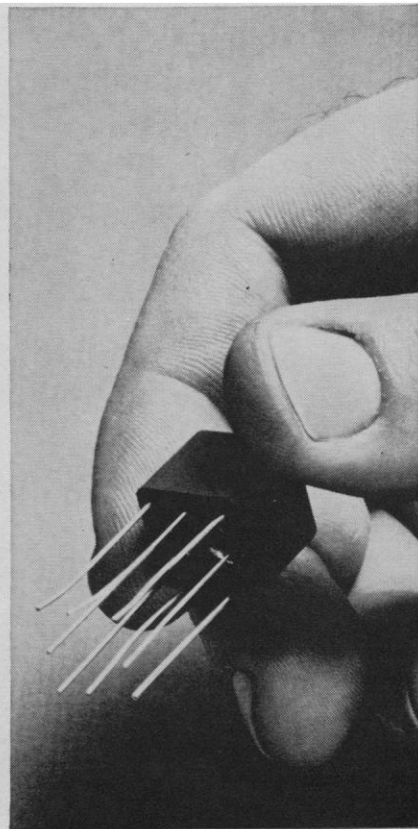
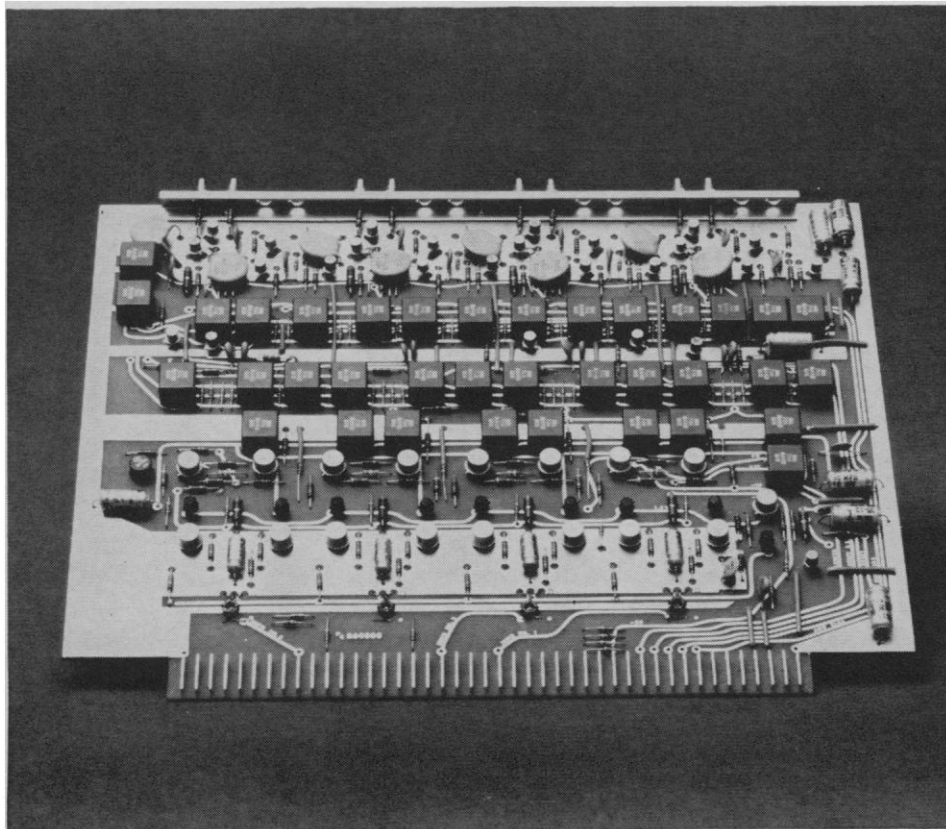
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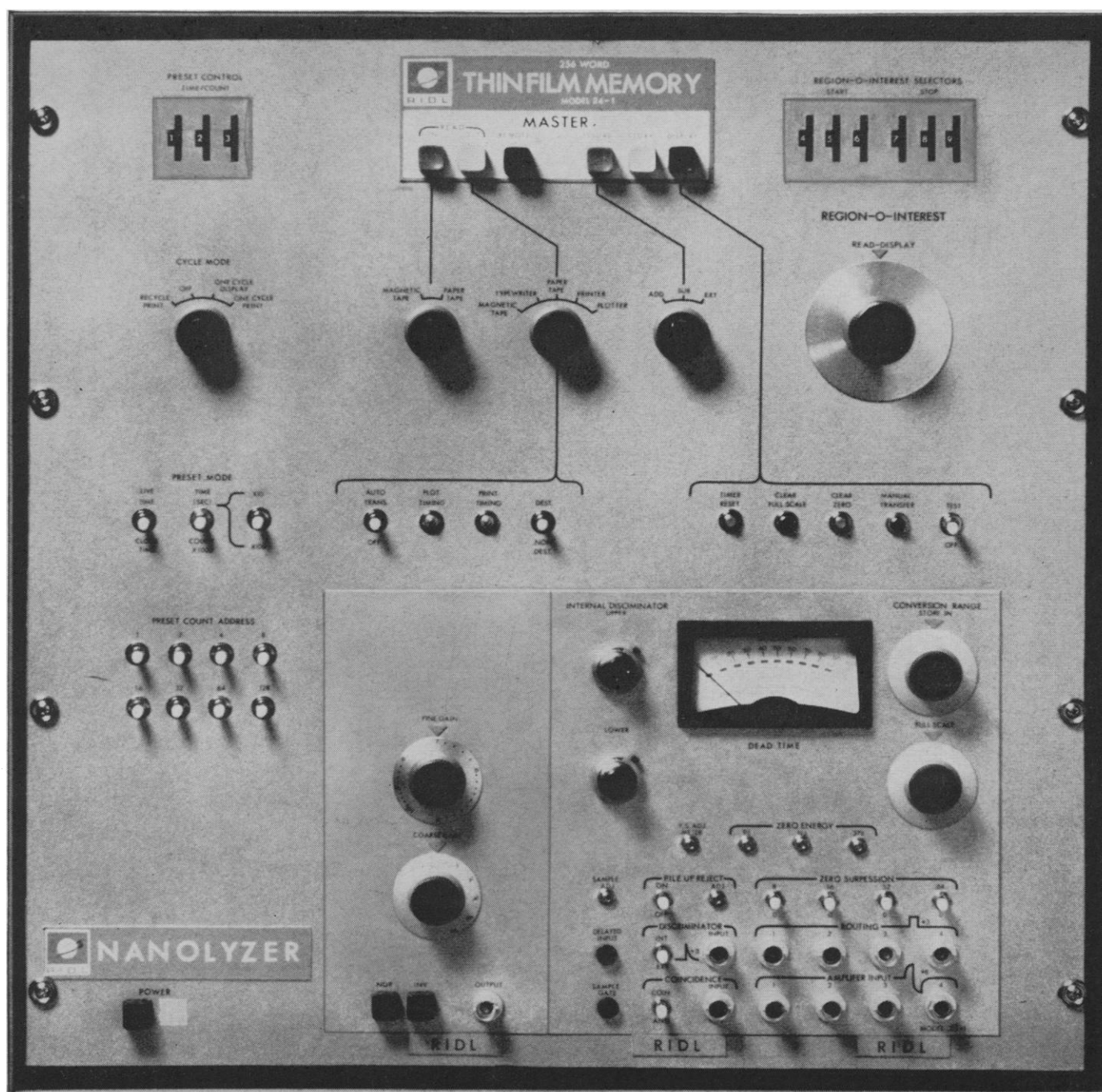
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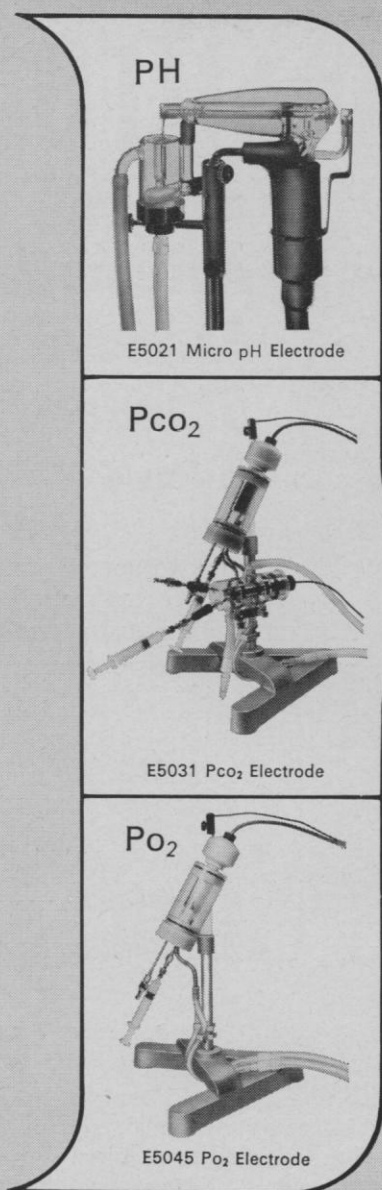
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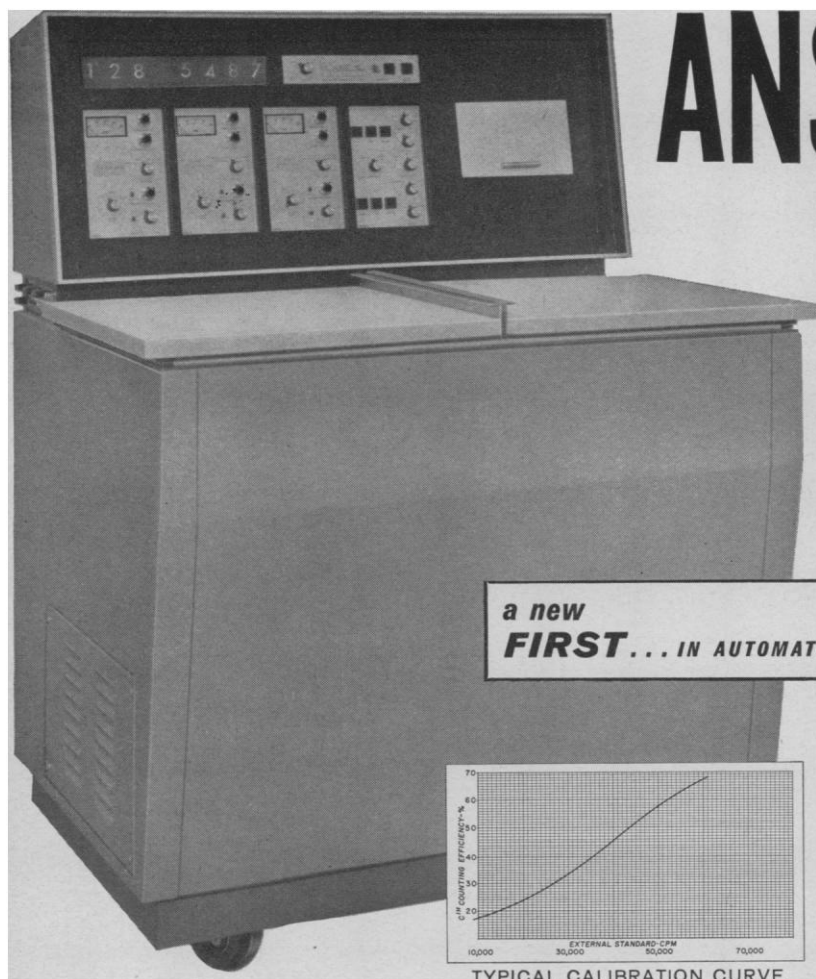
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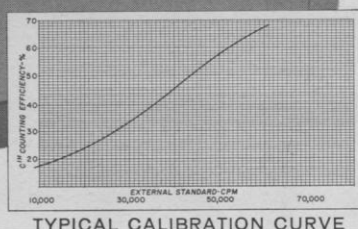
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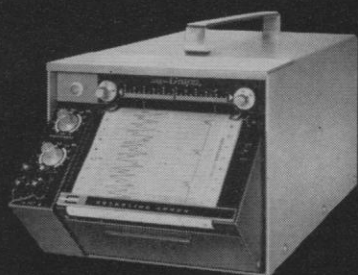
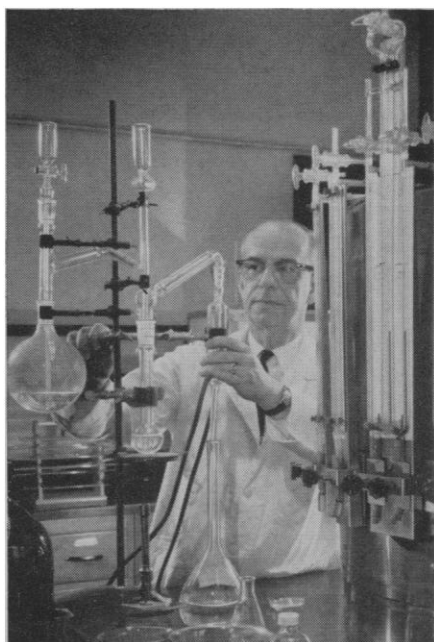
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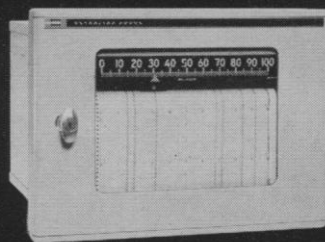
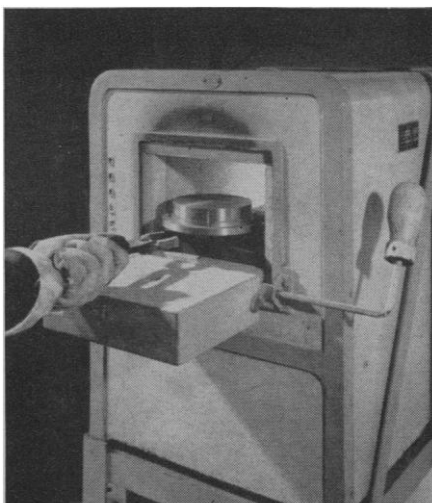
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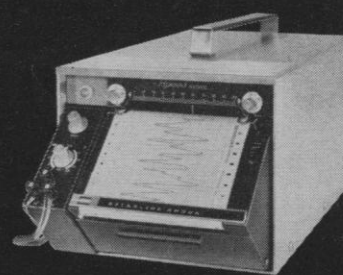
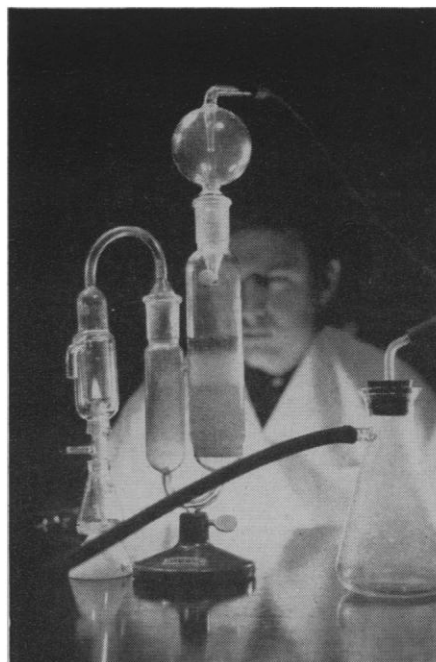
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Any of these recorders can handle DC voltage inputs as low as 1 millivolt full scale, or they can be supplied to measure and record resistance changes from 2 ohms to several hundred ohms.

Write for Series "E" catalog.



**Need $\frac{1}{8}$ second
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The Speedservo's feedback potentiometer has virtually unlimited life.

The Speedservo is available in the illustrated portable, sloped writing surface model or in a flush model with 8" x 8" case front.

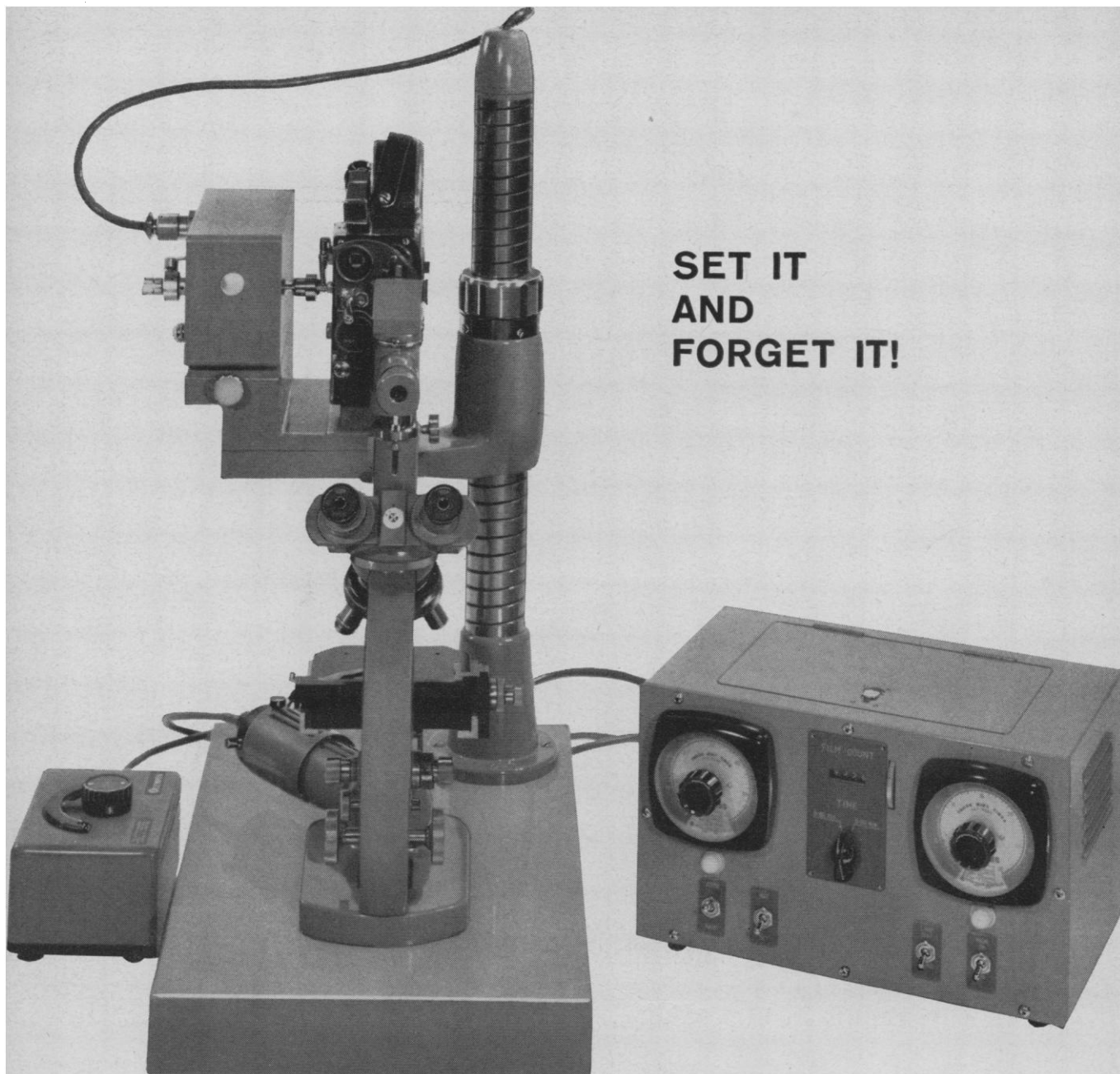
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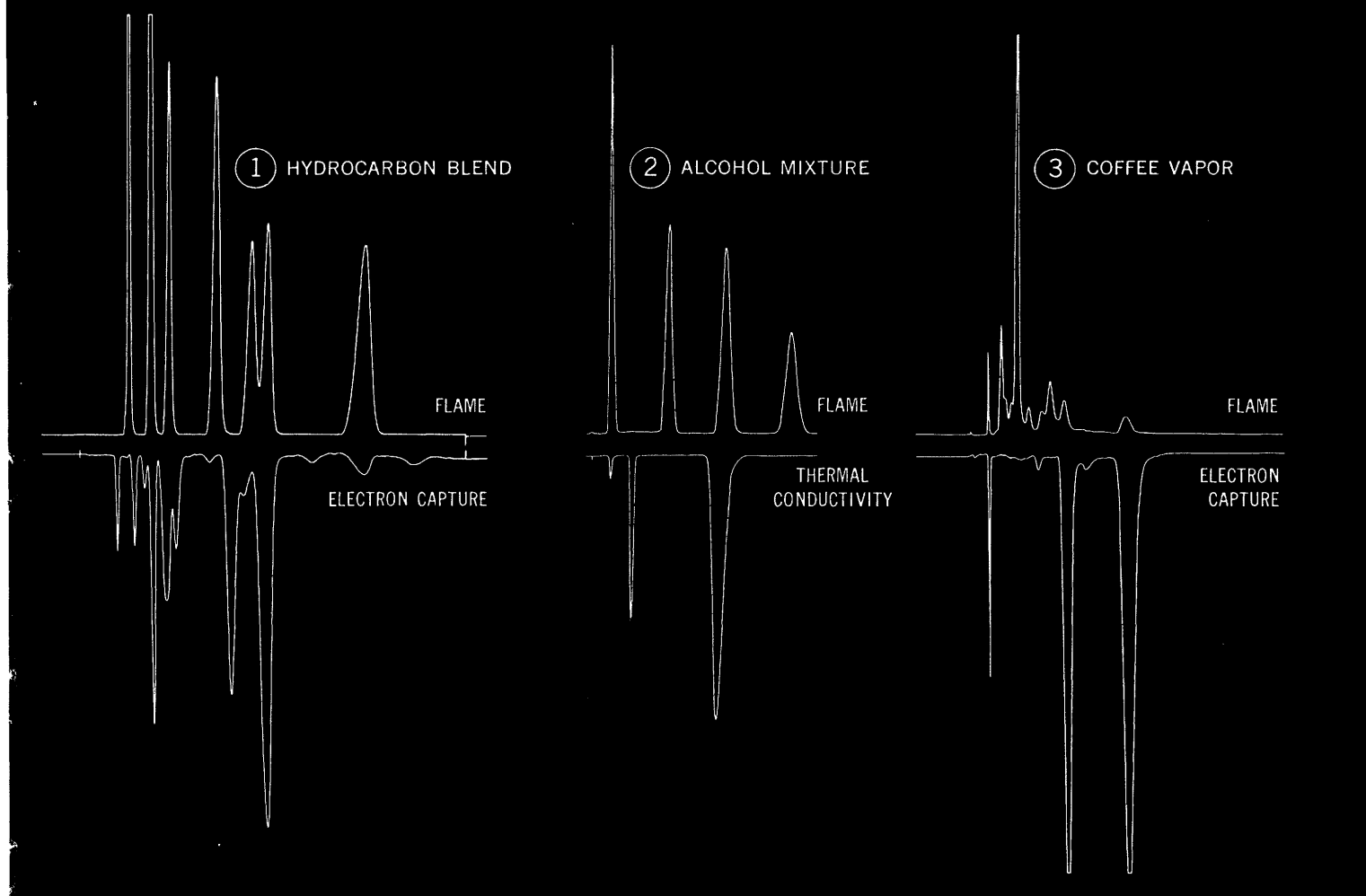
The viewer of Model 2600 permits observing the image while shooting the picture, and its auto-timer makes possible slow-speed picture taking. The use of an Elgeet-Olympus Exposure Meter Model EMM-IV is recommended for obtaining the most favorable exposure.

PHOTOGRAPHIC MAGNIFICATION—Any good 16mm or 8mm can be used.
16mm 0.28 times total magnification of microscope.
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Elgeet

SIMULTANEOUSLY



The simultaneous detection of a gas chromatograph column effluent by two different types of detection systems places a new degree of utility at the disposal of the analyst. Each of the three simultaneous chromatograms reproduced above, for example, makes possible a more detailed characterization of the sample analyzed than any single-detector run can do.

Chromatogram #1—a simultaneous flame-electron capture analysis of a hydrocarbon blend—not only responds to all the major hydrocarbon constituents in the upper trace but also a surprisingly large number of contaminants in the lower trace.

In chromatogram #2—a simultaneous flame-thermal conductivity analysis of a trace alcohol mixture in aqueous solution—four alcohols are detected by the flame detector operated at high sensitivity while the thermal conductivity detector reveals

three inorganic constituents (NH_3 , CS_2 , and H_2O respectively) that the flame detector does not pick up at all.

Chromatogram #3 is a sampling of the vapor above ground coffee, as detected simultaneously by the flame-electron capture combination.

All three chromatograms were obtained recently in the F & M Applications Laboratory on a Series 810 Gas Chromatograph.

Five important design features make Series 810 Gas Chromatographs particularly well suited to simultaneous detection: (1) the effluent splitter has excellent linearity; (2) any two detectors can be installed and operated simultaneously—the choice is made from dual flame, dual thermal conductivity, electron capture, and micro cross-section detectors; (3) either or both detectors can be changed as frequently as desired; (4) dual column compensation of thermal conductivity

or flame ionization detectors is readily accomplished; and (5) collection of samples is possible during most modes of operation.

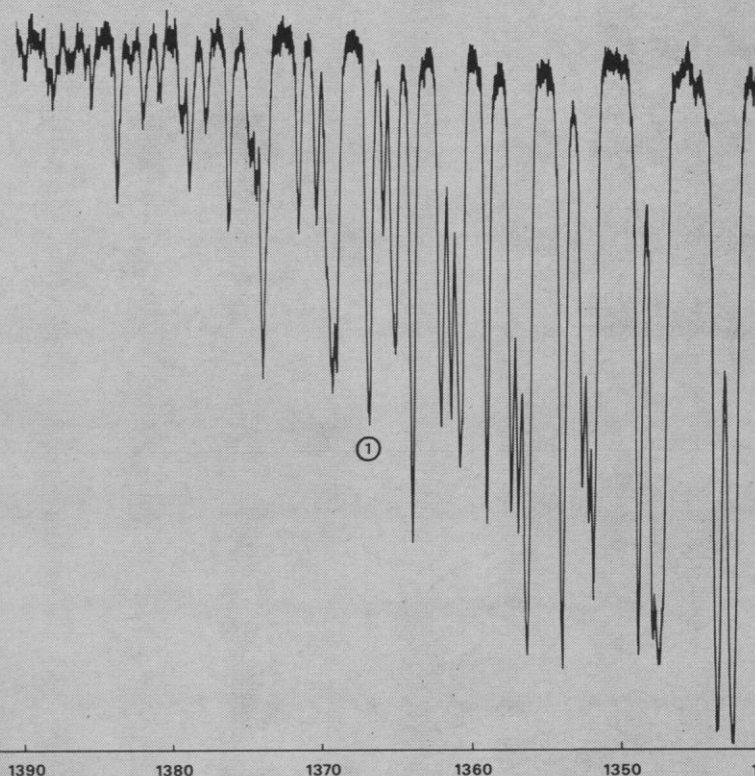
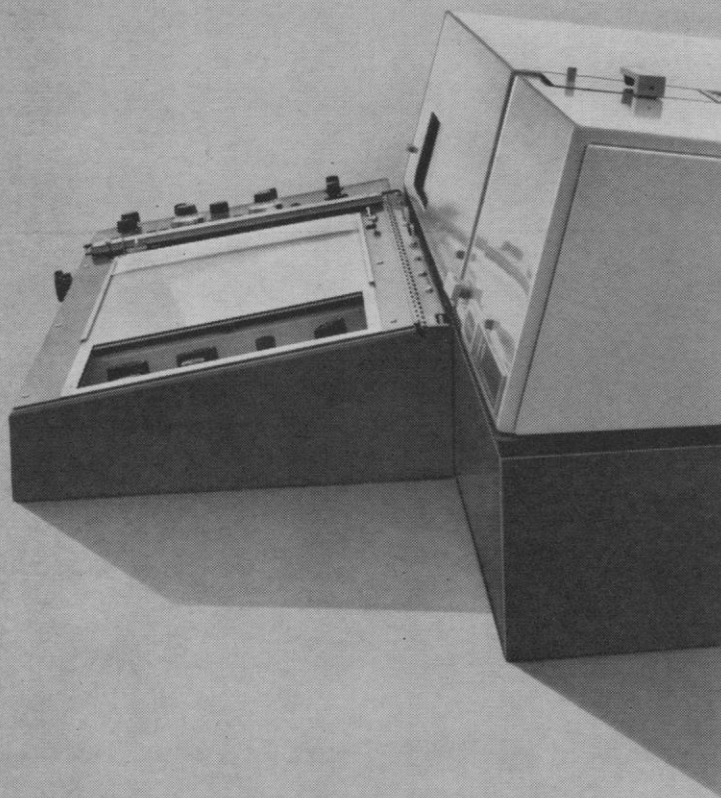
For more information on this unusually versatile gas chromatograph, write F & M Scientific Corporation, Route 41 and Starr Road, Avondale, Pennsylvania, phone (215) 268-2281. European subsidiary: F & M Scientific Europa N.V., Basisweg, Sloterdijk/Amsterdam, The Netherlands.



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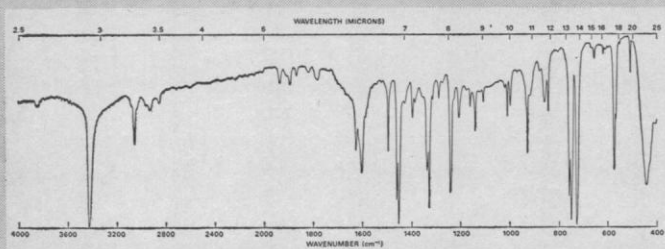
In the final analysis... it's F&M

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for a study like this...

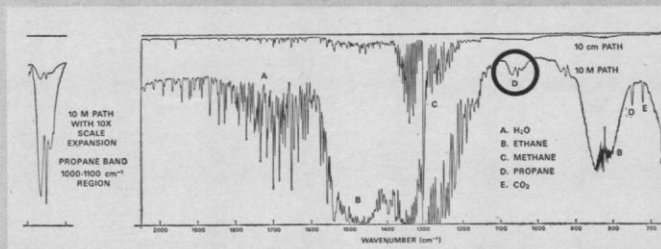


YIELDING THE HIGHEST RESOLUTION of any commercial infrared spectrophotometer, the IR-9 recorded this scan of 60 mm of methane in a 10 cm cell in the region 1220 to 1390 cm^{-1} . Spectral

that you can convert to energy for studies like these

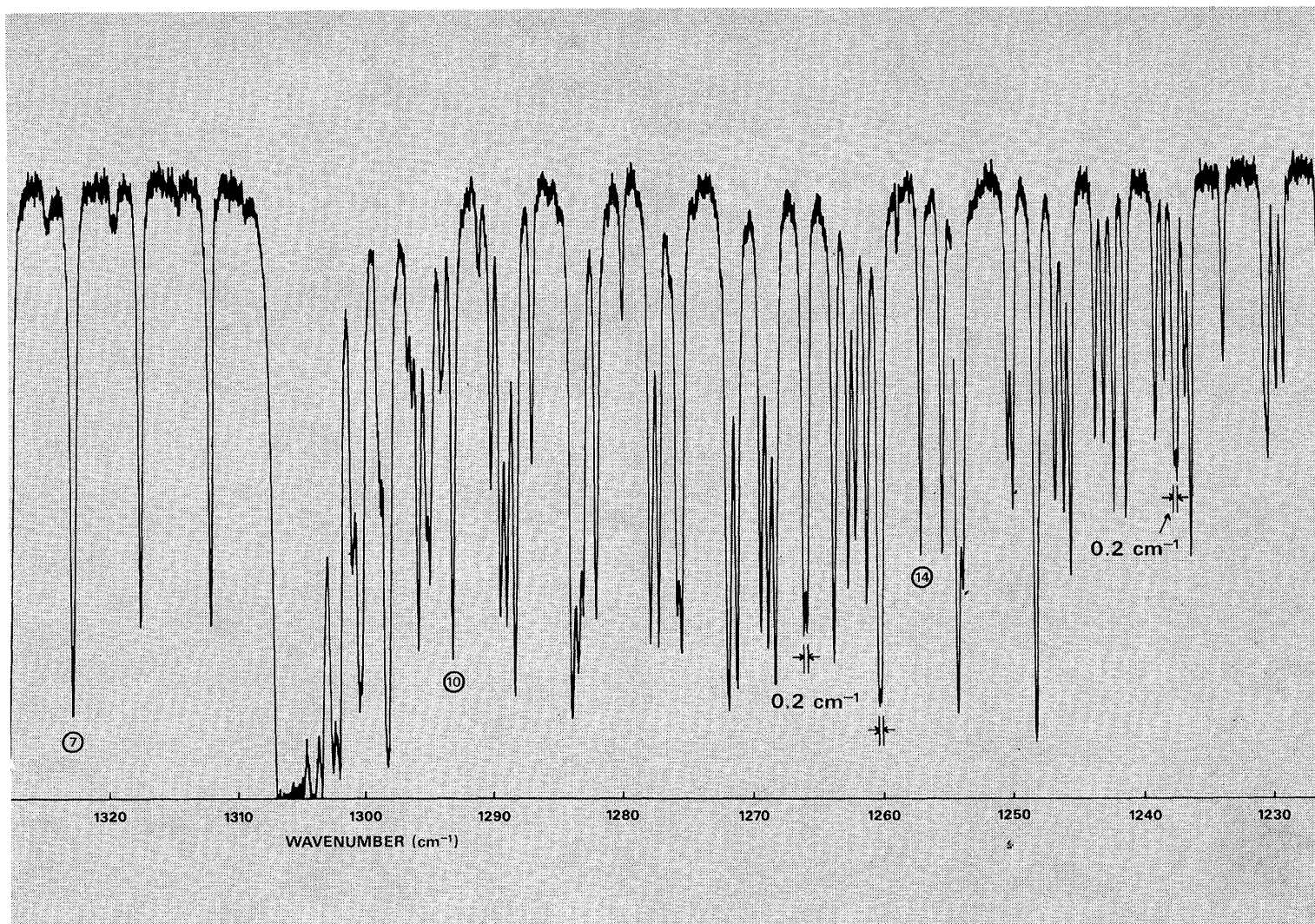


MICRO STUDY of 9 micrograms of carbazole was obtained in routine fashion on a 1 x 1 mm KBr pellet utilizing the Beckman Beam Condenser and Micro Pellet Holder. The energy lost because of the use of beam condensing optics and sample beam masking is readily regained at only a slight loss in resolution by operating the instrument at a slightly wider slit program. Even greater sensitivity can be obtained with the use of ordinate scale expansion; samples as small as 0.4 micrograms are examined in this manner.



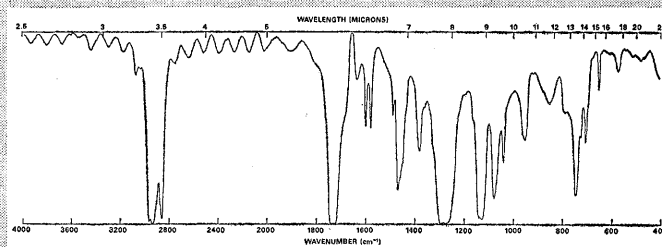
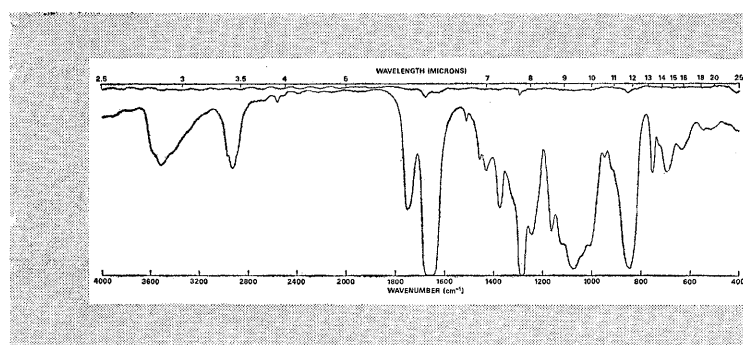
TRACE GAS STUDY of 40 mm of natural gas utilizes the Variable Path Gas Cell. Only methane is observed at a path length of 10 cm (top curve). Lower concentration components appear when path length is increased to 10 meters (bottom curve). One band of propane near 1050 cm^{-1} is shown at the left, scale expanded 10 times at a high signal-to-noise ratio allowing even more precise measurement. Often, in strongly absorbing trace gases, sensitivity in the hundredths of a part per million range is realized.

The Beckman IR-9 offers you the highest resolution of any commercial infrared spectrophotometer. However, many analyses do not require full utilization of this capability. Sample characteristics or the method of investigation may dictate the need for a higher level of energy. That is when you can trade the IR-9's exceptionally high resolution for increased energy. The IR-9 provides the best possible compromise between resolution and energy for any study. For information, contact your Beckman Sales Engineer or write for Data File LIR-38-264.



slit width is estimated to be 0.2 cm^{-1} or less as judged from the spacing of the doublets at 1237 , 1260 and 1266 cm^{-1} . This run also illustrates the high frequency accuracy capabilities of the IR-9.

Bands labelled 1, 7, 10 and 14 on this scan agree without prior instrument calibration to within 0.4 cm^{-1} of the accepted values similarly identified and published by IUPAC(1).



DIFFERENTIAL STUDY illustrates the ability of the IR-9 infrared spectrophotometer to compensate for tremendous variations in reference beam energy. A sample of di-octyl phthalate deposited on a cellulose nitrate-acetate membrane filter is examined by compensating for the filter material's absorption spectrum. This is accomplished by placing a matching thickness of filter in the reference beam (2). The bottom curve on the scan at the left is that of a 25 micron thickness of the filter. The top curve is the

background obtained when matching filters are placed in both sample and reference beams. The filters are retained in both beams to obtain the actual differential scan at the right, showing the spectra of 3 microliters of ester deposited on filter in the sample beam. Differential work is done simply and conveniently with the use of Automatic Slit Control, an exclusive Beckman feature providing an automatic means for obtaining an optimum preset compromise between resolution and energy throughout the entire scan.

(1) International Union of Pure and Applied Chemistry, Commission on Molecular Structure and Spectroscopy, "Tables of Wavenumbers for the Calibration of Infrared Spectrometers," pp. 586, 587, Butterworth, Inc., Washington, 1961.

(2) Sloane, H.J., *Anal. Chem.*, **35**, 1556 (1963).

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Porta-Stir comes complete with three 1½ volt nickel-cadmium batteries, built-in charger, removable line cord and 1½ inch long LaPine LOZENGE® Teflon*-covered magnetic stirring bar. The price, \$45.00. About \$10 more than ordinary magnetic stirrers. Well worth it, isn't it?

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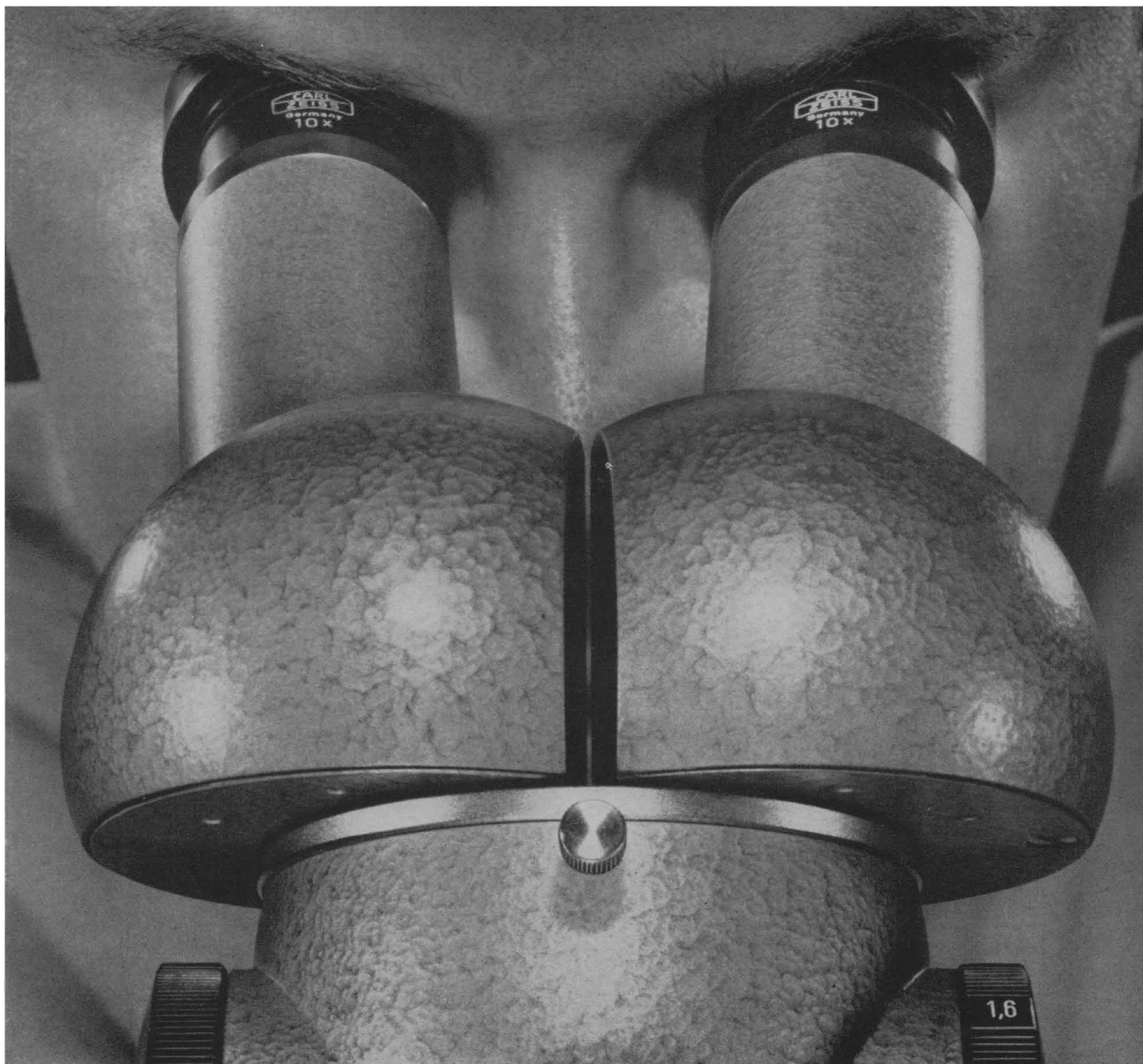
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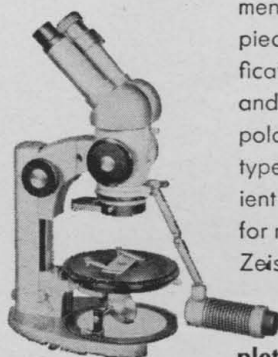


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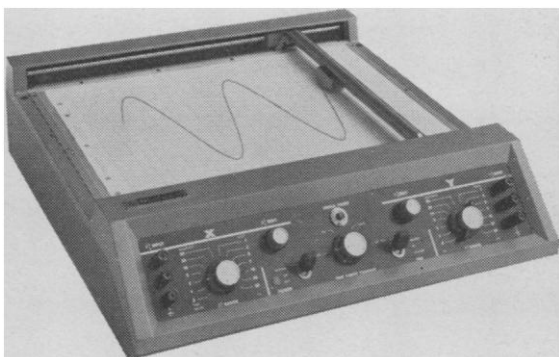
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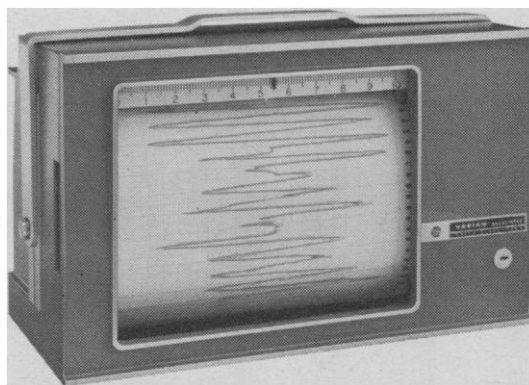
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- bench-top or rack mounting

Varian makes two models of this superior X-Y recorder: The F-80 (shown above), with automatic-cycling time base — \$2025; the F-81, without time base — \$1875. ■ For further information or a demonstration, write RECORDER DIVISION.



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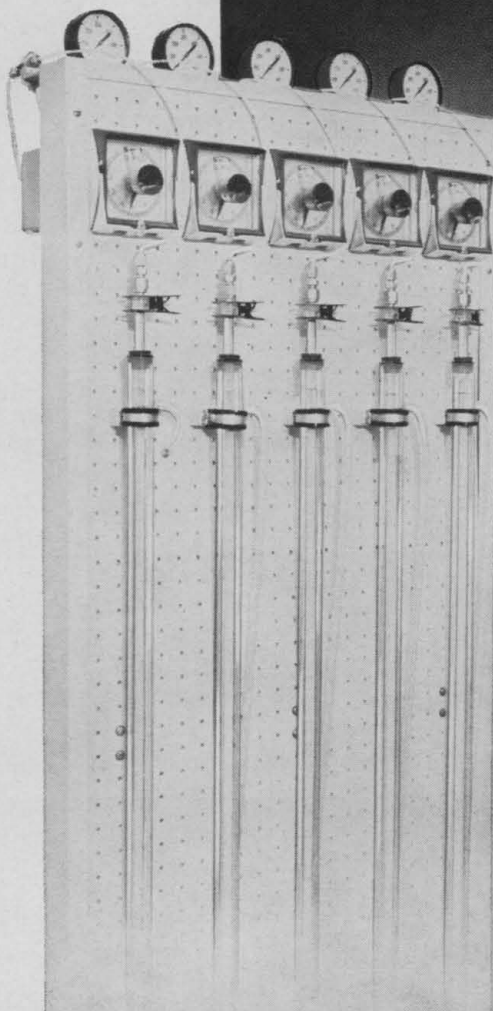
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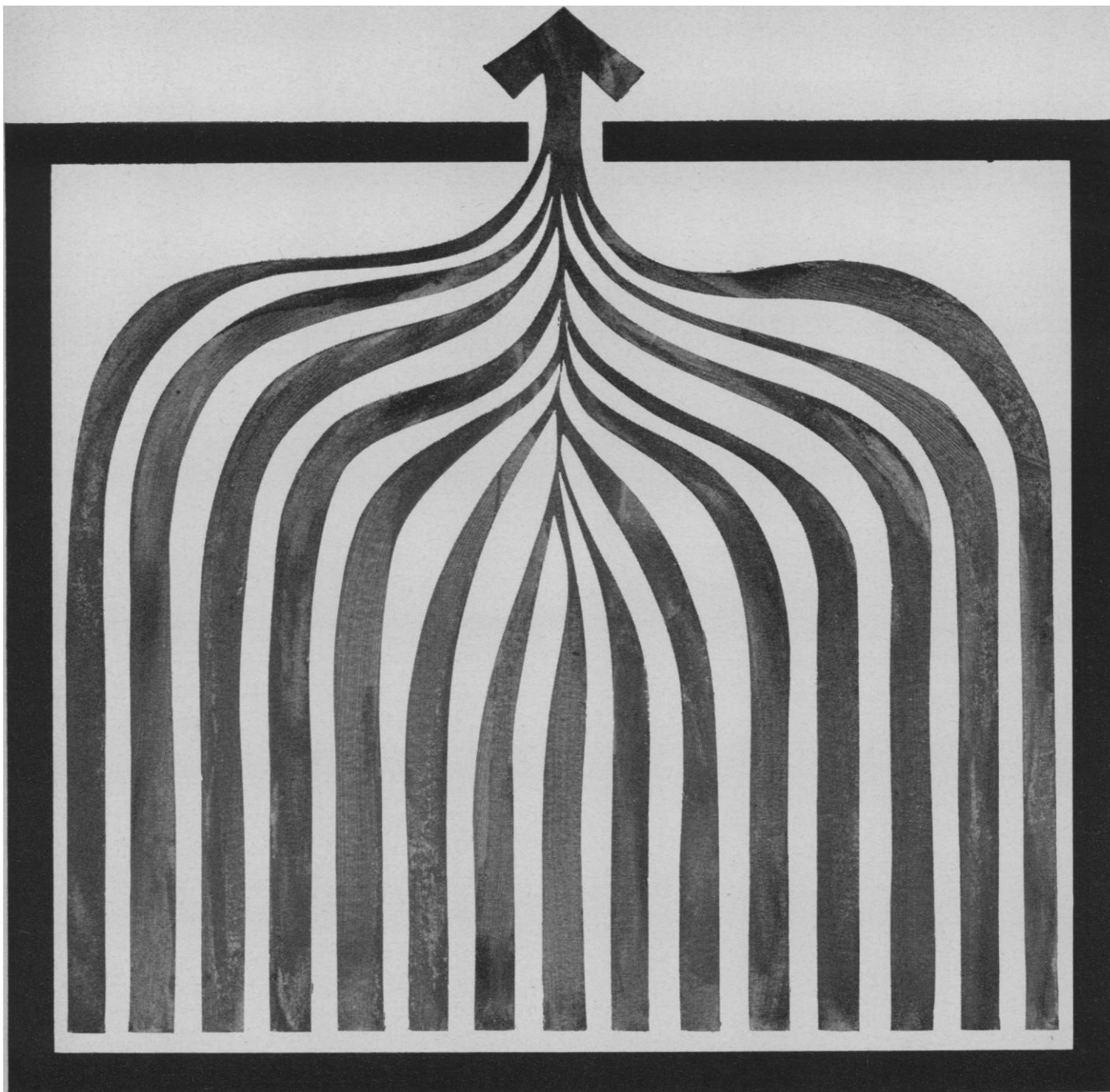
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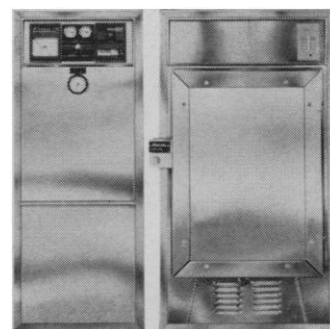


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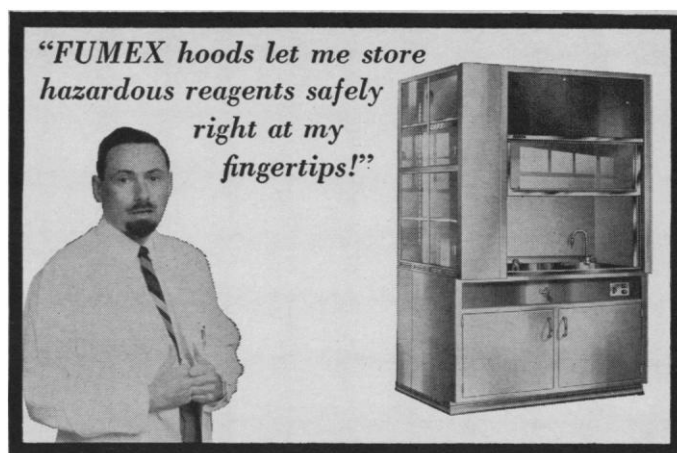


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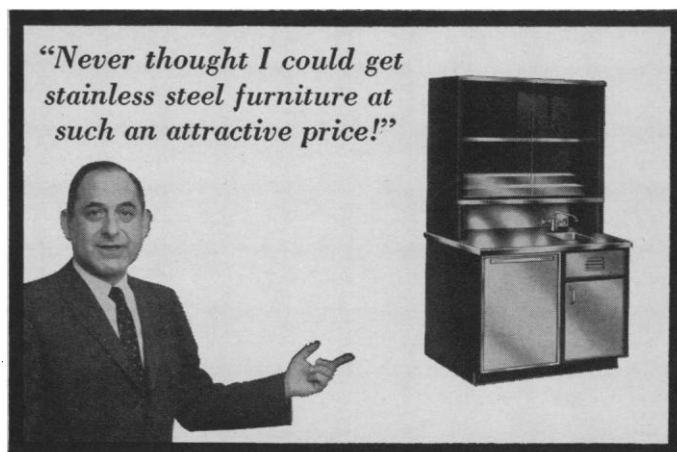
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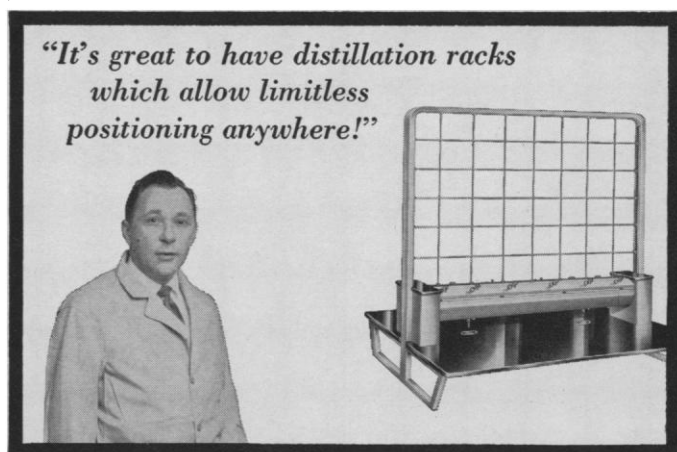
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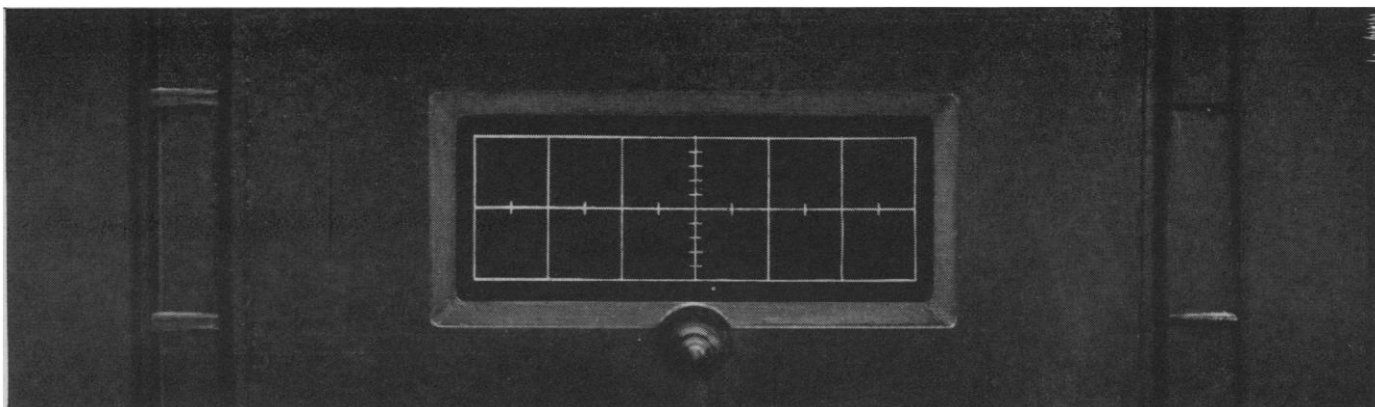
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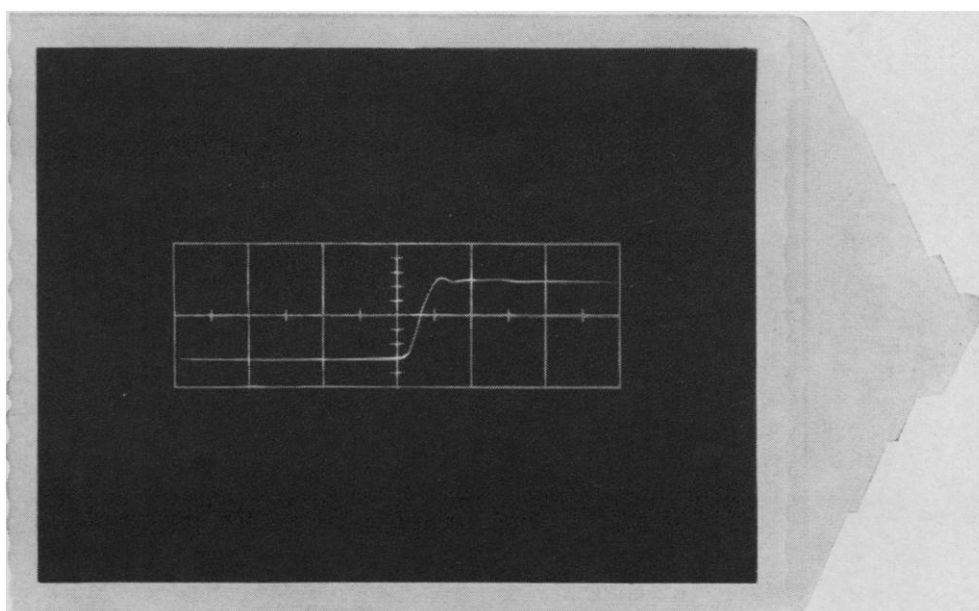
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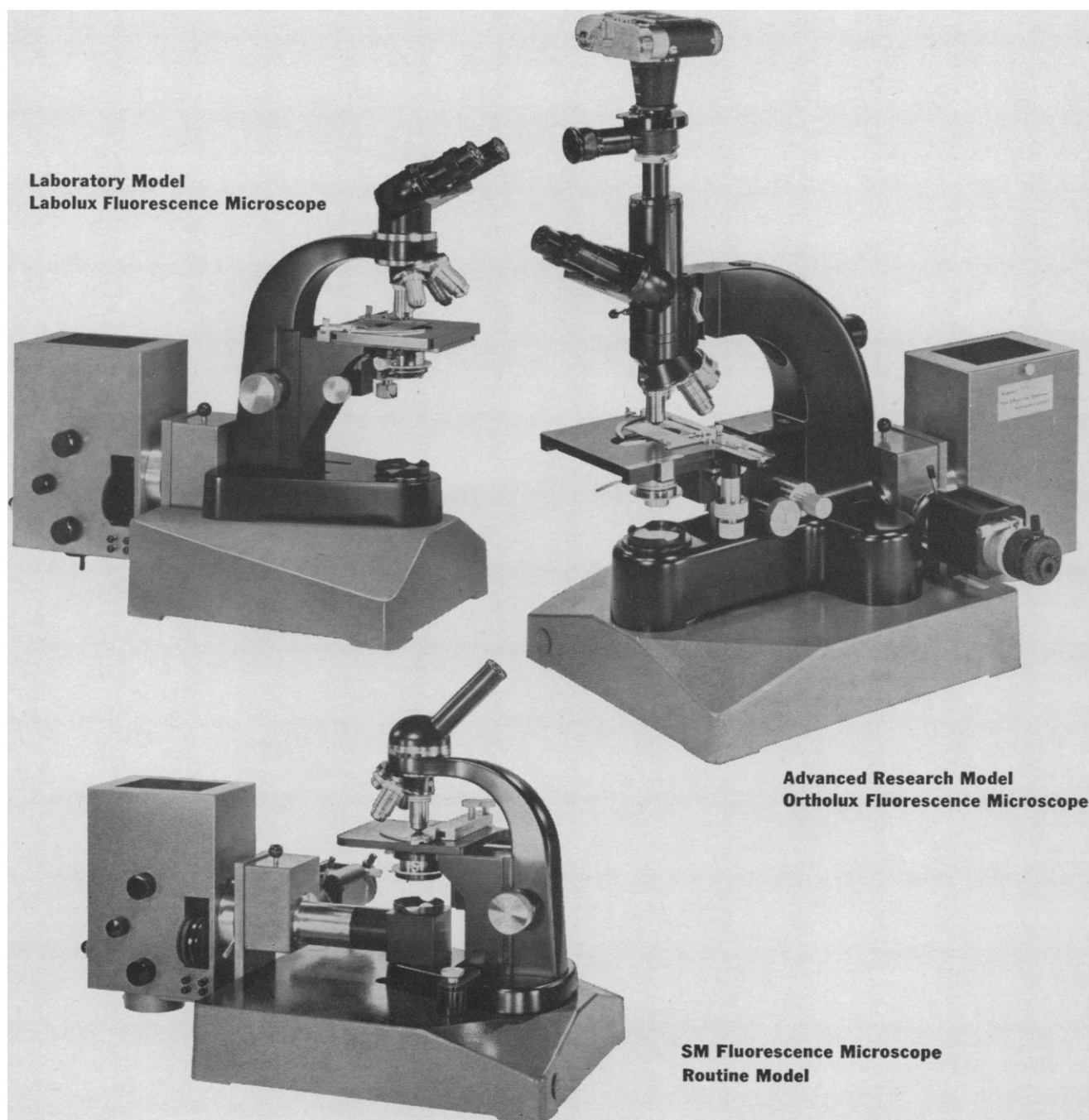
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Some Perils of Authorship

When scientists collaborate on a paper, jealousy, grievance, and misunderstanding can seriously threaten the team effort. Few believe that authorship should not be acknowledged at all; authors enjoy seeing their names in print, and parts of their careers depend upon it. This being so, let us look at a few current practices regarding authorship that may lead to misunderstanding.

How should the authors' names be arranged? Some men almost routinely put their names first if they are the head of the laboratory. They may have done none of the so-called "bench work," but that does not matter. There can be no doubt that many an author has gotten kudos and a large reputation as a result of always being the "first" author. The other extreme is the man who is always listed last, or whose name does not appear at all.

There is thus created much misunderstanding of the significance of the arrangement of authors' names. We are apt to surmise that the first-named author did the work, that it was his own special idea, or that he was young and needed the push.

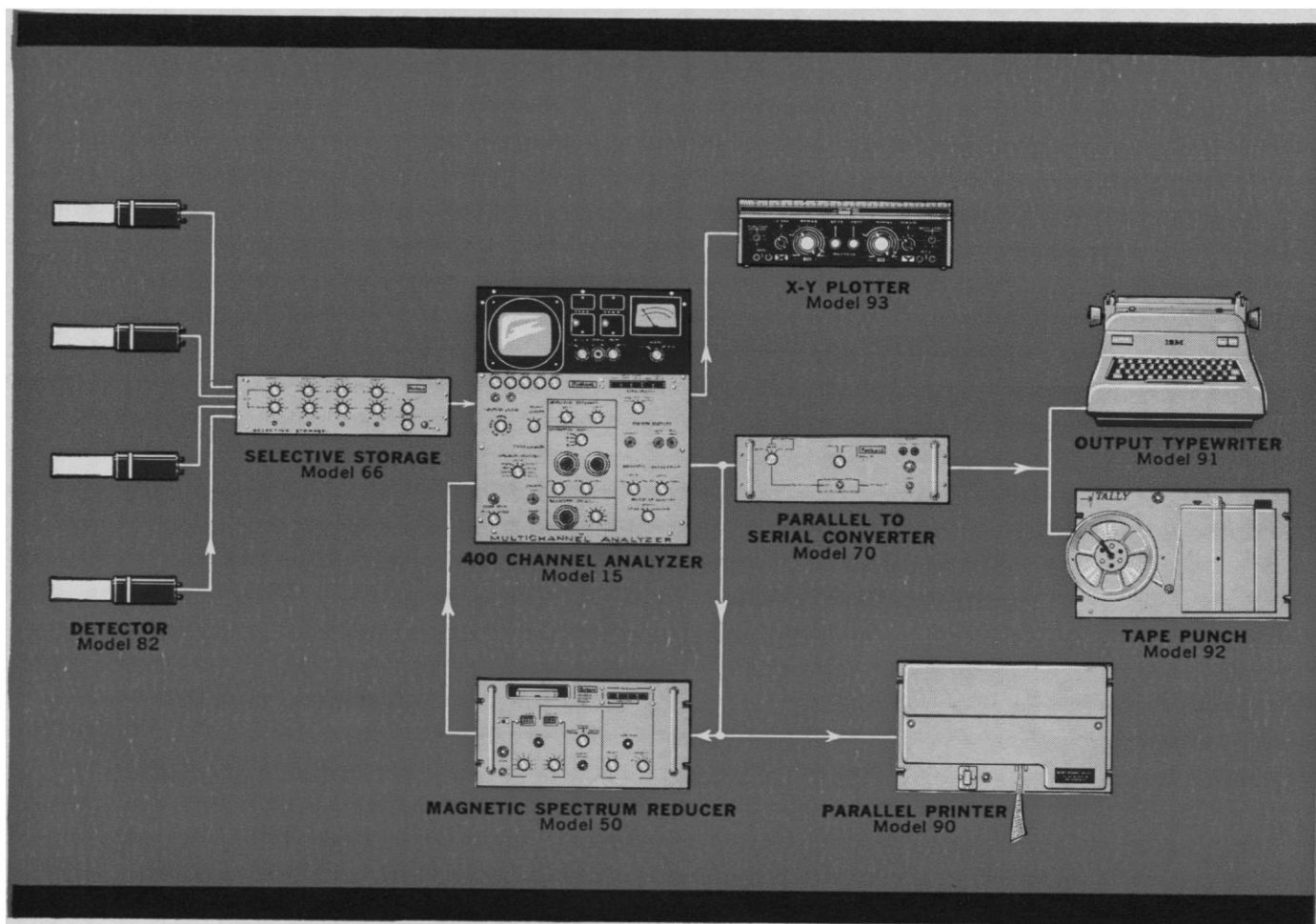
The problem of how many names to include and of the individual's position within a laboratory or clinic has been another source of trouble. Some journals simply refuse to accept a paper with more than three or four names. Others will take ten or more. Some laboratories include names of technicians or medical students, and others do not.

Editors of journals have created a jungle in regard to authorship by having no uniform system of citation in the body of an article or in the bibliography. Some American journals and authors cut references to a bare and arbitrary minimum and give the citation only by number. A few journals not only limit the number of references arbitrarily but refer in both text and bibliography only to the first author; the rest automatically become "*et al.*" This could guarantee anonymity for everyone but the one who heads the list.

These problems have caused me more conscience-searching and concern than any other scientific activity of which I can think. I have no complete answers, but I do have some suggestions.

The order of names in a by-line is important and should be agreed on before the manuscript is written. The first author should be the one most intimately concerned with both the work and the writing. This does not mean that he alone is responsible. All the authors must be capable of assuming full responsibility for the results, their presentation, and their interpretation. Authorship should not be made so diffuse, through inclusion of every possible participant, technical or otherwise, that it becomes meaningless. Editors should recognize that all authors of a manuscript are concerned to varying degrees with important aspects of the work. Consequently their names should not be relegated to limbo by use of "*et al.*" Given the opportunity, and a little experience, most people turn out to be fair. Observance of these principles should encourage cooperation among colleagues.

—IRVINE H. PAGE, *Cleveland Clinic, Cleveland, Ohio.*



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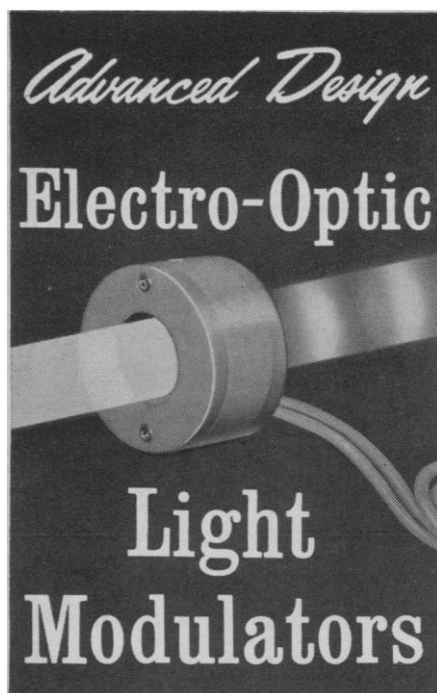
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15-18. American Soc. for Public Administration, natl. conf., New York, N.Y. (ASPA, 6042 Kimbark Ave., Chicago, Ill.)

15-18. International Scientific Radio Union (URSI), spring meeting, Washington, D.C. (M. G. Morgan, U.S. Natl. Committee, URSI, Dartmouth College, Hanover, N.H.)

16-17. Fiber Soc., spring meeting, Charlotte, N.C. (I. Rebenfeld, P.O. Box 625, Princeton, N.J.)

16-17. Textile Inst., annual conf., Leeds, England (D. B. Moore, 10 Blackfriars St., Manchester 3, England)

16-18. Eastern Psychological Assoc., Philadelphia, Pa. (M. A. Iverson, Queens College, Flushing 67, N.Y.)

16-18. Teaching of Foreign Languages, 1964 northeastern conf., Washington, D.C. (S. Isaacs, 1110 Patterson Plank Rd., North Bergen, N.J.)

16-18. Western Psychological Assoc., annual, Portland, Ore. (J. Matarazzo, Univ. of Oregon Medical School, Portland)

16-19. Cooper Ornithological Soc., annual, San Diego, Calif. (C. V. Duff, 2911 Antelo View Dr., Los Angeles 24, Calif.)

17-18. Arkansas Acad. of Science, Conway. (R. R. Corey, Dept. of Botany and Bacteriology, Univ. of Arkansas, Fayetteville)

17-18. Iowa Acad. of Science, Decorah. (D. C. Foley, Iowa State Univ., Ames)

17-18. Resonance Physics, New York State section, American Physical Soc., Corning, N.Y. (J. T. Kerr, Corning Glass Works, Corning)

17-19. Association of Southeastern Biologists, 25th annual, Atlanta, Ga. (W. D. Burbanck, Dept. of Biology, Emory Univ., Atlanta)

18-23. American Ceramic Soc., 66th annual, Chicago, Ill. (ACeS, 4055 N. High St., Columbus 14, Ohio)

19-22. Association for Educational Data Systems, natl. conv., Santa Barbara, Calif. (J. Caffrey, Systems Development Corp., Santa Monica)

19-22. American Oil Chemists' Soc., 55th spring meeting, New Orleans, La. (AOCS, 35 E. Wacker Dr., Chicago 1, Ill.)

19-25. Aerospace Electrotechnology, intern. conf., Phoenix, Ariz. (A. A. Sorensen, Mail 3016, The Martin Co., Baltimore 3, Md.)

20-21. Solar-Terrestrial Relationships, symp. of Intern. Scientific Radio Union, American Geophysical Union, American Astronomical Soc., Washington, D.C. (M. G. Morgan, U.S. Natl. Committee, URSI, Dartmouth College, Hanover, N.H.)

20-22. Radioisotope Conf., 2nd annual, Gatlinburg, Tenn. (R. T. Overman, Special Training Div., Oak Ridge Inst. of Nuclear Studies, P.O. Box 117, Oak Ridge, Tenn.)

20-23. American Mathematical Soc., New York, N.Y. (G. L. Walker AMS, 190 Hope St., Providence, R.I.)

20-24. Medical Radioisotope Scanning, symp., Athens, Greece. (E. H. Belcher, Div. of Isotopes, IAEA, Kärlntnerring 11, Vienna 1, Austria)

20-24. Research Administration Inst., American Univ., Washington, D.C. (American Univ., 1901 F St., NW, Washington 6, D.C.)

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20-24. Fluid Dynamic Aspects of **Space Flight**, Marseilles, France. (Fluid Dynamics Panel, NATO, 64, rue de Varenne, Paris 7^e, France)

20-24. American Soc. of **Tool and Manufacturing Engineers**, annual, Detroit, Mich. (L. S. Fletcher, ASTM, 10700 Puritan Ave., Detroit 38)

20-25. American Acad. of **Neurology**, 16th annual, Denver, Colo. (AAN, 4307 E. 50 St., Minneapolis 17, Minn.)

21. Association for **Symbolic Logic**, New York, N.Y. (Mrs. R. Drew-Bear, Special Projects Dept., American Mathematical Soc., 190 Hope St., Providence, R.I.)

21-23. Joint **Computer** conf., Washington, D.C. (C. S. Jones, 8227 Woodmont Ave., Bethesda 14, Md.)

21-23. **Engineering with Nuclear Explosives**, 3rd "Plowshare" symp., Davis, Calif. (Plowshare Symp. Committee, Lawrence Radiation Laboratory, Building T-105, P.O. Box 808, Livermore, Calif.)

21-24. American **Geophysical Union**, Washington, D.C. (AGU, 1515 Massachusetts Ave., NW, Washington, D.C.)

21-30. **Seismology**, intergovernmental meeting, Paris, France. (UNESCO, Place de Fontenoy, Paris 7^e)

22-24. Institute of **Electrical and Electronics Engineers**, 16th annual southwestern conf., Dallas, Tex. (F. E. Brooks, Jr., Military Electronics Div., Ling Temco Vought, P.O. Box 6118, Dallas 75222)

22-24. British Inst. of **Radiology**, 25th congr., London, England (BIR, 32 Welbeck St., London, W.1)

22-25. National Council of **Teachers of Mathematics**, Miami Beach, Fla. (H. T. Karnes, Dept. of Mathematics, Louisiana State Univ., Baton Rouge 3)

23-25. American **Gastroenterological** Conv., Philadelphia, Pa. (C. E. Nelson, 313 N. First St., Ann Arbor, Mich.)

28-1. Dallas-Southwest **Industrial Trade** Fair, Dallas, Tex. (C. L. Wells, P.O. Box 26010, Dallas 26)

29-1. **Acoustical Fatigue**, 2nd intern. conf., Dayton, Ohio (D. M. Forney, Research and Technology Div., U.S. Air Force Systems Command, Wright-Patterson Air Force Base, Dayton)

29-2. **Peaceful Uses of Space**, 4th natl. conf., Boston, Mass. (G. A. Rogovin, 501 Boylston St., Boston 16)

29-2. American **Thyroid** Assoc., annual, Rochester, Minn. (T. Winship, ATA, 110 Irving St., NW, Washington, D.C. 20010)

30-1. Institute of **Hospital Administrators**, annual, Edinburgh, Scotland. (IHA, 75 Portland Place, London, W.C.1, England)

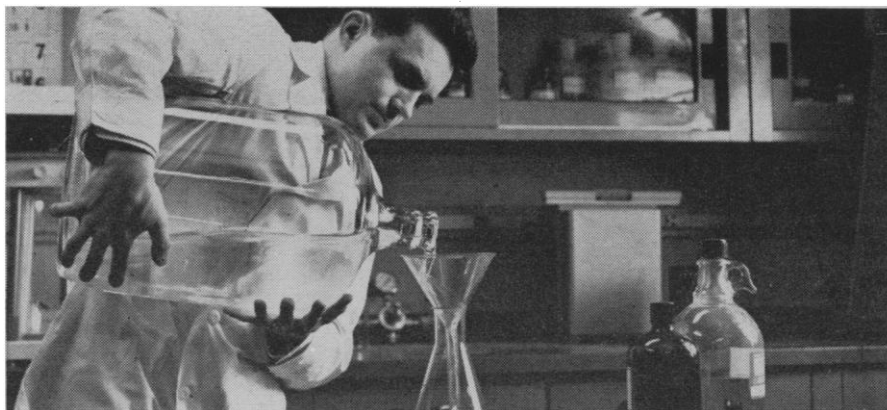
30-1. **Zonal Centrifugation Systems**, Oak Ridge, Tenn. (F. C. Von der Lage, Office of Industrial Cooperation, Oak Ridge Natl. Laboratory, P.O. Box X, Oak Ridge, Tenn. 37831)

30-2. **Agricultural History** Soc., annual, Cleveland, Ohio (A. G. Bogue, History Dept., Univ. of Iowa, Iowa City)

30-2. American **Cleft Palate** Assoc., 22nd annual, Los Angeles, Calif. (ACPA, Parker Hall, Univ. of Missouri, Columbia 65202)

30-2. **Midwestern Psychological** Assoc., 36th annual, St. Louis, Mo. (F. A. Mote, Psychology Dept., Univ. of Wisconsin, Madison 53706)

10 APRIL 1964



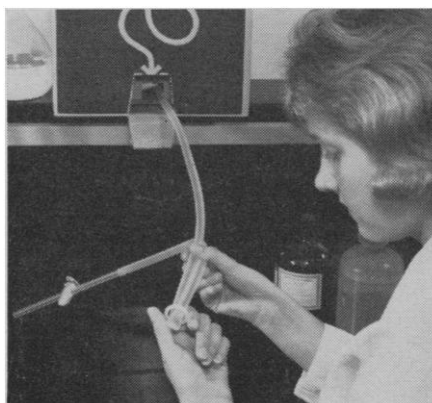
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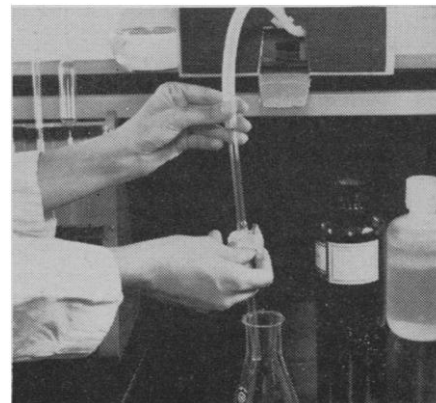
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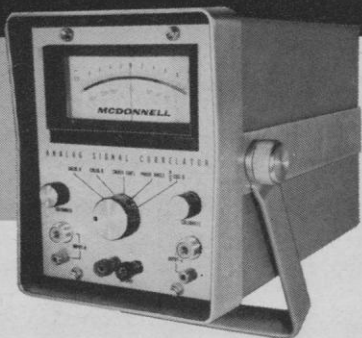
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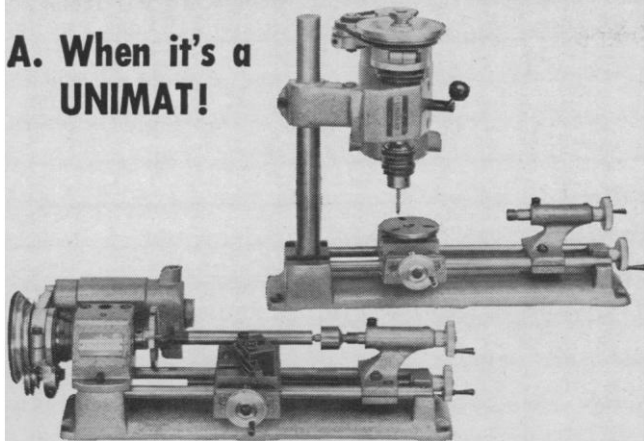
- 30-3. Wilson Ornithological Soc., Kalamazoo, Mich. (P. B. Hofslund, Biology Dept., Univ. of Minnesota, Duluth)
30-6. Mexican Natl. Acad. of Medicine, Mexico City. (A. Lavarez-Bravo, Unidad de Congresos del Centro Mexico, Bloque "B", Av. Chauhtenoc 330, Mexico, D.F.)

May

1. Chemical Inst. of Canada, Rubber Chemistry Div., annual, Niagara Falls, Ont. (CIC, 48 Rideau St., Ottawa, Ont.)
1-2. American Type Culture Collection, Washington, D.C. (W. A. Clark, 12301 Parklawn Dr., Rockville, Md.)
1-2. Association of Clinical Scientists, Philadelphia, Pa. (R. P. MacFate, 54 W. Hubbard St., Chicago, Ill. 60610)
1-2. Minnesota Acad. of Science, Moorhead. (M. R. Boudrye, 3100 38th Ave. S., Minneapolis 6, Minn.)
1-2. Nebraska Acad. of Sciences, Lincoln. (C. B. Schultz, 101 Morrill Hall, Univ. of Nebraska, Lincoln 8)
1-2. North Dakota Acad. of Science, Fargo. (B. G. Gustafson, Univ. of North Dakota, Extension Div., Grand Forks)
1-3. Society of Biological Psychiatry, Los Angeles, Calif. (H. E. Himwich, SBP, Galesburg State Research Hospital, Galesburg, Ill.)
1-4. American Psychoanalytic Assoc., annual, Los Angeles, Calif. (Mrs. H. Fischer, APA, 1 E. 57 St., New York N.Y. 10022)
2-3. Academy of Psychoanalysis, annual, Los Angeles, Calif. (J. R. Royce, The Academy, 125 E. 65 St., New York, N.Y. 10021)
3-7. Electrochemical Society, spring meeting, Toronto, Ont., Canada. (ES, 30 E. 42 St., New York, N.Y. 10017)
3-7. American Soc. for Microbiology, annual, Washington, D.C. (American Inst. of Microbiology, 115 Huron View Blvd., Ann Arbor, Mich.)
3-9. Medical Biological Congr., Mutters, Austria. (P. Newhaüser, Abilindastr. 52a, München-Gräffelfing, Germany)
4-5. Bioengineering, 1st annual Rocky Mountain symp., U.S. Air Force Acad., Colorado Springs, Colo. (R. J. Gowan, Dept. of Electrical Engineering, U.S. Air Force Acad., Colorado Springs 80840)
4-5. Chemical and Petroleum Instrumentation, 5th natl. symp., Instrument Soc. of America, Wilmington, Del. (G. H. Robinson, Engineering Dept., E. I. duPont de Nemours Co., Wilmington)
4-6. Instrument Soc. of America, Biomedical Sciences Div., 2nd natl. symp., Albuquerque, N.M. (R. F. Rust, Brooks, Feeger Assoc., 1238 Ortiz S.E., Albuquerque)
4-6. American Inst. of Aeronautics and Astronautics, Aerospace Propulsion meeting, Cleveland, Ohio. (AIAA, 500 Fifth Ave., New York, N.Y. 10036)
4-6. Aerospace Instrumentation, 10th natl. symp., Instrument Soc. of America, New York, N.Y. (ISA, 530 William Penn Pl., Pittsburgh 19, Pa.)
4-6. Asymptotic Solutions of Differential Equations and Their Applications, symp., Madison, Wis. (C. Wilcox, Mathematics Research Center, Univ. of Wisconsin, Madison 53706)
4-6. American Soc. for Quality Con-

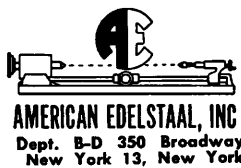
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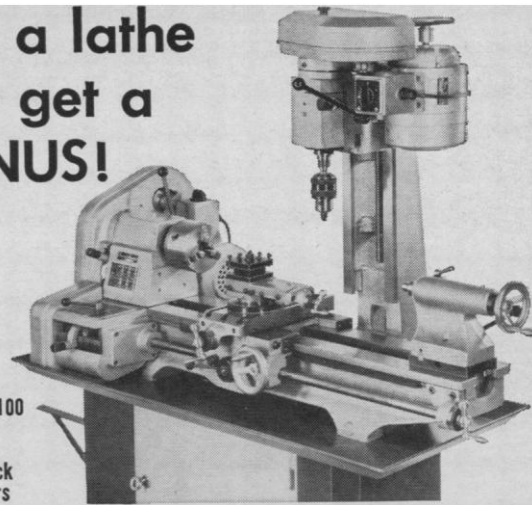


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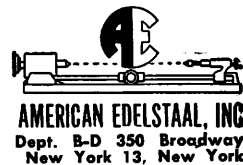


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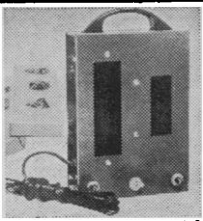
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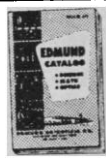
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trol, 18th annual conv., Buffalo, N.Y. (ASQC, 161 West Wisconsin Ave., Milwaukee 3, Wis.)

4-6. Inhaled Radioactive Particles and Gases, symp., Richland, Wash. (W. J. Bair, Biology Laboratory, Hanford Laboratories, Richland, Wash.)

4-7. Biomedical Sciences Instrumentation, 2nd natl. symp., Instrument Soc. of America, Univ. of New Mexico, Albuquerque. (P. F. Salisbury, St. Joseph Hospital, 501 S. Buena Vista St., Burbank, Calif.)

4-8. American Psychiatric Assoc., 120th annual, Los Angeles, Calif. (W. E. Barton, 1700 18th St., NW, Washington, D.C.)

4-8. Strata Control and Rock Mechanics intern. conf., New York, N.Y. (S. Boshkov, School of Mines, Columbia Univ., New York, N.Y.)

4-22. United Nations Commission on Narcotic Drugs, 19th session, Geneva, Switzerland. (UN, Palais des Nations, Geneva)

5-6. Human Factors in Electronics, 5th natl. symp., San Diego, Calif. (M. Freitag, 1910 Shire Dr., El Cajon, Calif.)

5-7. Electronic Components Conf., Washington D.C. (J. Bohrer, 401 N. Broad St., Philadelphia, Pa.)

5-9. Nuclear Radiation Hazards, intern. symp., Intern. Civil Defence Organization, Monaco. (ICDO, 28 avenue Pictet-de-Rochemont, Geneva, Switzerland)

5-9. Virginia Acad. of Science, Charlottesville. (R. C. Berry, P.O. Box 8315, Richmond, Va.)

6-7. Laser/Electron Beam, seminar, Chicago, Ill. (R. Aptekar, Information Services Dept., American Soc. of Tool and Manufacturing Engineers, 10700 Puritan Ave., Detroit, Mich. 48238)

6-7. Optical Masers Symp., Toronto, Ont., Canada. (R. N. Hall, General Electric Research Laboratory, P.O. Box 1088, Schenectady, N.Y.)

6-8. American Assoc. of Genito-urinary Surgeons, Rye, N.Y. (2020 93rd St., Cleveland 6, Ohio)

6-8. Psychosomatic Research, European conf., Athens, Greece. [G. S. Philippopoulos, 4 Monis Petraki St., Athens (140)]

6-8. Society for Experimental Stress Analysis, spring meeting, Salt Lake City, Utah. (B. E. Bossi, 21 Bridge Sq. Westport, Conn.)

6-9. Acoustical Soc. of America, 66th spring meeting, New York, N.Y. (W. Waterfall, 335 E. 45 St., New York, N.Y.)

7-8. Vacuum Microbalance Techniques, 4th conf., Pittsburgh, Pa. (F. A. Brassart, Westinghouse Research and Development Center, Beulah Rd., Pittsburgh 35)

7-8. International College of Surgeons, British section, summer meeting, London. (Secretariat, 1516 Lake Shore Dr., Chicago, Ill. 60610)

7-9. Society for American Archaeology, 30th annual, Chapel Hill, N.C. (W. H. Sears, Florida State Museum, Gainesville)

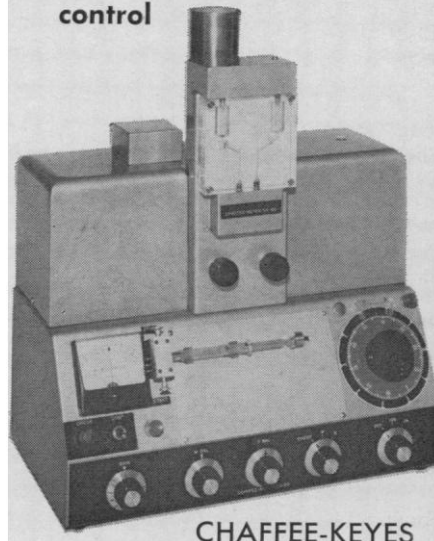
7-9. Society of Neurological Surgeons, Rochester, Minn. (SNS, Duke Univ. Medical Center, Durham, N.C.)

7-10. International Assoc. for Bronchology, 14th congr., Vienna, Austria. (Secretariat, Vienna Acad. of Medicine, 4, Alserstr., Vienna 9)

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8-9. **Colorado-Wyoming Acad. of Science**, Denver, Colo. (Mrs. C. Norton, Dept. of Botany, Colorado State Univ., Fort Collins)

8-9. **North Carolina Acad. of Science**, Davidson. (J. A. Yarbrough, Meredith College, Raleigh, N.C.)

8-9. **Surgical Research Soc.**, Sheffield, England. (A. P. M. Forrest, Surgical Unit, Cardiff Royal Infirmary, Newport Rd., Cardiff, South Wales)

8-9. **Surface Physics**, Washington State Univ. Pullman. (E. E. Donaldson, Physics Dept., Washington State Univ., Pullman)

8-20. **Space Research**, 7th plenary meeting, ICSU committee, Florence, Italy. (E. R. Dyer, Jr., National Acad. of Sciences-National Research Council, 2101 Constitution Ave., Washington, D.C.)

10-14. **Cardiology**, 3rd Asian-Pacific Congr., Kyoto, Japan. (S. Hayase, Medical Clinic, Kyoto Univ. Hospital, Sakyo-ku, Kyoto)

10-14. **French Soc. of Ophthalmology**, 71st Congr., Paris. (M. A. Dollfus, Société Française d'Ophthalmologie, 27, rue du Faubourg-Saint-Jacques, Paris 16*)

10-14. **American Proctologic Soc.**, Philadelphia, Pa. (APS, 7815 East Jefferson, Detroit 14, Mich.)

10-15. **Photographic Science and Engineering**, intern. conf., Palisades Park, N.J. (Executive Secretary, Soc. of Photographic Scientists and Engineers, Box 1609, Main Post Office, Washington, D.C.)

11-13. **Aerospace Electronics**, 16th natl. conf., Dayton, Ohio. (Y. Jacobs, 1917 Burbank Dr., Dayton 45406)

11-14. **Society for Industrial and Applied Mathematics**, spring meeting, Washington, D.C. (SIAM, Box 7541, Philadelphia 1, Pa.)

11-14. **American Urological Assoc.**, annual, Pittsburgh, Pa., (AUA, 1120 North Charles St., Baltimore, Md.)

11-16. **Assessment of Radioactive Body Burdens in Man**, symp., IAEA, Heidelberg, Germany. (IAEA, Div. of Public Information Kärntnering 11, Vienna, Austria.)

11-14. **Aerospace Medical Assoc.**, 35th annual, Bal Harbour, Fla. (W. J. Kennard, c/o Washington Natl. Airport, Washington, D.C. 20001)

11-14. **Biological Editors**, conf., Ann Arbor, Mich. (R. L. Zwemer, Committee on European Editors, c/o American Physiological Soc., 9650 Wisconsin Ave., Bethesda, Md. 20014)

11-16. **International College of Surgeons**, 14th intern. Congr., Vienna, Austria. (S. E. Henwood, 1516 Lake Shore Dr., Chicago, Ill. 60610)

12. **American Inst. of Chemical Engineers**, tri-sectional symp., Newark, N.J. (R. H. Dodds, Gibbs & Hill, Inc., 393 Seventh Ave., New York, N.Y.)

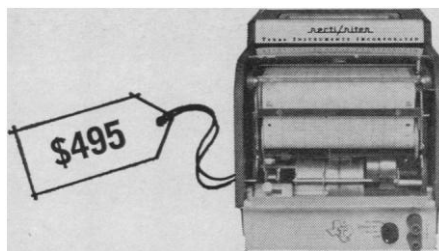
13-14. **Society of Plastics Engineers**, plastics in space, conf., Garden City, N.J. (D. Hassel, Grumman Aircraft Engineering Corp., Bethpage, L.I., N.Y.)

13-15. **Biomathematics and Computer Science in the Life Sciences**, 2nd annual symp., Houston, Tex. (Univ. of Texas Graduate School of Biomedical Sciences, 102 Jesse Jones Bldg., Texas Medical Center, Houston 77025)

13-15. **Society of Professional Well Log Analysts**, 5th intern. symp., Midland,

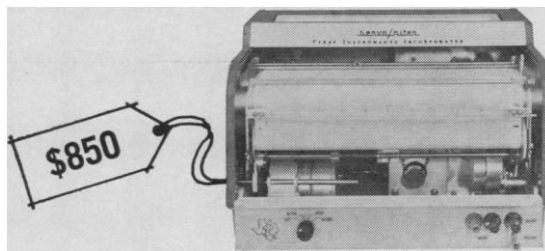
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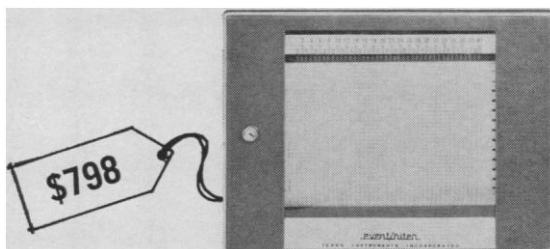
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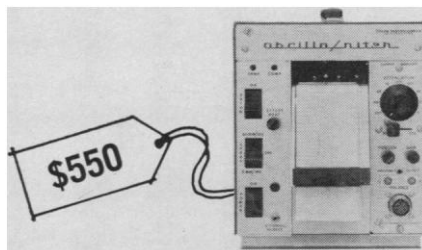
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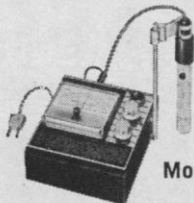
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14-15. **Radiochemical Processing Symp.**, Buffalo, N.Y. (R. F. Lumb, Western New York Nuclear Research Center, Power Drive, Buffalo 14214)

14-15. **Scandinavian Biochemistry Meeting**, Stockholm, Sweden. (Sveriges Biokemiska Körenig, Karolinska Inst., Stockholm 60)

14-16. **American Inst. of Industrial Engineers**, 15th annual conf., Philadelphia, Pa. (W. J. Jaffe, Dept. of Management Engineering, Newark College of Engineering, Newark, N.J.)

14-16. **Central States Anthropological Soc.**, annual, Milwaukee, Wis. (N. O. Lurie, Dept. of Anthropology, Univ. of Wisconsin, Milwaukee 11)

14-16. **Society of Technical Writers and Publishers**, 11th annual conv., San Diego, Calif. (C. M. Johnson, U.S. Navy Electronics Laboratory, San Diego 92132)

16-2. **European Energy Conf.**, Paris, France. (H. Perdon, Institut Français des Combustibles et de l'Energie, 3, rue Henri-Heine, Paris 16^e)

17-20. **American Inst. of Chemical Engineers**, natl. meeting, Pittsburgh, Pa. (F. J. Van Antwerpen, 345 E. 47 St., New York, N.Y. 10017)

18-20. **Radiation Research Soc.**, 12th annual, Miami Beach, Fla. (G. D. Adams, Radiological Laboratory, Univ. of California Medical Center, San Francisco 22)

18-20. **Water**, 2nd conf., Technical Assoc. of the Pulp and Paper Industry, Green Bay, Wis. (H. O. Teeple, TAPPI, 360 Lexington Ave., New York, N.Y.)

18-21. **Society of Economic Paleontologists and Mineralogists**, Toronto, Ont., Canada. (R. H. Dott, Box 979, Tulsa 1, Okla.)

18-21. **American Assoc. of Petroleum Geologists**, 49th annual conv., Toronto, Ont., Canada. (R. E. King, American Overseas Petroleum, Ltd., 485 Lexington Ave., New York, N.Y. 10017)

19-20. **Council on Medical Television**, 6th annual, Atlanta, Ga. (S. A. Agnello, Duke Univ. Medical Center, Box 3163, Durham, N.C. 27706)

19-21. **Microwave Theory and Techniques**, intern. symp., New York, N.Y. (H. L. Browman, Airborne Instruments Laboratory, Deer Park, N.Y. 11729)

19-22. **German Metallurgical Soc.**, general assembly, Bremen. (Deutsche Gesellschaft für Metallkunde, An der Alteburger Mühle 12, Köln-Marienburg, Germany)

19-22. **German Soc. for Applied Optics**, 65th, Gmunden am Traunsee. (H. Volkman, Deutsche Gesellschaft für Angewandte Optik, Zeppelinstr. 23, 7920 Heidenheim, Germany)

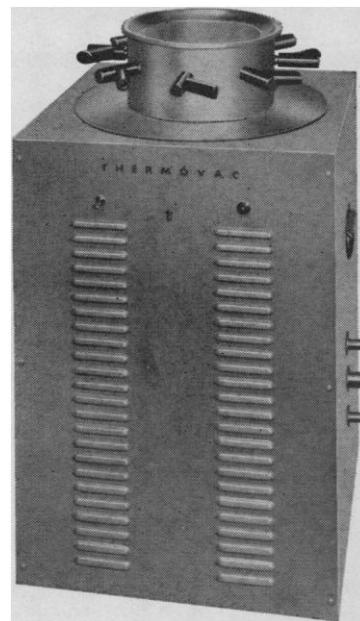
19-23. **Energy Metabolism**, 3rd symp., Ayr, Scotland. (European Assoc. for Animal Production, Corso Trieste, 67, Rome, Italy)

19-30. **International Electrotechnical Commission**, general meeting, Aix-les-Bains, France. (American Standard Assoc., 10 E. 40 St., New York 16)

20. **Memorial Hospital of Long Beach, medical staff symp.**, Long Beach, Calif. (G. X. Trimble, Memorial Hospital of Long Beach, 2801 Atlantic Ave., Long Beach 6)

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20-23. Canadian Assoc. of Geographers, 14th annual, London, Ont. (CAG, P.O. Box 421, Ottawa, Ont., Canada)

20-27. Air Pollution, European conf., Strasbourg, Austria (A. Stern, Div. of Air Pollution, U.S. Public Health Service, Washington, D.C. 20201)

20-28. Modern Methods for Analysis of Organic Compounds, symp., Eindhoven, Netherlands. (Gesellschaft Deutscher Chemiker, Postfach 9075, Frankfurt-am-Main, Germany)

21-22. American Geological Inst., Toronto, Ont., Canada. (D. M. Kinney, U.S. Geological Survey, Washington, D.C.)

21-22. Southern Textile Research Conf., Hilton Head Island, S.C. (American Assoc. of Textile Chemists and Colorists, P.O. Box 886, Durham, N.C.)

21-23. Minerals, 9th annual symp., Moab, Utah. (J. C. Fox, Soc. of Mining Engineers, 345 E. 47 St., New York, N.Y.)

21-23. California Soc. of Professional Engineers, annual, Palm Springs, Calif. (J. C. Huisking, 970 Hillcrest Dr., Pomona, Calif.)

23-24. Radiosensitizers and Radioprotective Drugs, 1st intern. symp., Milan, Italy. (R. Paoletti, Pharmacology Inst., Via A. del Sarto, 21, Milan)

24-28. Near and Middle East Medical conf., Istanbul, Turkey. (P. Ponthus, Institut de Radiologie et de Lutte Contre le Cancer, Hotel-Dieu de France, Beirut, Lebanon)

24-29. International Federation for Information Processing, global conf., New York, N.Y. (A. P. Speiser, I.B.M. Research Laboratory, Zurichstr. 108, Adliswil-Zurich, Switzerland)

25. Organic Solid State, 2nd symp., Franklin Inst., Philadelphia, Pa. (M. M. Labes, Franklin Inst. Laboratories, 20th and The Parkway, Philadelphia 3)

25-27. American Gynecological Soc., Hot Springs, Va. (AGS, 3800 Reservoir Rd., Washington, D.C. 20007)

25-27. Power Reactors and Radioisotopes, Canadian Nuclear Assoc., Toronto, Ont. (CNA, 19 Richmond St. West, Toronto 1, Ont.)

25-29. Society of Physical Chemistry, 14th annual, Bordeaux, France. (G. Emschwiller, Soc. de Chimie physique, 10, rue Vauquelin, Paris 5^e, France)

26-29. Water Studies, 17th intern. conf., Liège, Belgium. (Cebedeau—Journées 1964, 2, rue A. Stevart, Liège)

27-29. American Ophthalmological Soc., Hot Springs, Va. (AOS, 108 E. 68 St., New York, N.Y. 10021)

27-29. Canadian High Polymer Forum, 12th, Ste. Marguerite, Quebec. (H. Daoust, Dept. of Chemistry, University of Montreal, P.O. Box 6128, Montreal, P.Q.)

27-29. Operations Research Soc. of America, Montreal, P.Q., Canada. (G. D. Shellard, New York Life Insurance Co., 51 Madison Ave., New York, N.Y. 10010)

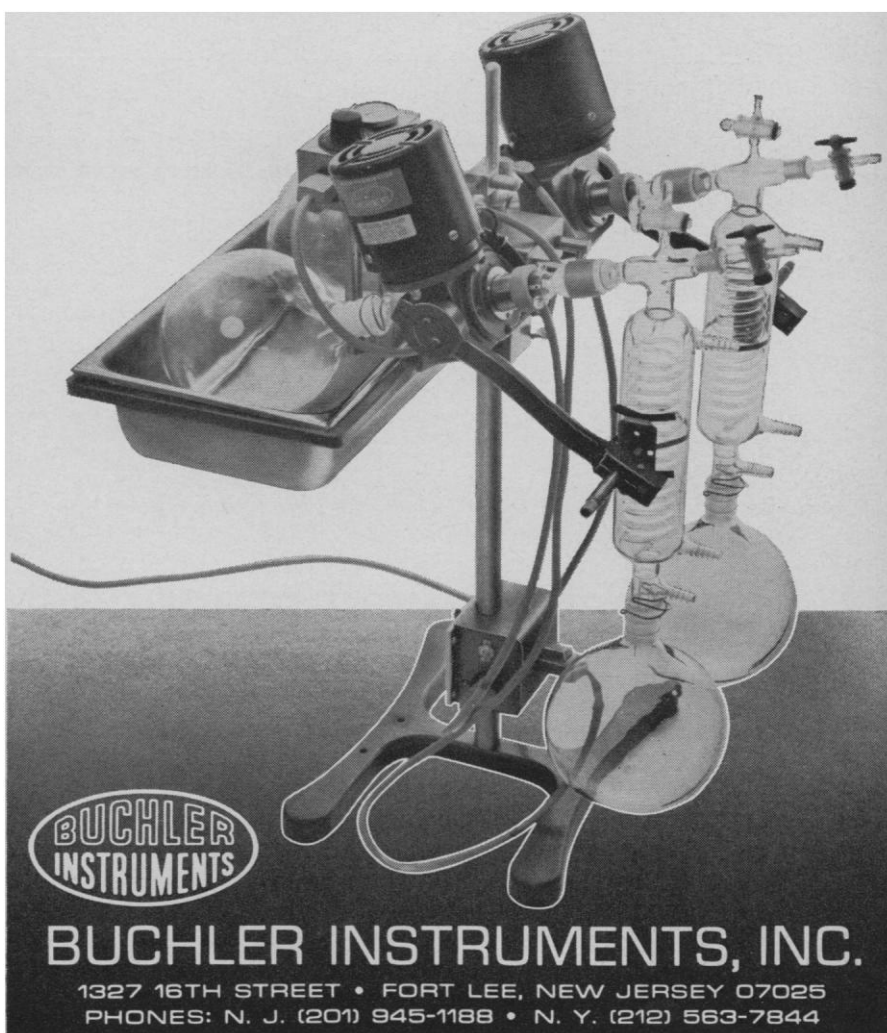
28-30. American Assoc. of Museums, St. Louis, Mo. (S. F. Borhegyi, Milwaukee Public Museum, Milwaukee 3, Wis.)

28-31. Rockets and Space Flight, 13th symp., Darmstadt, Germany. (A. F. Staats, Hermann-Oberth-Gesellschaft, Gesellschaft zur Förderung der Erforschung und Erschliessung des Weltraumes, Fritz-Beindorff-Allee 9, Hanover, Germany)

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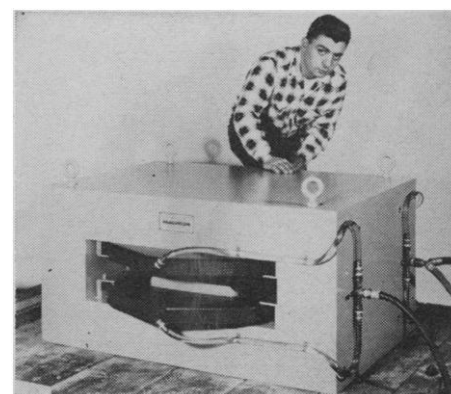
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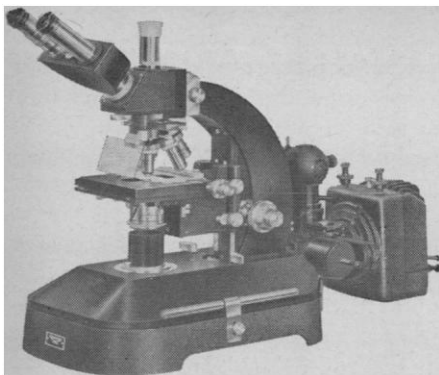


The material in this section is prepared by the following contributing writers:

Robert L. Bowman (R.L.B.), with the assistance of Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

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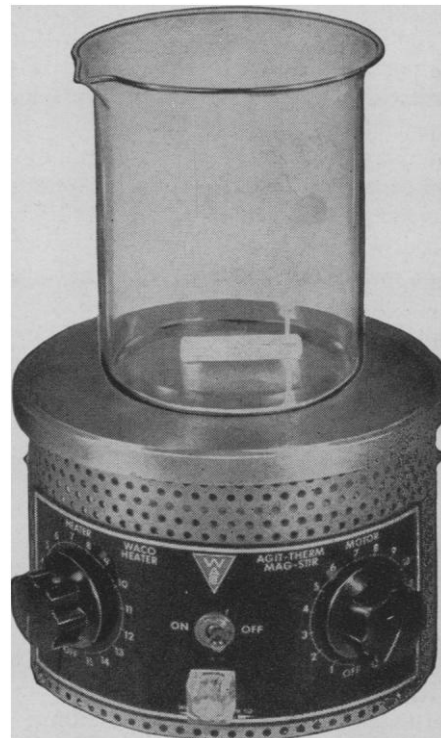
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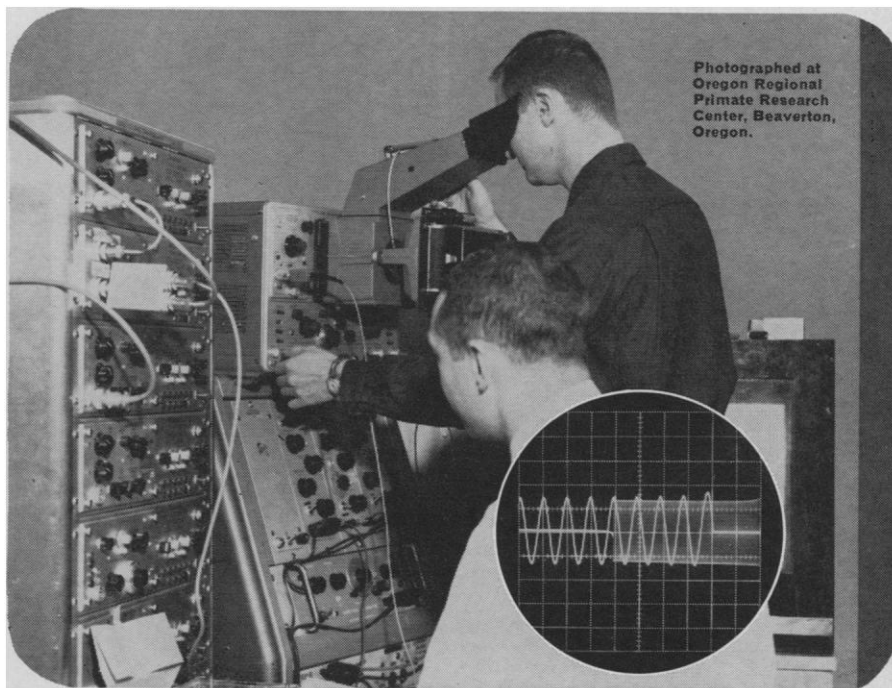
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(Continued from page 168)

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Analytic Trigonometry. William J. Bruce. Pergamon, London; Macmillan, New York, 1963. 355 pp. Illus. Paper, \$5.

The Analytical Chemistry of Thorium. D. I. Ryabchikov and E. K. Gol'braikh. Translated from the Russian edition (Moscow, 1960) by A. D. Norris. R. Belcher and L. Gordon. Eds. Pergamon, London; Macmillan, New York, 1963. 330 pp. Illus. \$14.

Astronomy. Robert H. Baker. Van Nostrand, Princeton, N.J., ed. 8, 1964. 565 pp. Illus.

The Atomic Nucleus. M. Korsunsky. Translated from the Russian edition (Moscow, 1958) by G. Yankovsky. Dover, New York, 1963. 413 pp. Illus. Paper, \$2.

Autohesion and Adhesion of High Polymers. S. S. Voyutskii. Translated from the Russian edition by S. Kaganoff. V. L. Vakula, Ed. Interscience (Wiley), New York, 1963. 286 pp. Illus. \$15.

Automatic Control and Computer Engineering. vol. 2. V. V. Solodovnikov, Ed. Translated from the Russian edition (Moscow, 1959) by Tribhuan Prasad. Pergamon, London; Macmillan, New York, 1963. 339 pp. Illus. \$15.

Basic Matrix Algebra and Transistor Circuits. G. Zelinger. Pergamon, London; Macmillan, New York, 1963. 132 pp. Illus. \$6.50.

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Chemical Aspects of Nuclear Reactors. vols. 1-3. vol. 1, *Gas-Cooled Reactors* (284 pp. \$11); vol. 2, *Water-Cooled Reactors* (404 pp. \$15); vol. 3, *Miscellaneous Topics* (215 pp. \$10). J. K. Dawson and R. G. Sowden. Butterworth, Washington, D.C., 1963. Illus.

The Chemistry of Cationic Polymerization. P. H. Plesch, Ed. Pergamon, London; Macmillan, New York, 1963. 744 pp. Illus. \$30.

Collected Scientific Papers of Wolfgang Pauli. vols. 1 and 2. R. Kronig and V. F. Weisskopf, Eds. Interscience (Wiley), New York, 1964. vol. 1, 1161 pp.; vol. 2, 1422 pp. Illus. Set. \$70.

Combinatorial Geometry in the Plane. Hugo Hadwiger and Hans Debrunner. Translated from the German edition (1955) by Victor Klee. Holt, Rinehart, and Winston, New York, 1964. 123 pp. Illus.

Communication Satellites. G. E. Mueller and E. R. Spangler. Wiley, New York, 1964. 290 pp. Illus. \$10.

Consecutive Chemical Reactions. Mathematical analysis and development. N. M. Rodiguin and E. N. Rodiguina. Translated from the Russian edition by Scripta Technica. Robert F. Schneider, Ed. Van Nostrand, Princeton, N.J., 1964. 146 pp. Illus. \$5.

Constitutional Problems in Organic Chemistry. M. B. Watson and G. W. Youngson. Van Nostrand, Princeton, N.J., 1964. 142 pp. Illus. \$4.75.



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Crystallographic Data on Metal and Alloy Structures. Compiled by A. Taylor and Brenda J. Kagle. Dover, New York, 1963. 269 pp. Paper, \$2.25.

Divalent Carbon. Jack Hine. Ronald, New York, 1964. 212 pp. Illus. \$7.

The Dynamics of Real Gases. J. F. Clarke and M. McChesney. Butterworth, Washington, D.C., 1964. 429 pp. Illus. \$17.50.

Electric Waves. Being researches on the propagation of electric action with finite velocity through space. Heinrich Hertz. Translated from the German edition by D. E. Jones. Dover, New York, 1962 (reprint of 1893 edition). 296 pp. Illus. Paper, \$1.75.

Electrons, Atoms, Metals, and Alloys. William Hume-Rothery. Dover, New York, revised ed. 3, 1963. 387 pp. Illus. Paper, \$2.25.

Elements of Astromechanics. Peter Van de Kamp. Freeman, San Francisco, 1964. 148 pp. Illus. Paper, \$2; cloth, \$4.

Elements of Mathematical Logic. Jan Lukasiewicz. Translated from the Polish edition (Warsaw, ed. 2, 1958) by Olgierd Wojtasiewicz. Pergamon, London; Macmillan, New York, 1964. 136 pp. Illus. \$6.50.

Elements of Pulse Circuits. F. J. M. Farley. Methuen, London; Wiley, New York, ed. 2, 1962. 169 pp. Illus. \$3.50.

Equations of Mathematical Physics. A. N. Tikhonov and A. A. Samarskii. Translated from the Russian edition (Moscow, 1953) by A. R. M. Robson and P. Basu. D. M. Brink, Ed. Pergamon, London; Macmillan, New York, ed. 2, 1963. 781 pp. Illus. \$17.50.

Equations of the Mixed Type. A. V. Bitsadze. Translated from the Russian edition (Moscow, 1959) by P. Zador. I. N. Sneddon, Ed. Pergamon, London. Macmillan, New York, 1964. 174 pp. Illus. \$8.50.

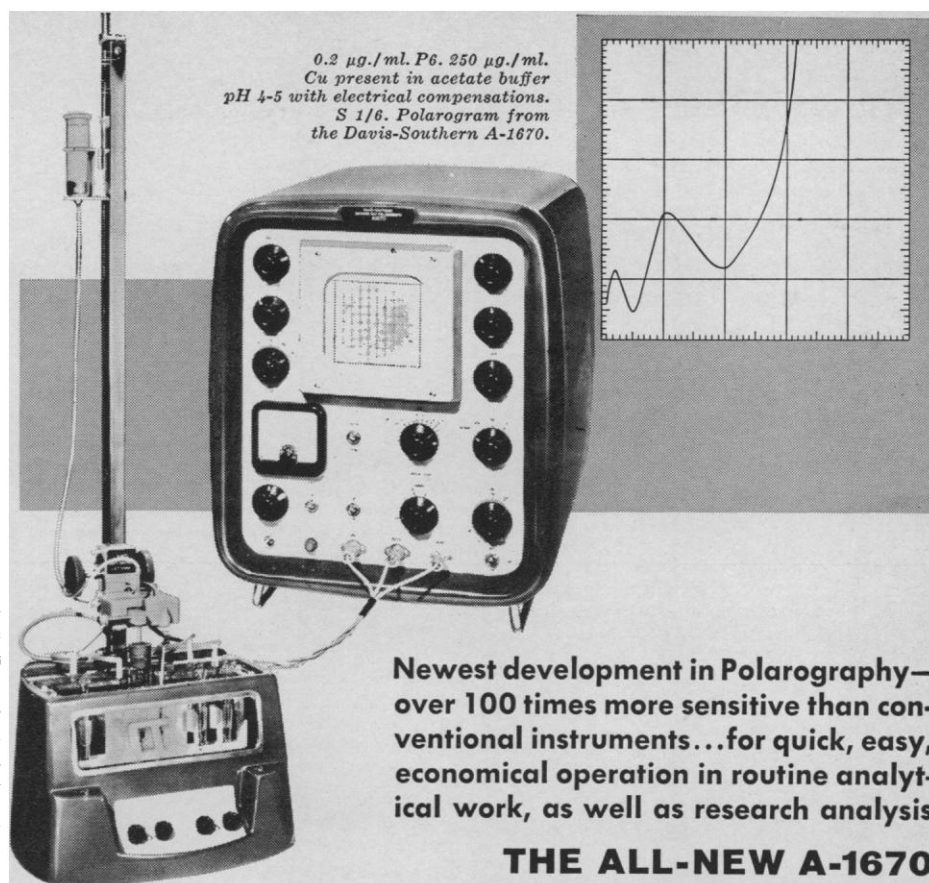
Essays on the Theory of Numbers. pt. 1., *Continuity and Irrational Numbers*; pt. 2., *The Nature and Meaning of Numbers*. Richard Dedekind. Translated from the German edition by Wooster Woodruff Beman. Dover, New York, 1963 (reprint of English translation, 1901). 121 pp. Illus. Paper, \$1.

Etude Geologique du Carbonifere Briannonnais (Hautes-Alpes). Robert Feys. Editions B.R.G.M., Paris, 1963. 387 pp. Illus. Maps. Paper.

European Miniature Electronic Components Data Annual 1963-64. Including a six-language glossary of electronic components with pictorial and symbolic representations. G. W. A. Dummer and J. Mackenzie Robertson, Eds. Pergamon, London; Macmillan, New York, 1962. 1103 pp. Illus. \$30.

Experimental Spectroscopy. Ralph A. Sawyer. Dover, New York, ed. 3, 1963. 368 pp. Illus. Paper, \$2.

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From Low-Speed Aerodynamics to Astronautics. Theodore von Kármán. Shih I. Pai, Ed. Pergamon, London; Macmillan, New York, 1963. 98 pp. Illus. \$3.75.

Fundamentals of Microwave Electronics. V. N. Shevchik. Translated from the Russian edition (Moscow 1959) by L. A. Thompson. W. A. Gambling, Ed. Pergamon, London; Macmillan, New York, 1963. 287 pp. Illus. \$9.50.

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Hamiltonian Dynamics. C. W. Kilmister. Wiley, New York, 1964. 156 pp. Illus. Paper, \$4.75.

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A History of Geometrical Methods. Julian Lowell Coolidge. Dover, New York, 1963 (reprint of 1940 ed.). 469 pp. Illus. Paper, \$2.25.

A History of the Mathematical Theories of Attraction and the Figure of the Earth. From the time of Newton to that of Laplace. I. Todhunter. Dover, New York, 1962 (reprint of 1873 ed.). 544 pp. Illus. \$7.50.

Identity and Reality. Emile Meyerson. Translated from the French by Kate Loewenberg. Dover, New York, 1962 (reprint of 1930 ed.). 495 pp. Paper, \$2.25.

Mathematics in Aeronautical Research. K. N. Dodd. Oxford Univ. Press, New York, 1964. 144 pp. Illus. \$3.40.

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Molten Salt Chemistry. Milton Blander, Ed. Interscience (Wiley), New York, 1964. 785 pp. Illus. \$25.

Newer Methods of Polymer Characterization. Bacon Ke, Ed. Interscience (Wiley), New York, 1964. 738 pp. Illus. \$24.50.

Programming and Coding the IBM 709-7090-7094 Computers. Philip M. Sherman. Wiley, New York, 1963. 151 pp. Illus. Paper, \$1.95.

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Progress in Ceramic Science. vol. 3. J. E. Burke, Ed. Pergamon, London; Macmillan, New York, 1963. 270 pp. Illus. \$12. Four papers "Crystallographic aspects of some decomposition and re-

crystallization reactions," G. W. Brindley; "Current status of the Griffith crack theory of glass strength," F. M. Ernberger; "Electric conduction and dielectric relaxation in glass," A. E. Owen; "Sintering in ceramics," R. L. Coble and J. E. Burke.

Progress in Chemical Toxicology. vol. 1. Abraham Stolman, Ed. Academic Press, New York, 1963. 450 pp. Illus. \$14. Eleven papers: "Isolation and separation techniques for identification of poisons," H. C. Freimuth; "Application of gas chromatography to toxicology," L. R. Goldbaum, Eugene L. Schloegel, and Abel M. Dominguez; "Aliphatic alcohols," R. N. Harger and Robert B. Forney; "Acidic and neutral poisons," A. S. Curry; "Ataraxics and nonbarbiturate sedatives," A. J. McBay and Elvera J. Algeri; "The determination of antiarthritics, antihistamines, and thymoleptics," F. Rieders; "Narcotics and related bases," by C. G. Farmilo and K. Genest; "Toxicity of air pollutants," by M. Feldstein; "Analytical methods for air pollutants," M. Feldstein; "Poisonous mushrooms," V. E. Tyler, Jr.; "Poisonous seeds and fruits," by A. E. Schwarting.

Progress in Nuclear Physics. vol. 9. O. R. Frisch, Ed. Pergamon, London; Macmillan, New York, 1964. 316 pp. Illus. \$15. Six papers: "Spark chambers," J. G. Rutherglen; "Semiconductor counters," G. Dearnaley; "Theoretical techniques of high-energy beam design," N. M. King; "Introduction to the structure analysis of collision amplitudes," R. J. Eden; "The interaction of strange particles with nuclei," E. H. S. Burhop, D. H. Davis, and J. Zakrzewski; "Electromagnetic properties of the Muon," F. J. M. Farley.

Progress in Oceanography. vol. 1. Mary Sears, Ed. Pergamon, London; Macmillan, New York, 1963. 391 pp. Illus. \$15. Five papers: "Geological investigation of near-shore sand-transport," E. Seibold; "Electrification of the atmosphere," by D. C. Blanchard; "Suspended organic matter in sea water," T. R. Parsons; "The salinity problem," R. A. Cox; and "Gulf stream '60," F. C. Fuglister.

Properties and Applications of Transistors. J. P. Vasseur. Translated from the French edition by D. E. Radley and J. R. Garrood. Pergamon, London; Macmillan, New York, 1964. 462 pp. Illus. \$15.

Regge Poles and S-Matrix Theory. Steven C. Frautschi. Benjamin, New York, 1963. 208 pp. Illus. Paper, \$3.95; cloth, \$7.50.

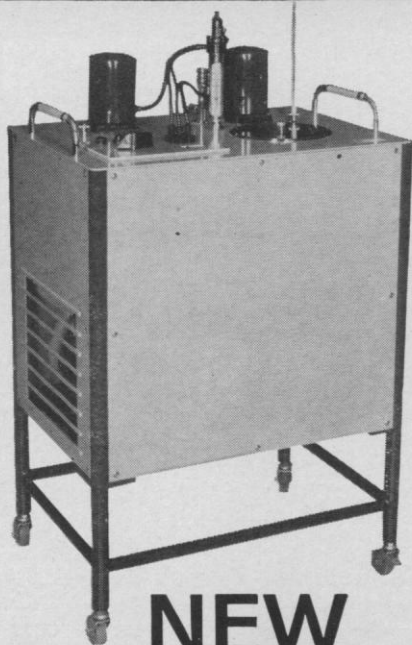
Rocket Propellant and Pressurization Systems. Elliot Ring, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1964. 320 pp. Illus. \$13.

The Scattering of Electromagnetic Waves from Rough Surfaces. Petr Beckmann and Andre Spizzichino. Pergamon, London; Macmillan, New York, 1963. 511 pp. Illus. \$15.

A Short Course in Differential Equations. Earl D. Rainville. Macmillan, New York, ed. 3, 1964. 318 pp. Illus. \$5.95.

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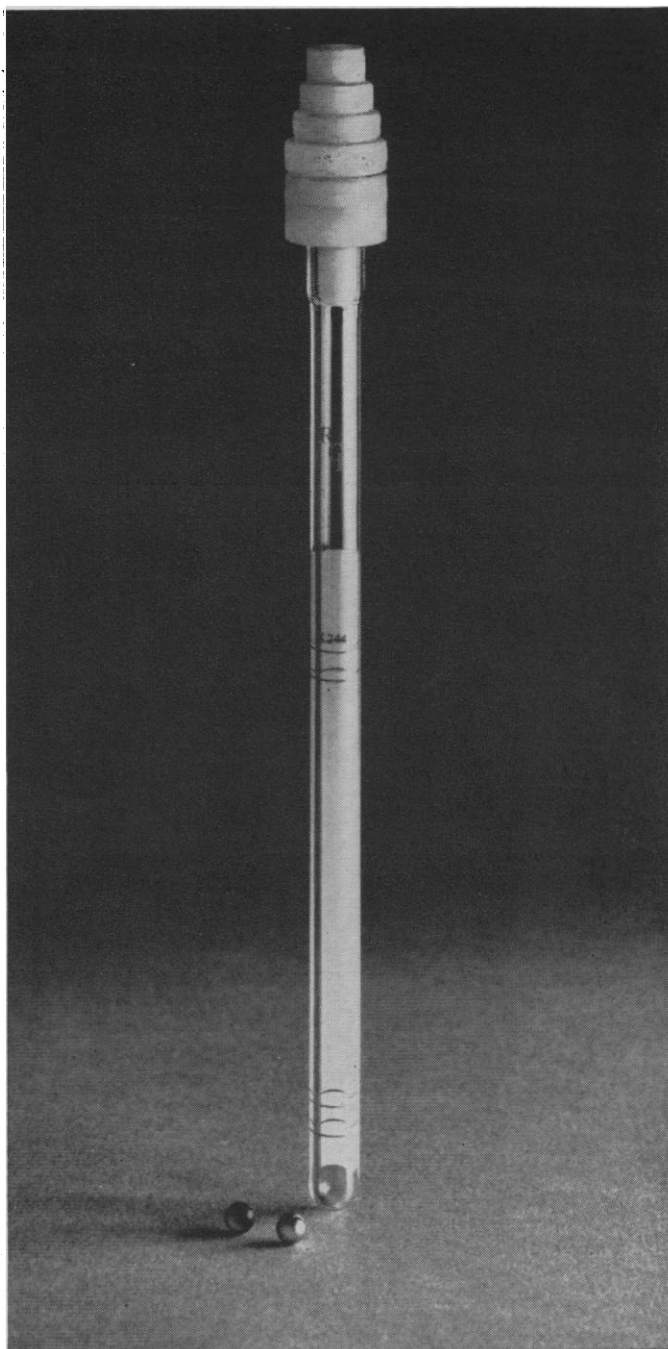
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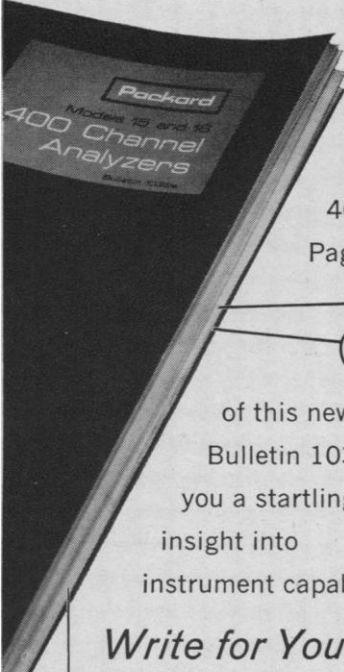
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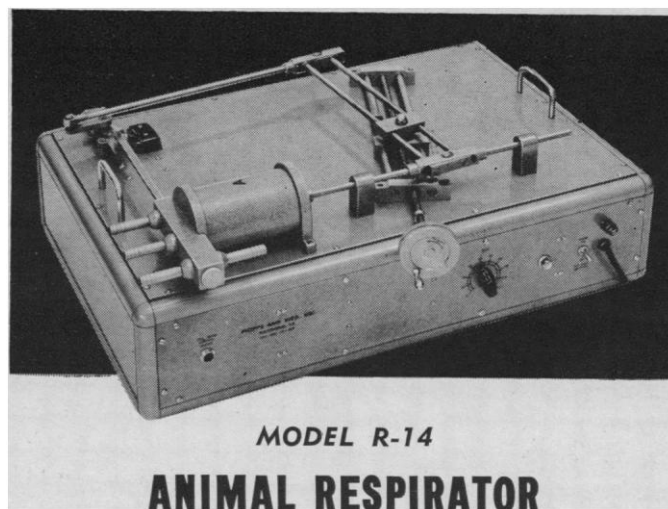
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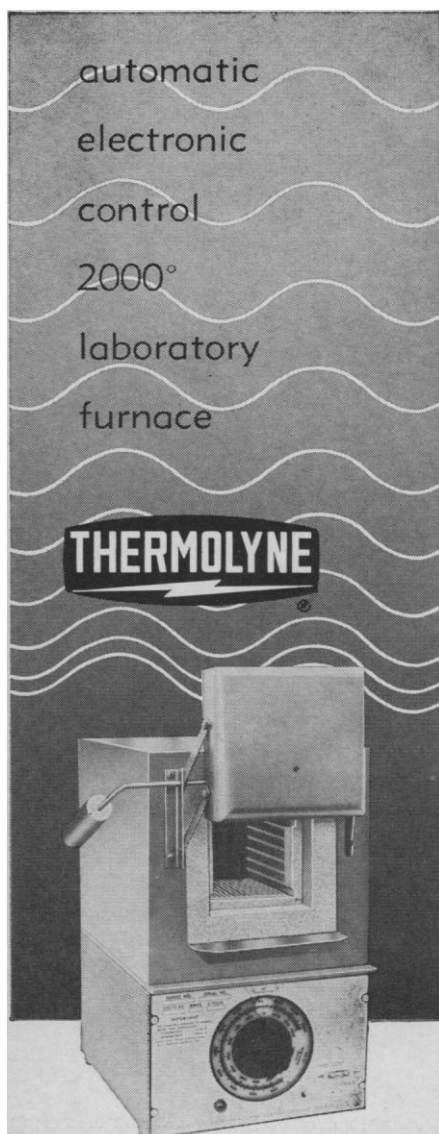
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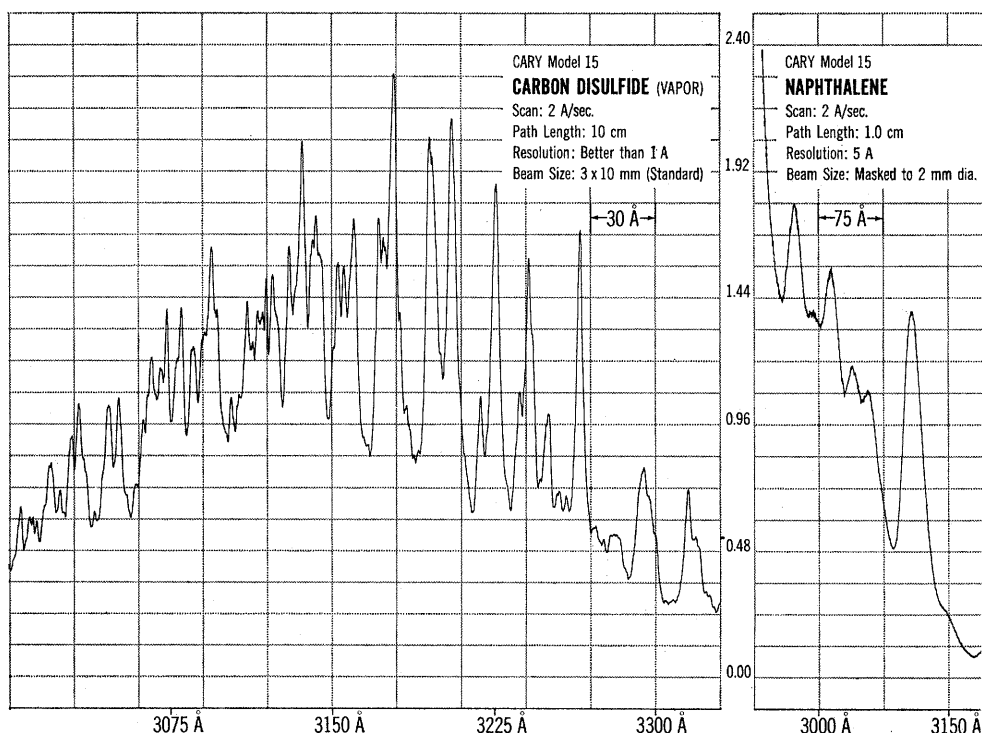
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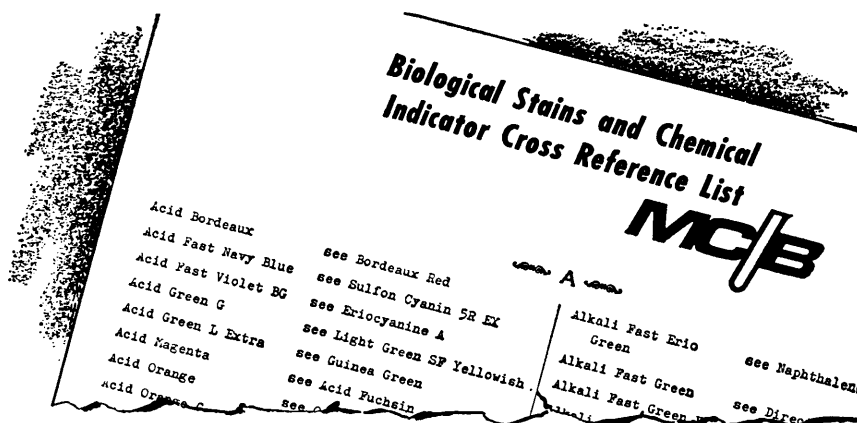


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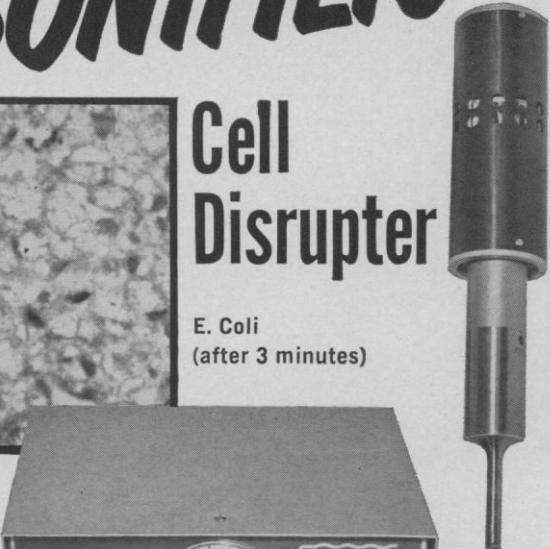
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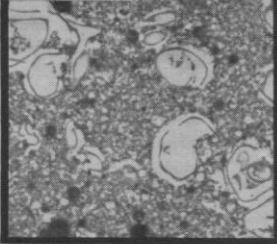
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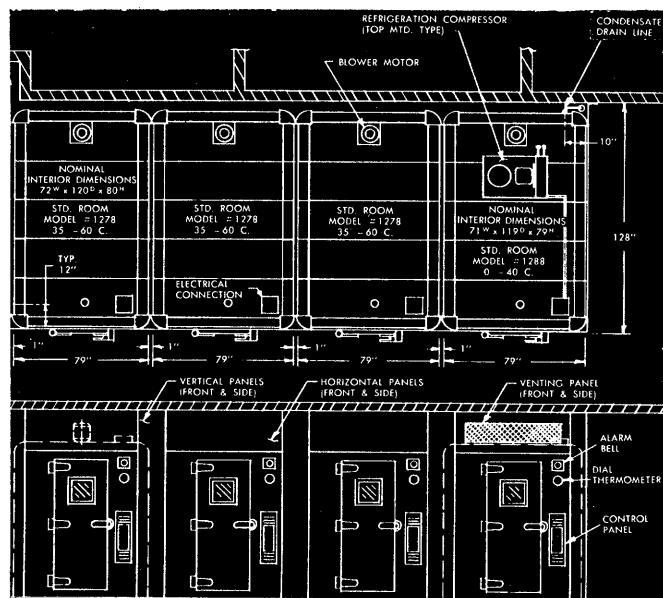
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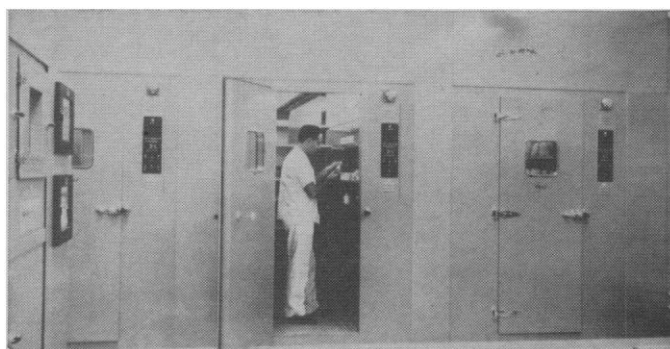
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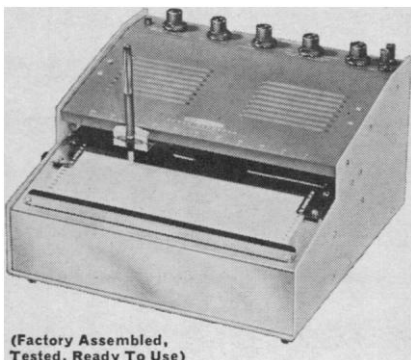
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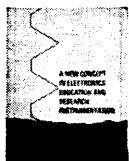


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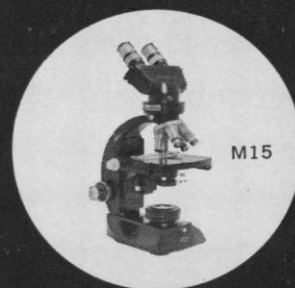
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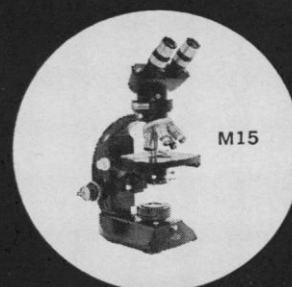
Advances in Oral Biology. vol. 1. Peter H. Staple, Ed. Academic Press, New York, 1964. 367 pp. Illus. \$14. Eleven papers: "Secretion of saliva," by L. H. Schneyer and C. A. Schneyer; "Movement and forces in tooth eruption," by A. R. Ness; "Recent concepts of the physiology of mastication," by Y. Kawamura; "Recent studies of mucins and blood-group substances," by W. Pigman and Y. Hashimoto; "Cytochemical aspects of oxidative enzyme metabolism in gingiva," by B. Eichel and H. Arto Sharik; "Dynamics of supragingival calculus formation," by H. R. Mühlemann and H. E. Schroeder; "The effect of tetracycline on mineralization and growth," by G. Bevelander; "Citrate in mineralized tissues," by R. L. Hartles; "Polarization microscopy of dental enamel with reference to incipient carious lesions," by D. Carlström; "The relationships of surface active agents, the enamel surface and dental caries," by J. P. Walsh; and "Modifications of the properties and composition of the dentin matrix caused by dental caries," by W. G. Armstrong.

Progress in Nucleic Acid Research. vol. 2. J. N. Davidson and Waldo E. Cohn, Eds. Academic Press, New York, 1963. 359 pp. Illus. \$11. Nine papers: "Nucleic acids and information transfer," by L. F. Cavalieri and B. H. Rosenberg; "Nuclear ribonucleic acid," by H. Harris; "Plant virus nucleic acids," by R. Markham; "The nuclease of *Escherichia coli*," by I. R. Lehman; "Specificity of chemical mutagenesis," by D. R. Krieg; "Column chromatography of oligonucleotides and polynucleotides," by M. Staehelin; "Mechanism of action and application of azapyrimidines," by J. Skoda; "The function of the pyrimidine base in the ribonuclease reaction," by H. Witzel; "Preparation, fractionation, and properties of sRNA," by G. L. Brown.

Vitamins and Hormones. Advances in research and applications. vol. 21. Robert S. Harris, John A. Loraine, and Ira G. Wool, Eds. Academic Press, New York, 1963. 384 pp. Illus. \$13. Six papers: "Intrinsic factor," by L. Ellenbogen and D. R. Highley; "Vitamin A, vitamin D, cartilage, bones, and teeth," by F. C. McLean and A. M. Budy; "Modified thiamine compounds," by C. Kawasaki; "Interrelations between vitamin B₆ and hormones," by J. M. Hsu; "Corticosteroids and enzyme activity," by F. Rosen and C. A. Nichol; and "The endocrine system and the stomach," by G. P. Crean.



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NEWS AND COMMENT

(Continued from page 159)

are invited in all fields of analysis by spectroscopy, and in analytical chemistry with emphasis on gas chromatography and instrumental methods in quality control. Deadline for receipt of titles and abstracts: *1 June*. (D. A. Shearer, Analytical Chemistry Research Service, Research Branch, Canada Agriculture, Ottawa, Ont.)

The Institute of Physics and the Physical Society, London, will sponsor a conference on **low and medium energy nuclear physics**, 9–11 September at the University of Sussex. Short papers are invited for the meeting; abstracts of approximately 300 words are required in triplicate. Deadline: *1 June*. (W. D. Hamilton, School of Physical Sciences, University of Sussex, Brighton, Sussex, England.)

A conference on **magnetic resonance in biological systems** will be held 20–22 July in Boston, Mass. The subjects for discussion will include radiation damage of nucleic acids, enzyme action, conformation studies of proteins and nucleic acids, light-induced excited states, oxidation-reduction reactions, and paramagnetic metal ions in biological macromolecules. (R. G. Shulman, Bell Telephone Laboratories, Murray Hill, N.J.)

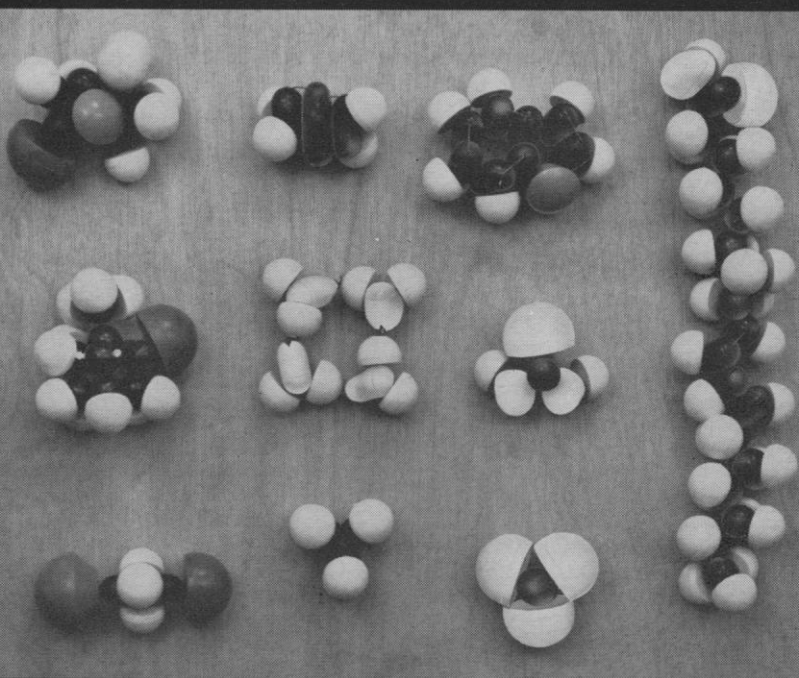
The Professional Technical Group on **Sonics and Ultrasonics**, Institute of Electrical and Electronics Engineers, plans its 1964 symposium 14–16 October in Santa Monica, California. Papers are invited for presentation at the meeting; triplicate copies of a 200-word abstract are required. Deadline: *1 June*. (A. H. Meitzler, Technical Program Chairman, Bell Telephone Laboratories, Inc., Murray Hill, N.J.)

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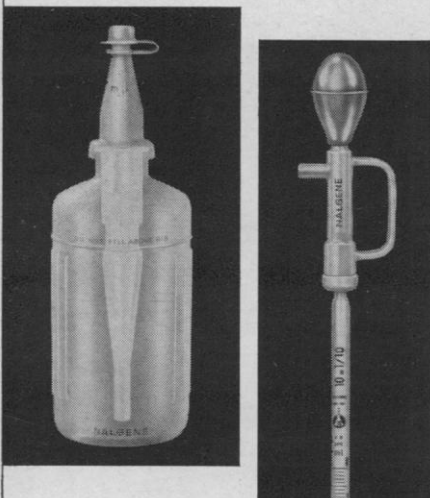


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oratories throughout the nation. (Princeton Report, Inc., Princeton, N.J.)

Scientists in the News

George D. Zuidema, associate professor of surgery at the University of Michigan Medical School, has been named professor and director of the surgery department at the Johns Hopkins University Medical School, effective 1 July. He will also be surgeon-in-chief of the Johns Hopkins Hospital.

Fritz John, professor of mathematics at New York University, has been named director of the division for mathematics and mechanics of N.Y.U.'s Courant Institute of Mathematical Sciences.

The new president of the American Association of Petroleum Geologists is **Grover E. Murray**, vice president and dean of academic affairs at Louisiana State University.

James Edwin Wood, associate professor of medicine at the Medical College of Georgia, has been appointed research professor of medicine and cardiology at the University of Virginia, as of 1 July.

Fisher Scientific Company has named **Sidney Soloway** director of research and development. He was formerly with the Ridgefield Research Laboratories, Schlumberger Well Surveying Company.

David Myers, professor of otolaryngology at the University of Pennsylvania, has been appointed chairman of the department in the university's graduate school of medicine.

Warren L. Bostick, professor of pathology and director of laboratories at the University of California School of Medicine, San Francisco, has been named dean of the California College of Medicine, Los Angeles.

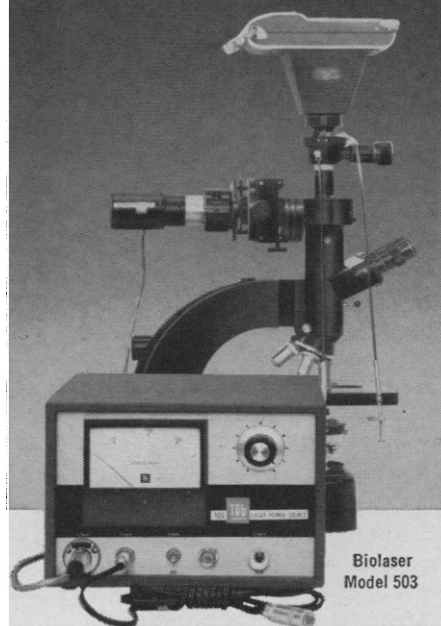
David B. Smith, formerly vice president for engineering and research at the Philco Corporation, has been named visiting professor of engineering at the University of Pennsylvania.

Karl R. Wendt, formerly vice president for engineering, Colorado Instruments Company, Broomfield, has become chief of the high frequency cali-

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bration services section, radio standards engineering laboratory, at the National Bureau of Standards laboratories, Boulder, Colo.

Carroll L. Shartle, formerly chief of the psychology and social sciences division in the Defense Department's Office of Defense Research and Engineering, has become director of research and assistant dean for research in Ohio State University's College of Commerce and Engineering.

A. W. F. Banfield, chief zoologist in the Natural History Branch, National Museum of Canada, Ottawa, has been appointed director of the branch. He succeeds **Loris S. Russell**, who has become head of the life sciences division, Royal Ontario Museum, Toronto.

William G. Thurman, chairman of the department of pediatrics at the Sloan-Kettering Institute, has been named chairman of the department of pediatrics and first B. A. Shepherd professor of pediatrics at the University of Virginia, effective 1 July.

The University of Miami, Florida, has appointed **William J. Harrington** professor and head of the department of chemistry as of 1 June. He is at the present time an associate professor of medicine and director of the hematology division at Washington University medical school, St. Louis, Mo.

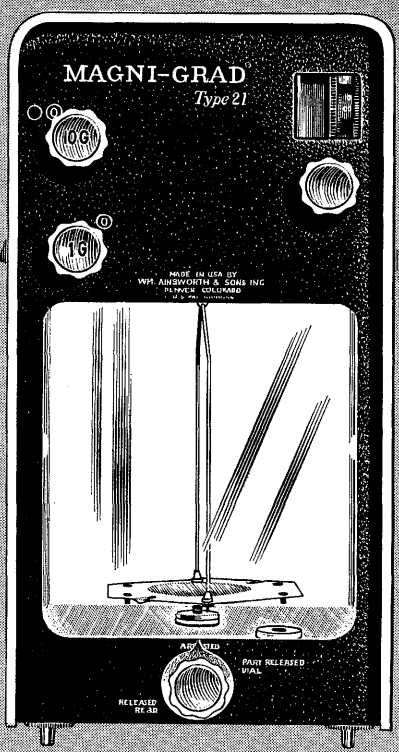
Velayudhan Nair, formerly at the University of Chicago, has been appointed associate professor of pharmacology and therapeutics at the Chicago Medical School, and director of the neuropharmacology and biochemistry laboratories at Michael Reese Hospital Psychiatric Research Institute.

Gerald M. Almy, associate head of the physics department at the University of Illinois, has been named head of the department, succeeding **Frederick Seitz**. Seitz, on leave to serve as president of the National Academy of Sciences, is scheduled to return to the university in 1966 as vice president for research and dean of the graduate college.

The new president of the National Society of Professional Engineers is **Brandon H. Backlund**, president of B. H. Backlund and Associates, Omaha, Nebr., and of Backlund Caribbean Engineering Corp.

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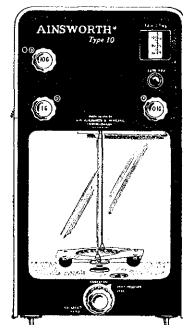
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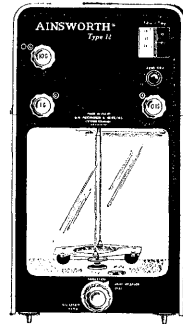
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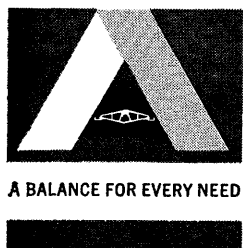


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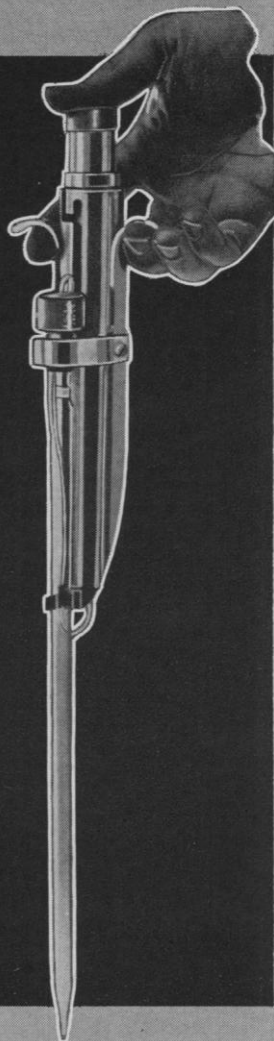


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Philip D. Thompson, of the National Center for Atmospheric Research, Boulder, Colo., has been elected president of the American Meteorological Association.

NASA has named **Paul L. Styles** to the newly established position of labor relations director. He will retain his position as chief of the Marshall Space Flight Center's industrial relations office.

Herbert E. Longenecker, president of Tulane University, has been named chairman of the Commission on Federal Relations of the American Council of Education.

John W. Bodine, president of Penjerdel, a regional research and information organization, has been elected president of the Academy of Natural Sciences of Philadelphia.

Marion Spencer DeWeese, associate professor of surgery at the University of Michigan, has been appointed professor and chairman of the surgery department in the University of Missouri's medical school, effective 1 June. He succeeds **John J. Modlin**, who has resigned the chairmanship to resume private practice, but will remain on the medical school's clinical staff.

M. H. Bernstein, chairman of the politics department at Princeton, has been appointed dean of the university's Woodrow Wilson School of Public and International Affairs, effective 1 July.

Martin B. Dworkis, professor of public administration at New York University, has been elected president of the new Borough of Manhattan Community College.

The U.S. Department of Agriculture recently announced that it has stationed **Clinton L. Brooke** in Western Europe to "represent U.S. interests relating to food laws and regulations that affect international trade in agricultural products." Brooke, formerly with Merck & Company, is at the U.S. Mission to the European Communities, Brussels, Belgium.

Vernon B. Brooks, formerly associate professor at the Rockefeller Institute in New York, has become professor and chairman of the physiology department at New York Medical College.

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