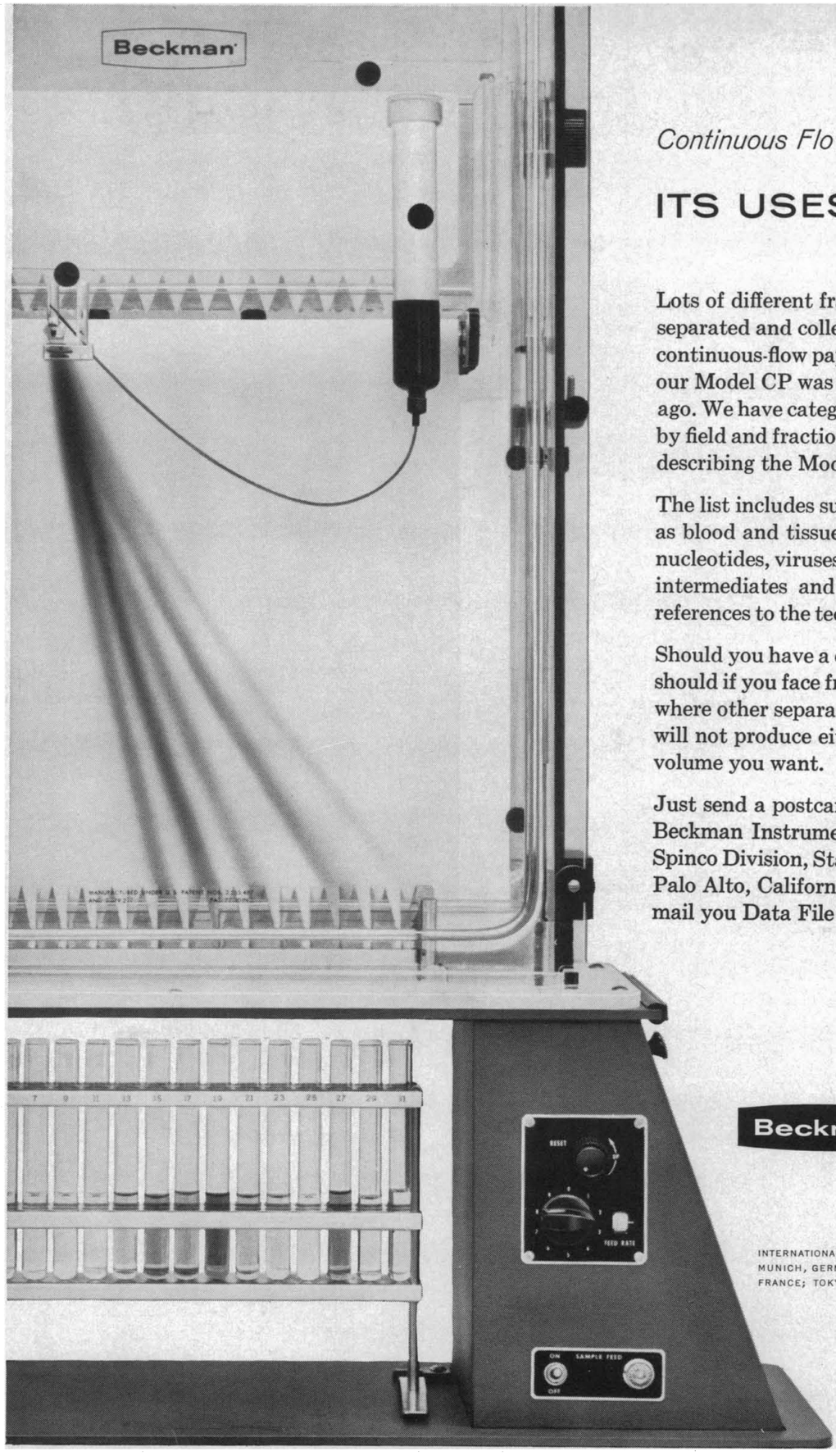
SCIENCE

24 July 1964

Vol. 145, No. 3630

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

CORAL



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SCIENCE

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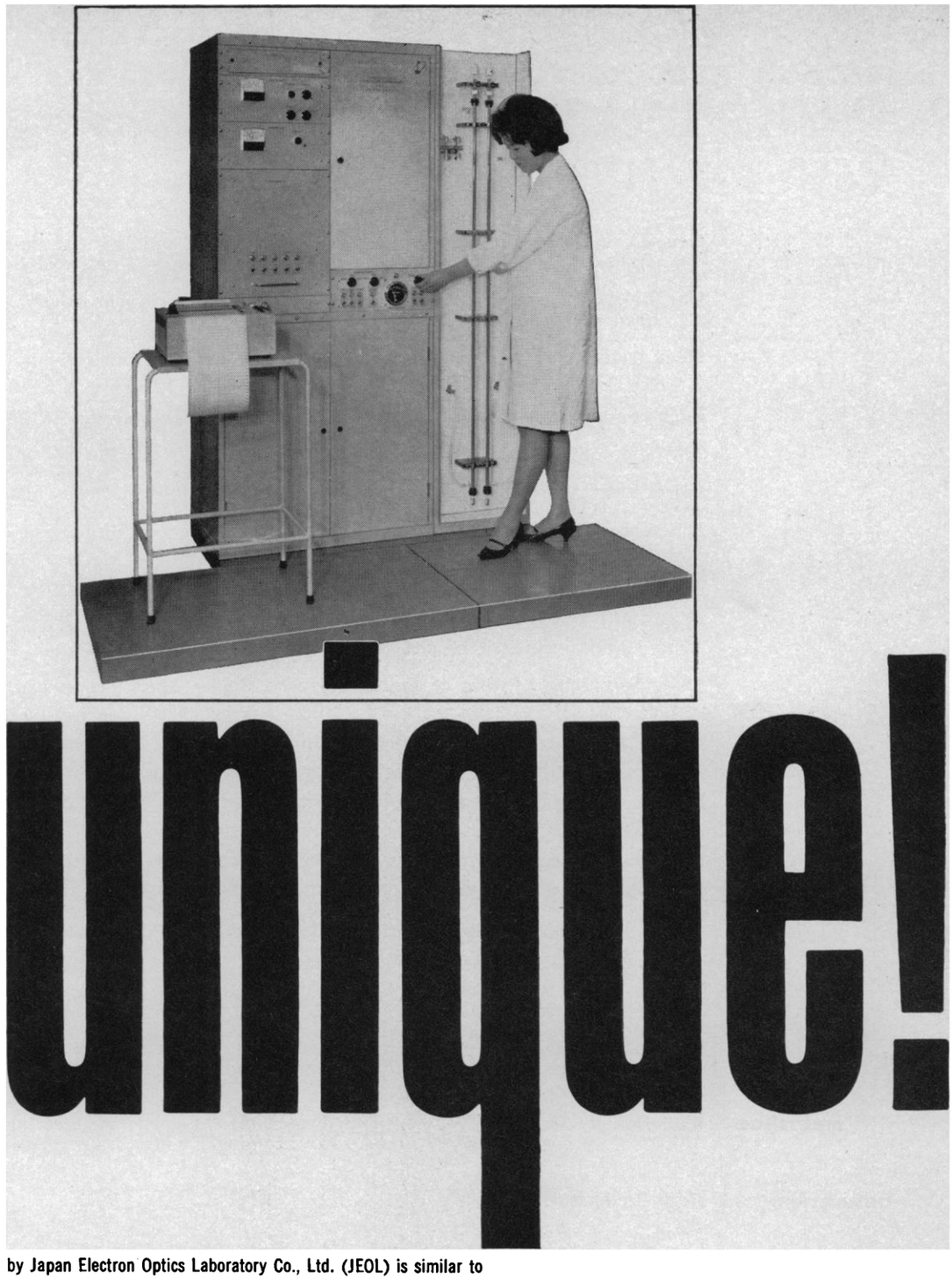
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

COVER

Agaricia undata, the dominant reef coral of the fore-reef slope environment in Jamaica, West Indies. This photograph, taken at a depth of 50 meters, shows only the central whorl, which is about 20 centimeters across. The colony as a whole was about 3 meters across. This species, though extremely abundant, prefers very steep, rugged marine slopes below the reef. It is rarely exhibited in museum collections. See page 383. [Thomas Goreau]



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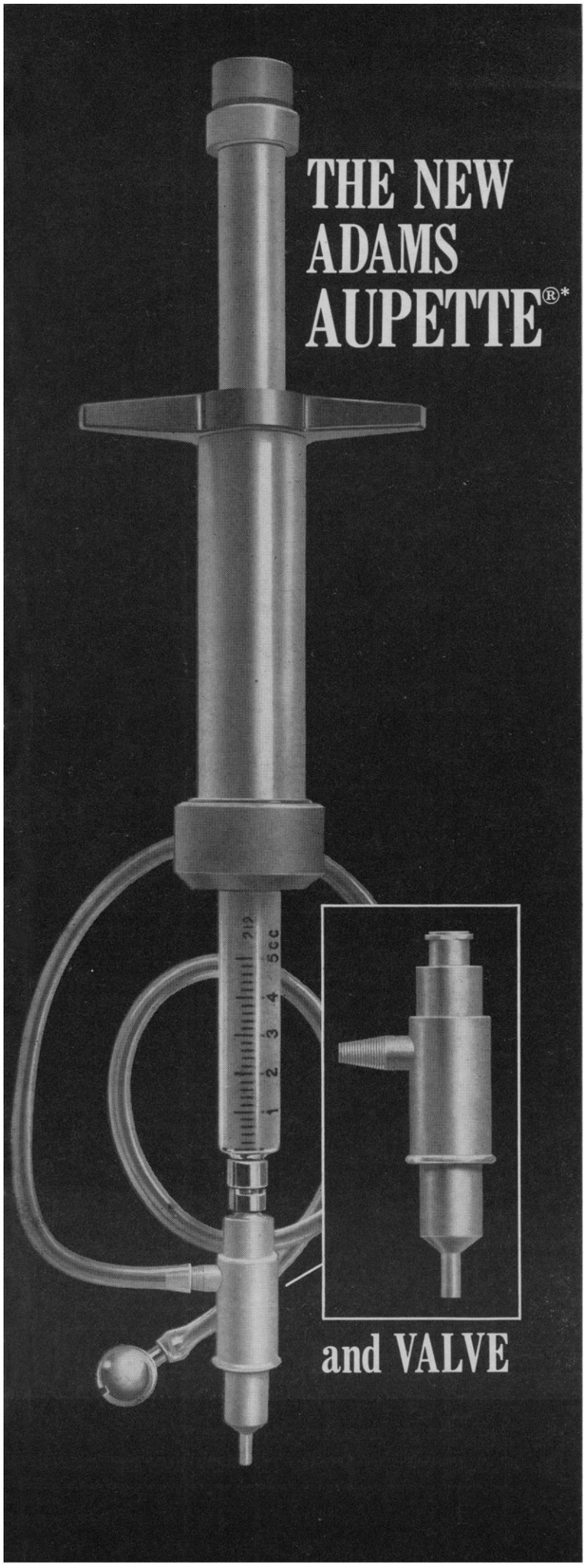
The JLC-01, manufactured by Japan Electron Optics Laboratory Co., Ltd. (JEOL) is similar to conventional automatic recording liquid column chromatographs — **except for one important difference.** Heat evolved during the separation process in the column system is measured by a sensitive, stable detector. Consequently, elution of any sample can be observed and be recorded automatically by detecting absorption-adsorption reaction, ion exchange reaction or partition reaction arising at the bottom of the column system. Sensitivity of 0.1 micromole is readily obtainable. ■ The JEOL Universal Automatic Recording Liquid Column Chromatograph provides several unique advantages. Samples previously impossible to detect can now be analyzed. Color reagents are not required permitting non-destructive, economical detection of the sample and fractionation of the eluded sample. Efficient, reliable design and compact construction enable easy, convenient and dependable operation. And, JEOL has established a complete domestic servicing network to assure continuous trouble-free service. ■ Complete technical data on the Universal Automatic Recording Liquid Column Chromatograph as well as an informative paper on the theory of this principle of chromatography is available. Please write JEOLCO. (U.S.A.), Inc., 461 Riverside Avenue, Medford 55, Massachusetts, phone 396-6241, area code 617.



—an automatic pipetting device for delivering predetermined quantities of liquid repeatedly—without resetting or remeasuring!

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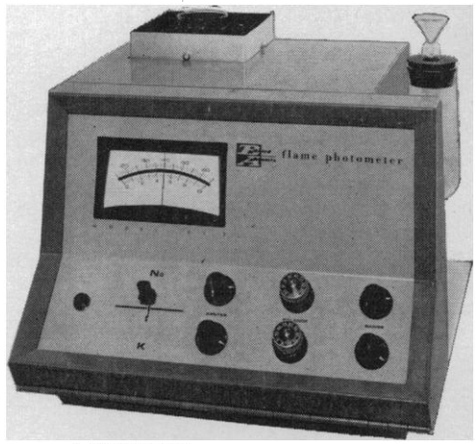
A flame is capable of exciting certain elements to emit characteristic light radiations. Isolating these emissions and measuring their intensity is the basis of flame photometry. Baird-Atomic's Model KY-2 Flame Photometer is specifically designed for analysis of trace quantities of sodium and potassium in solutions. Model KY-2 consists of an atomizer, a gas burner, special optical filters, photomultiplier detectors, and a meter for direct readout.

flame photometer

MODEL KY/2



BAIRD-ATOMIC LABORATORY INSTRUMENTS DEPT.

The **Model KY-2 Flame Photometer** is the **only** instrument now available which permits the combined versatility of either clinical or research analysis of Na and K!

The **Model KY-2 Flame Photometer** is the **only** instrument that combines direct readout in the clinical range and null-balance mode for research studies!

The **Model KY-2 Flame Photometer** incorporates new, improved electronic circuitry for more stable operation — a new D.C. power supply increases efficiency and prolongs the useful life of photomultiplier detectors!

The **Model KY-2 Flame Photometer** is easy to operate. It determines Na and K from a single sample and saves time, cuts glassware costs, and eliminates tedious handling!

VERSATILITY

For **research** use, Model KY-2 incorporates Baird-Atomic's DB Series null-indicating method for wide concentration ranges. For **clinical** use, Model KY-2 features the speed and simplicity of direct meter readout in mEq/l of Na and K within the concentration ranges found in blood serum and other body fluids!

DEPENDABILITY

Flame photometric analysis of sodium and potassium provides a high degree of reproducibility which **cannot** be matched by other analytical techniques. High accuracy and stability are obtained in Model KY-2 by the use of the double-beam principle with a lithium internal standard that minimizes variations due to fluctuations encountered in changes of burner and atomizer operation!

EFFICIENCY

Simple standardization methods using known concentrations of Na and K in Baird-Atomic standard solutions permit determinations of unknowns to be obtained in **less than 20 seconds!**

CONVENIENCE

The Model KY-2 enclosure is designed for easy accessibility. While the instrument is in operation, the hinged front panel, containing all controls, may be opened to reveal all the electronic components for easy servicing. The internal fine-grain Na and K controls are located at the front of the tube chassis should recalibration be necessary!

COMBINATION ATOMIZER

A combination gravity feed-aspirator atomizer is now standard on the Model KY-2. The aspirator feature allows the use of samples as small as 0.05cc of serum and reduces sample contamination. The atomizer is combined with a patented closed atomizer-burner system, sealed from outside air!

ECONOMY

Model KY-2's improved electronics means less maintenance, less service, and more effective use of operator time!

SALES AND SERVICE

The Model KY-2 Flame Photometer may be purchased directly from Baird-Atomic sales offices located in Atlanta, Cambridge, Chicago, Detroit, Houston, Los Angeles, and Philadelphia.

For a free copy of the NEW Model KY-2 8-page brochure, please call or write to the address below.

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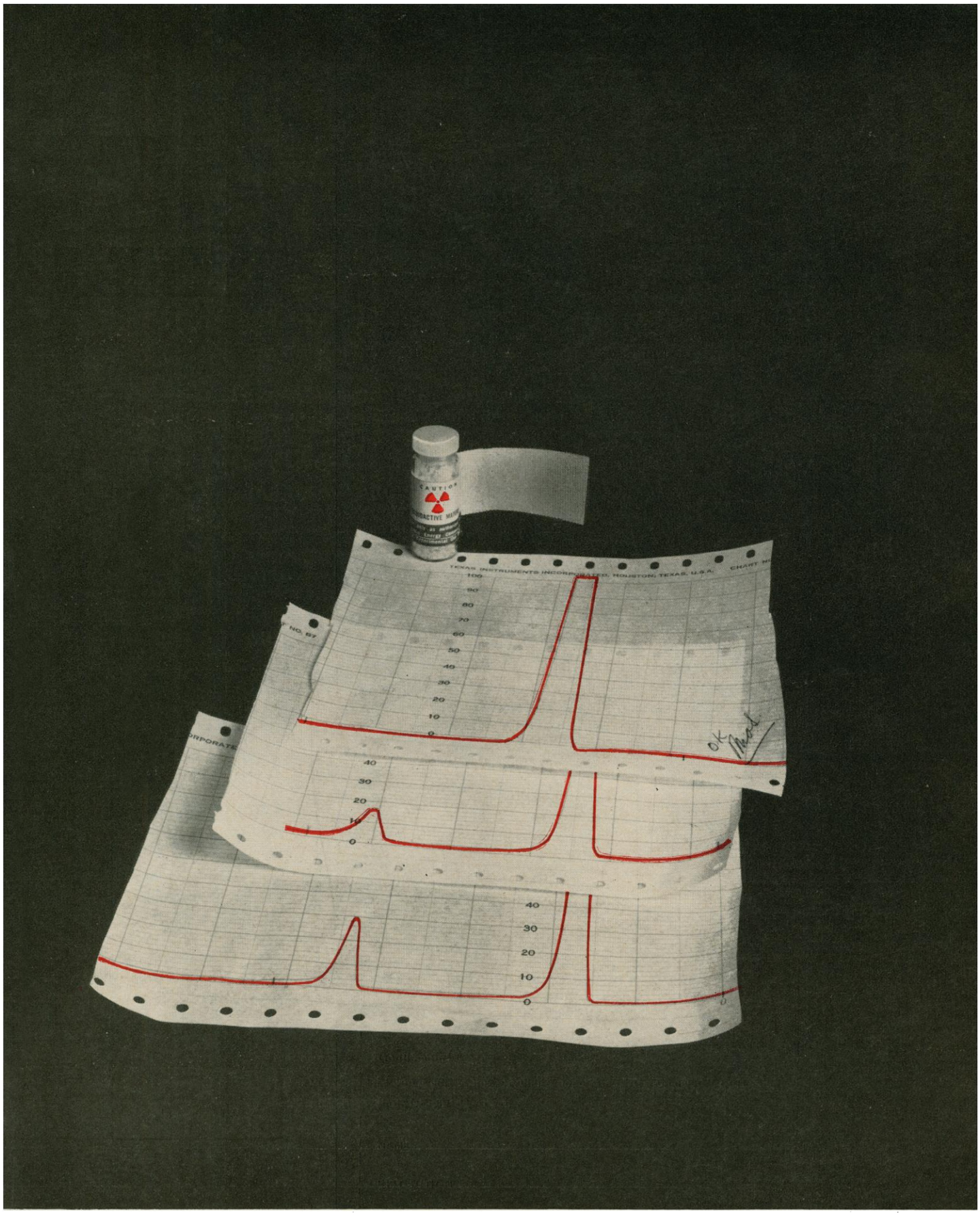

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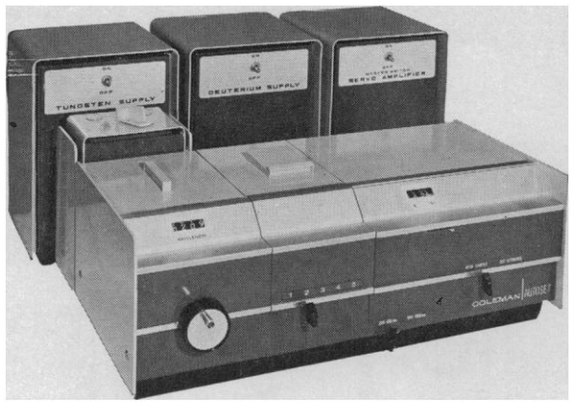

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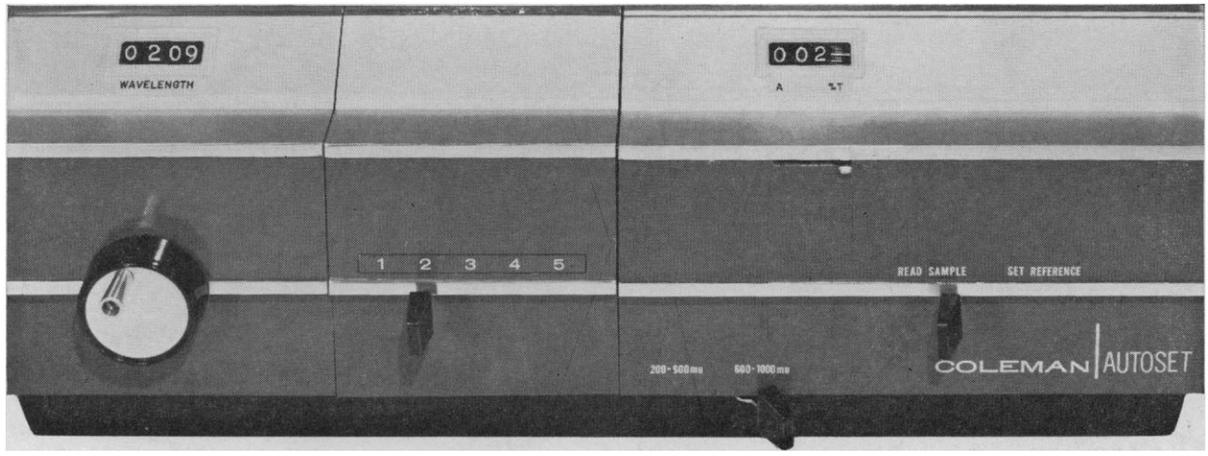

SIMPLE CONTROLS... NUMERICAL READOUT

This is the control panel of the AUTOSET Spectrophotometer, a new UV-Visible instrument featuring automatic reference setting, digital readout and simplified controls.

These are all the controls you need to perform fast, accurate spectrochemical analyses throughout the 200-1000 mμ spectrum.

SPEED and CONVENIENCE

Automated reference setting, the AUTOSET feature, ends the need for the multiple manipulations ordinarily required for making a spectrophotometer reference setting.

With AUTOSET, you can achieve the reference value in seconds by positioning a single control. Select the sample, place the control in "Read" position, and the sample value appears quickly in the readout window.

ERROR ELIMINATION

Reading analytical data from the AUTOSET's digital readout is twice as fast and three times as accurate as reading from a conventional dial.

In the AUTOSET Spectrophotometer, all data—wavelength, analytical results and sample identification—are presented in unmistakable numerical form.

SAMPLE VERSATILITY

The instrument's cuvette compartment is designed to accept a full range of cuvettes—ultramicro, long light path, test tube type and the highly-accurate 1-cm square cells.

The sample compartment has adequate room for such special equipment as mixers, thermostated components and 100-mm light path cells.

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Wavelength range 200-1000 millimicrons.

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Photometric accuracy: ±0.5%T, ±0.005A at 0.4A.

Sample Range
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1 to 100 millimeter light path.

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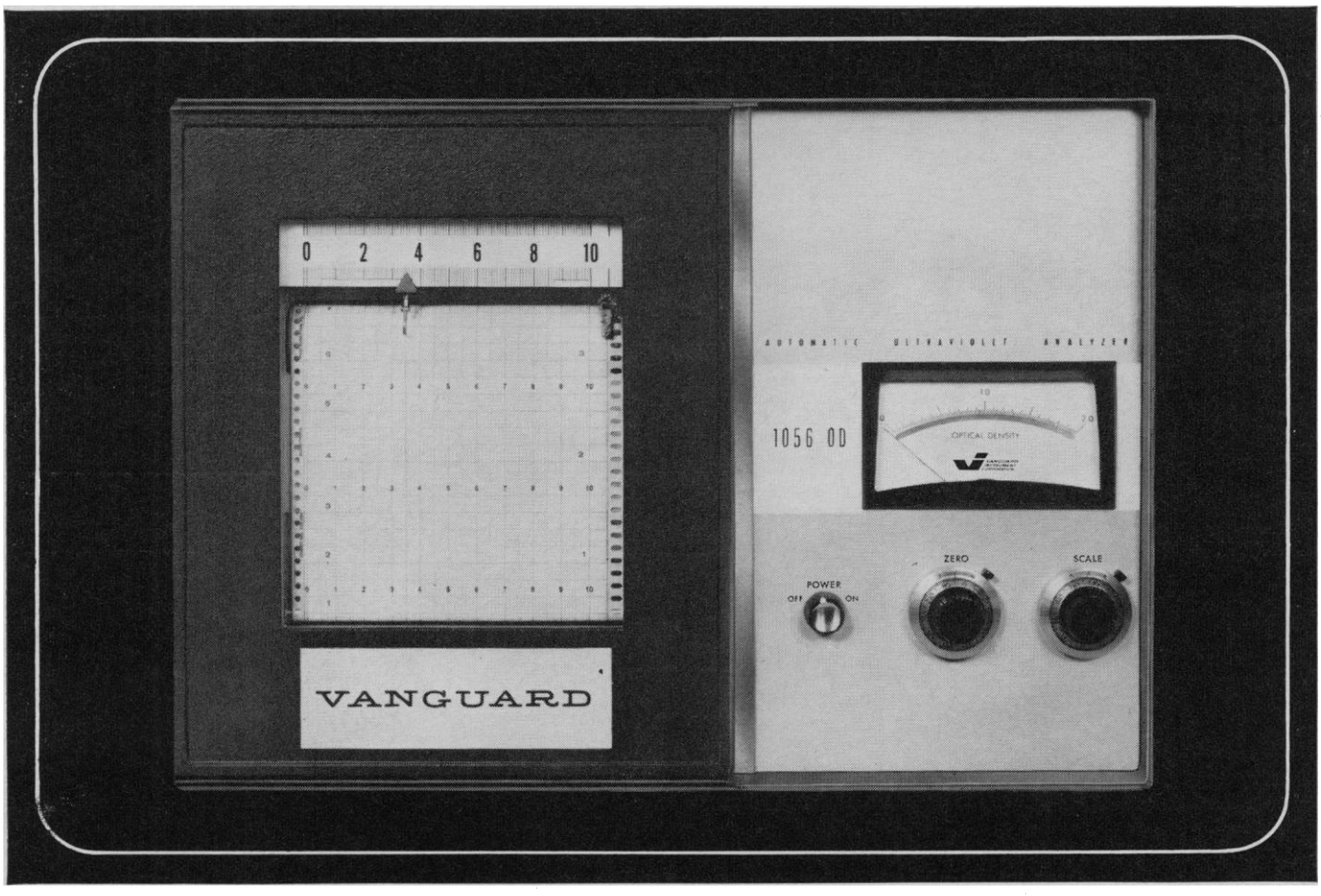

new automatic optical density ultra-violet analyzer

Vanguard Model 1056-OD Automatic Ultra-Violet Analyzer provides the investigator with unequaled reliability and versatility. Through the use of two independent logarithmic converters, this instrument provides a chart recording of the optical density of the effluent from a chromatographic column—the ordinate of which is linear with optical density. In addition, a plain diffraction grating monochromator enables the operator to select any wave length from 200 millimicrons into the visible spectrum.

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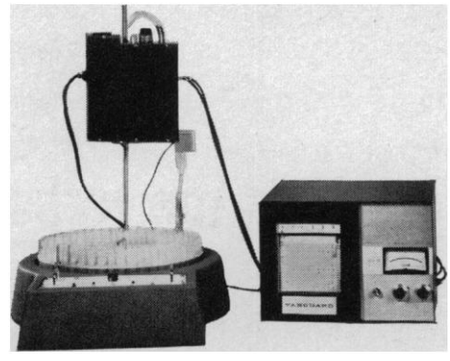

For complete specifications on the Model 1056-OD Automatic Ultra-Violet Analyzer, send for new informative literature. For immediate information and/or a quotation, call your nearest Vanguard office.

Model 1056-OD Automatic Ultra-Violet Analyzer shown with Model 1000 Fraction Collector. Model 1056-OD is compatible with all Fraction Collectors.

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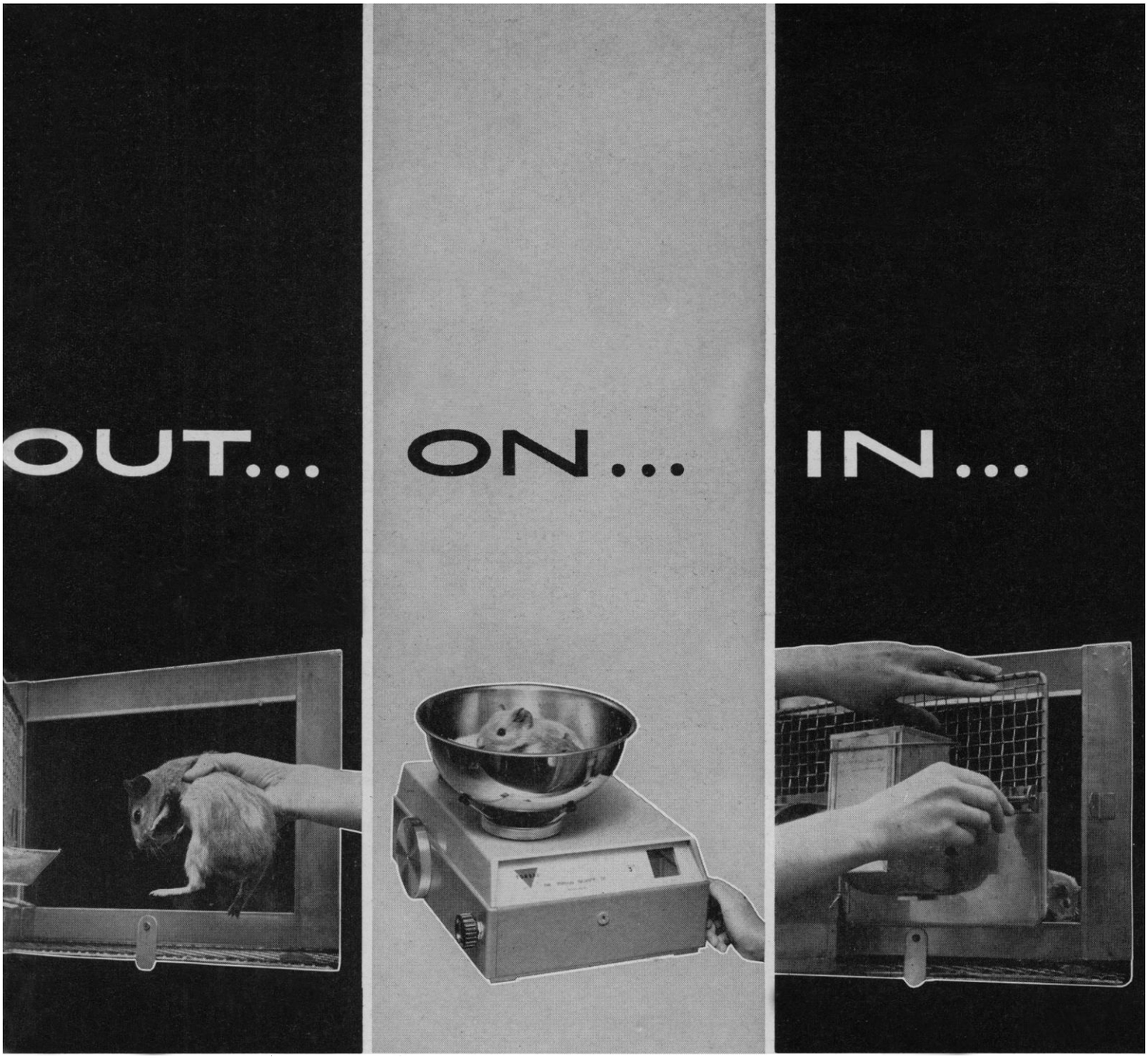

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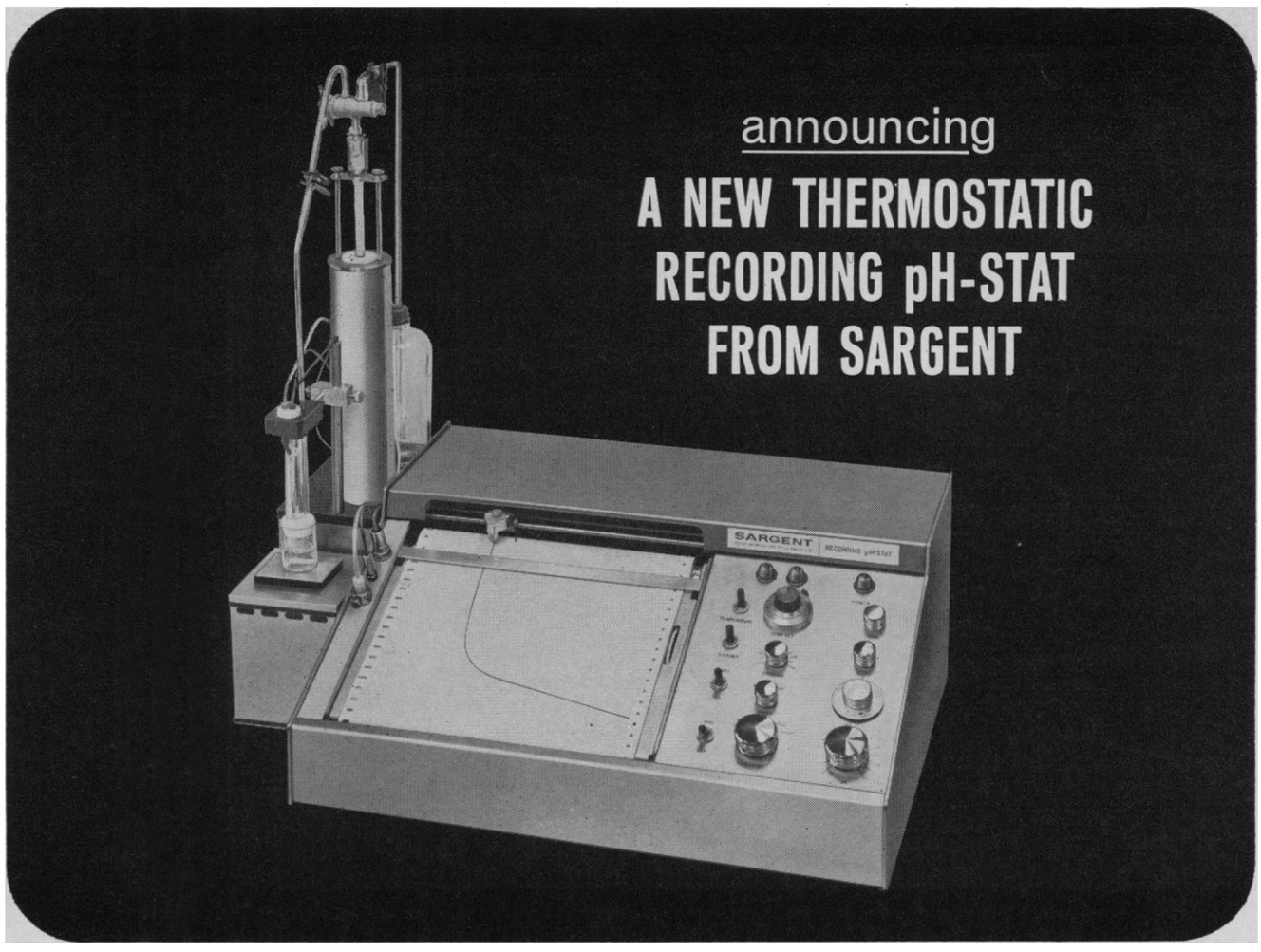

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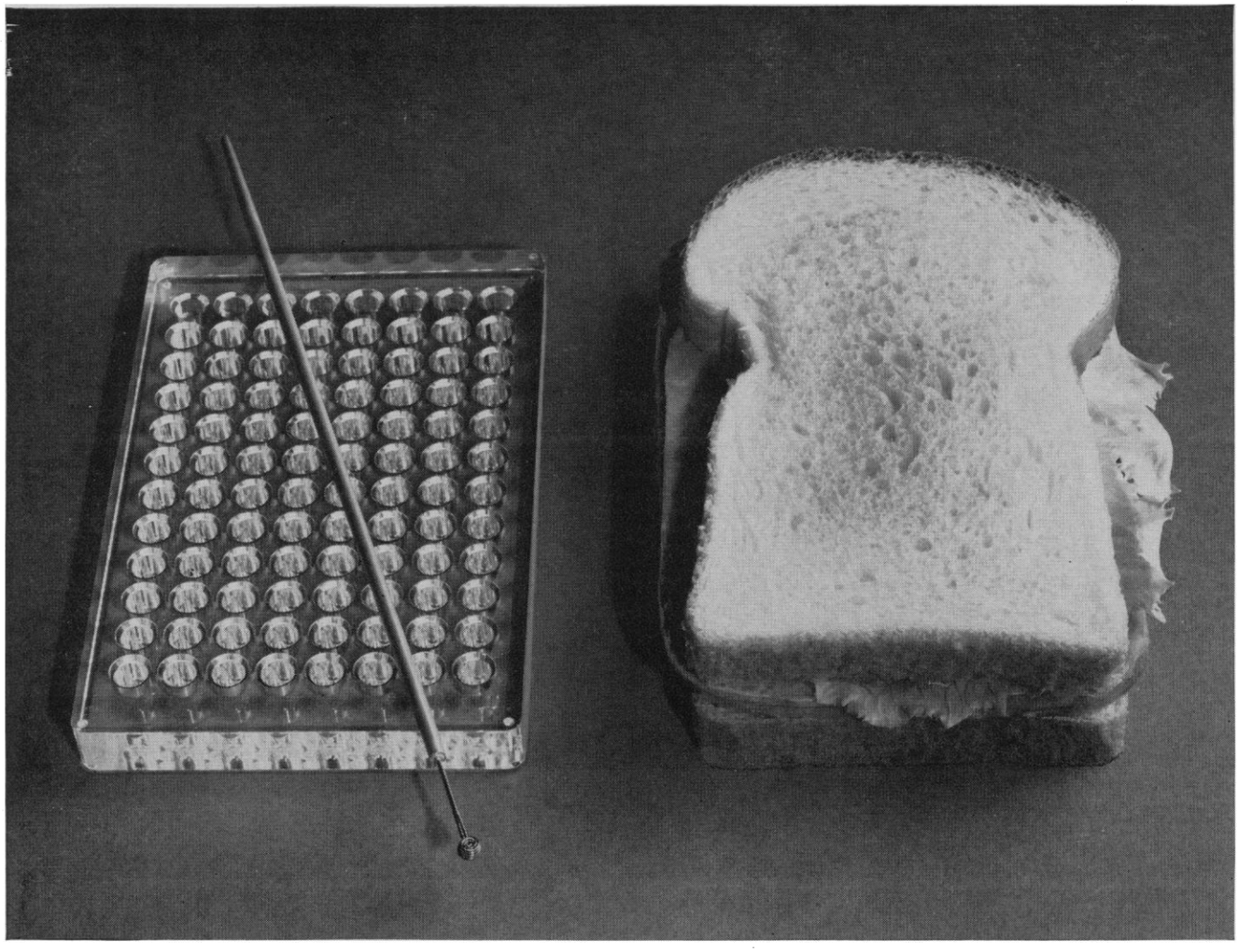

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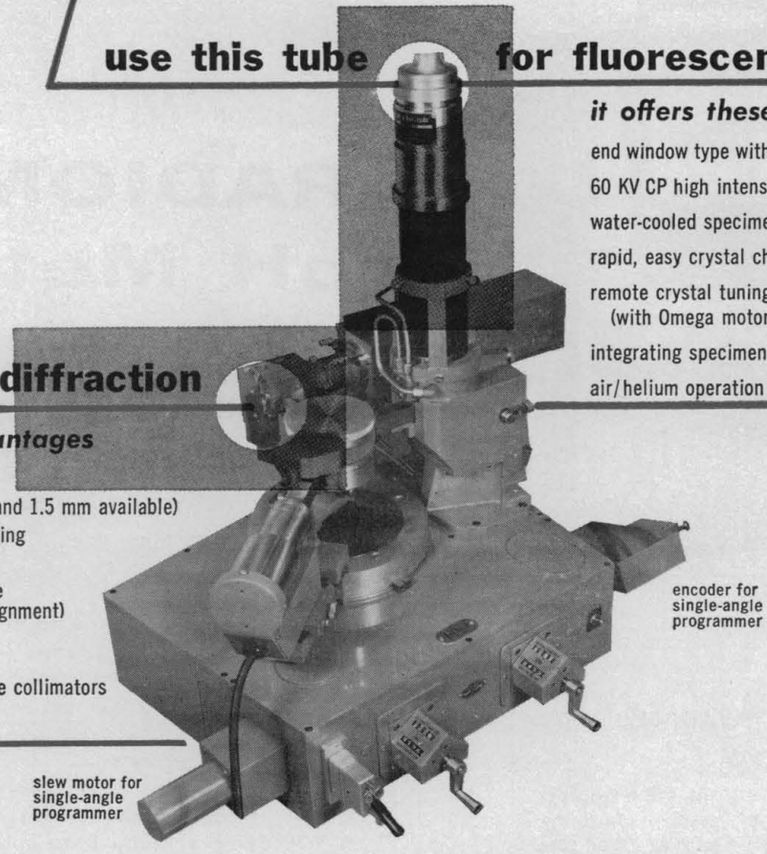

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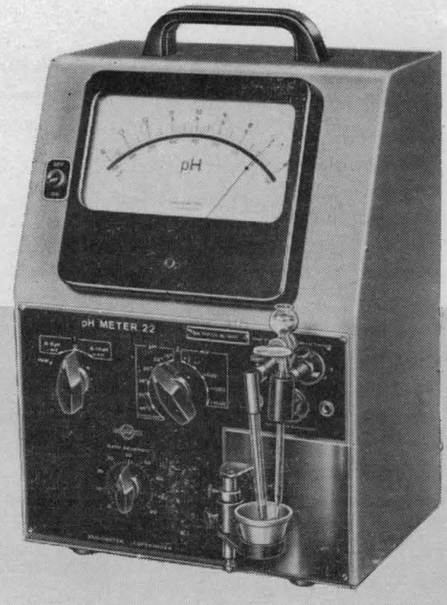

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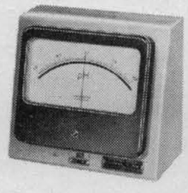

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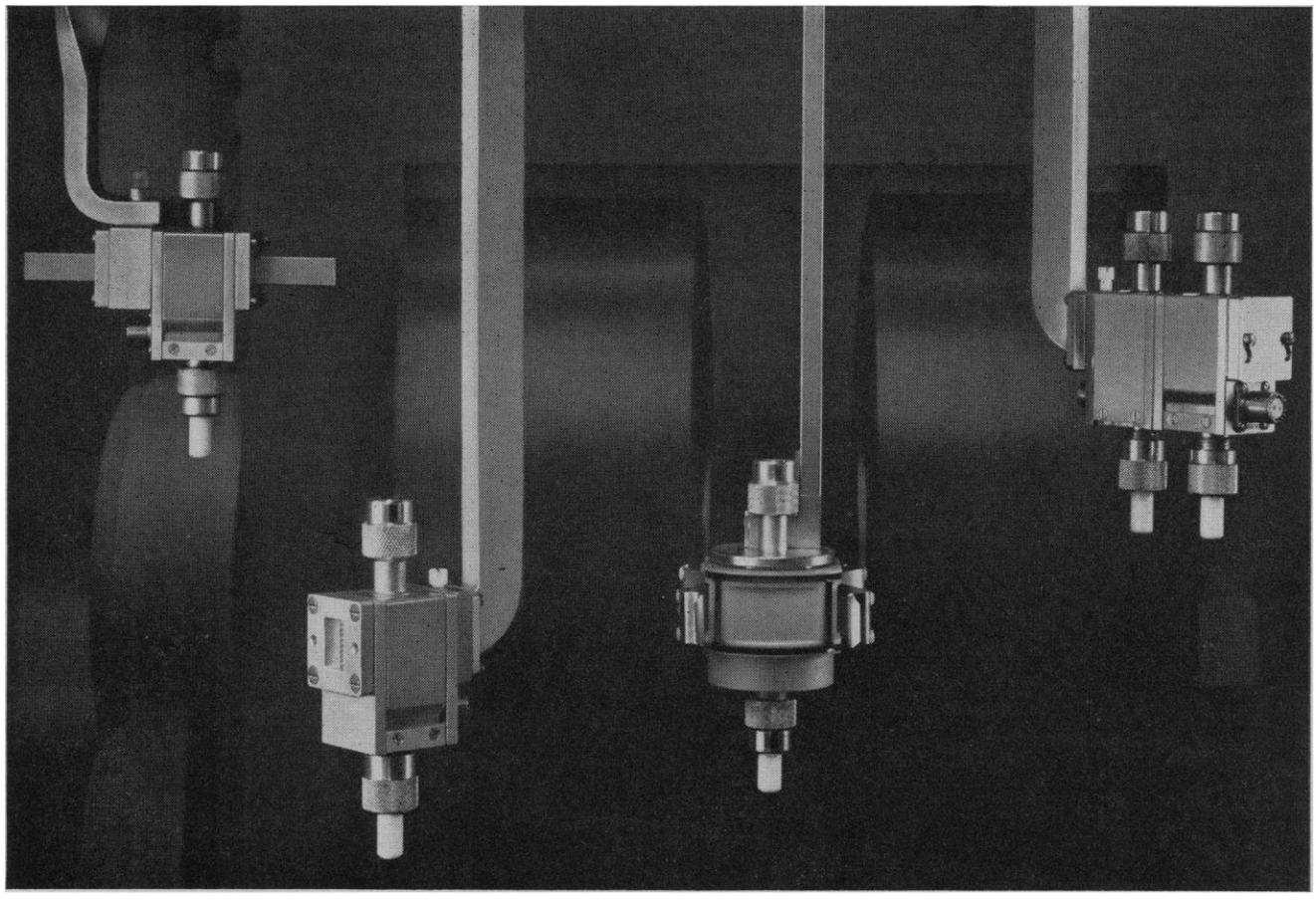

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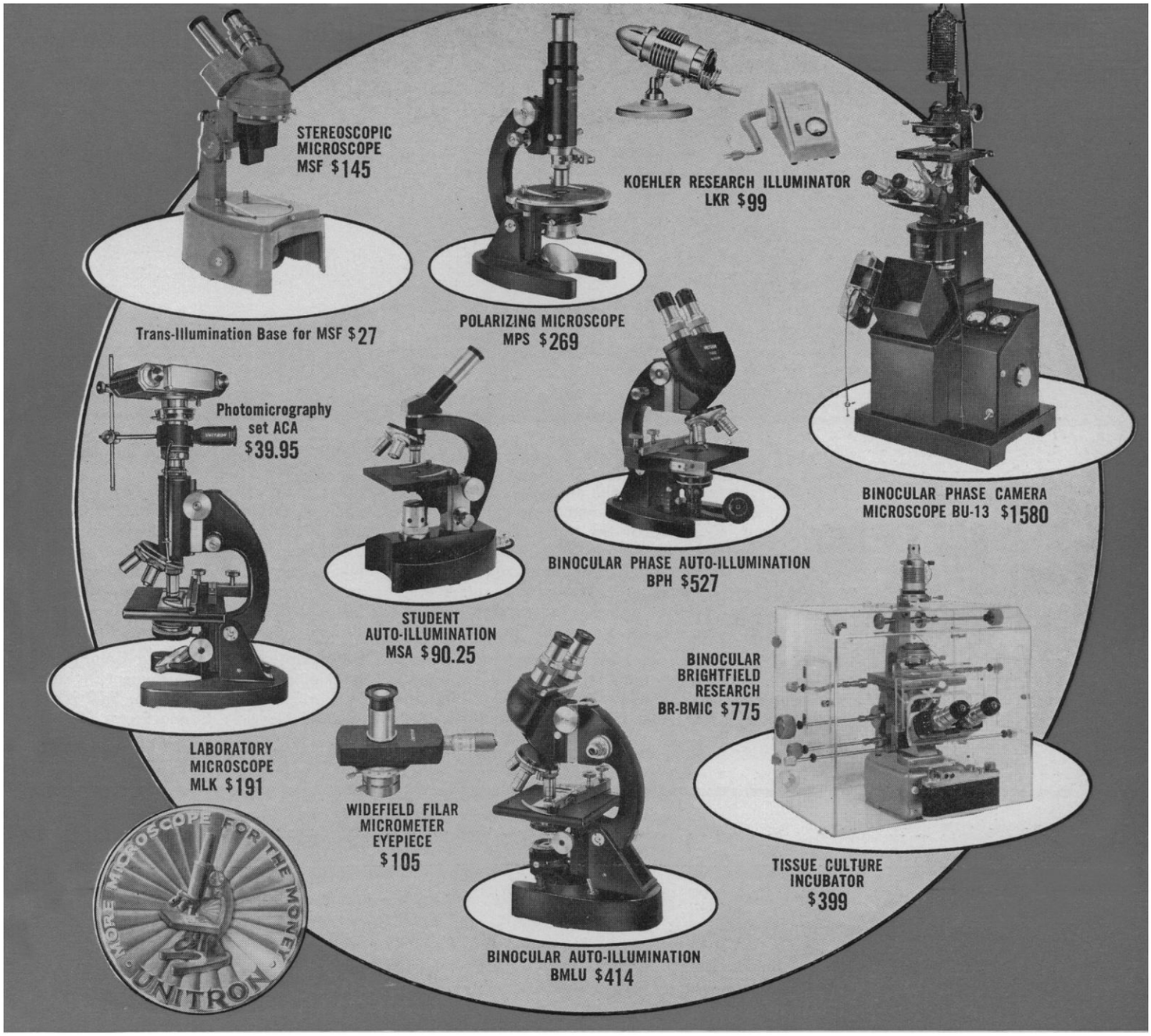

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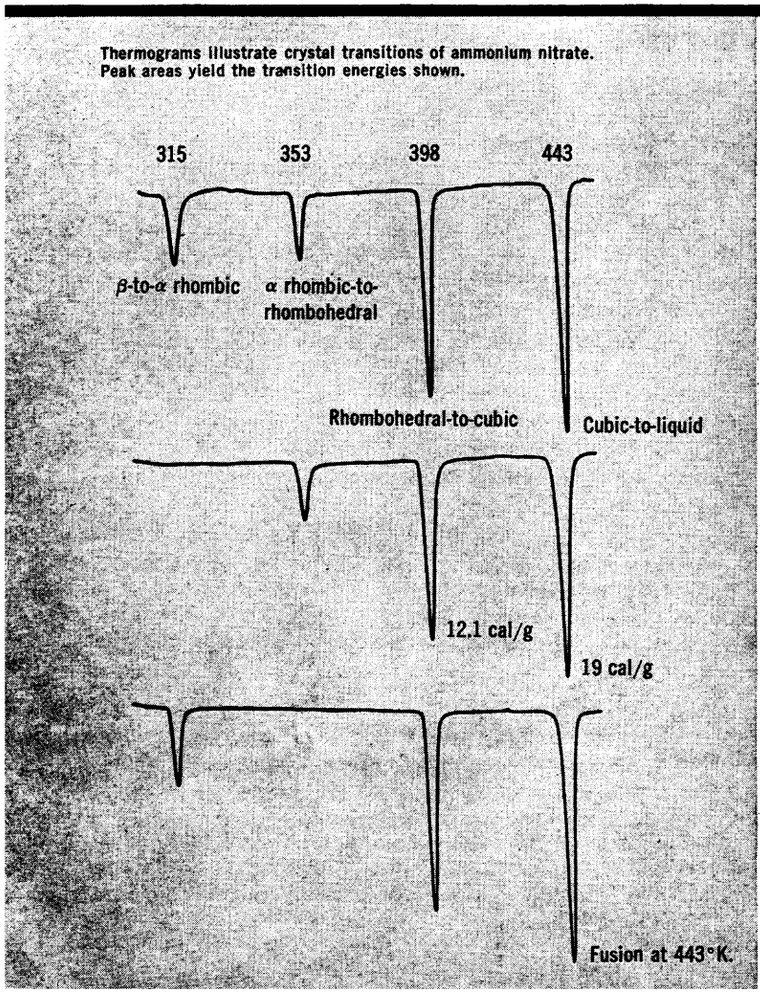

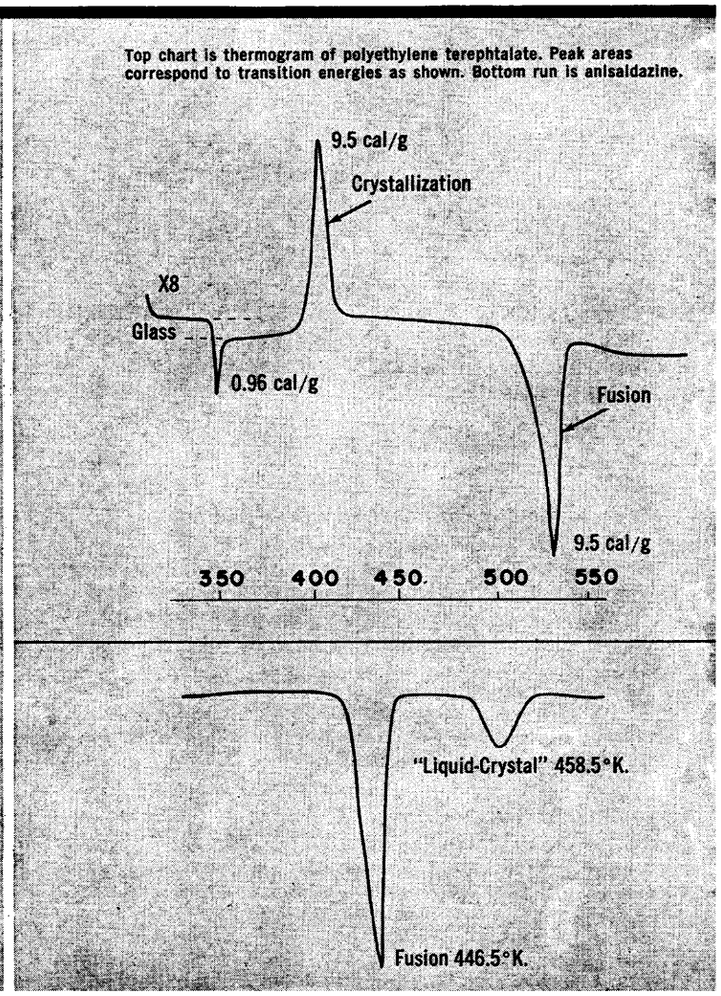

24 July 1964, Volume 145, Number 3630 **SCIENCE**

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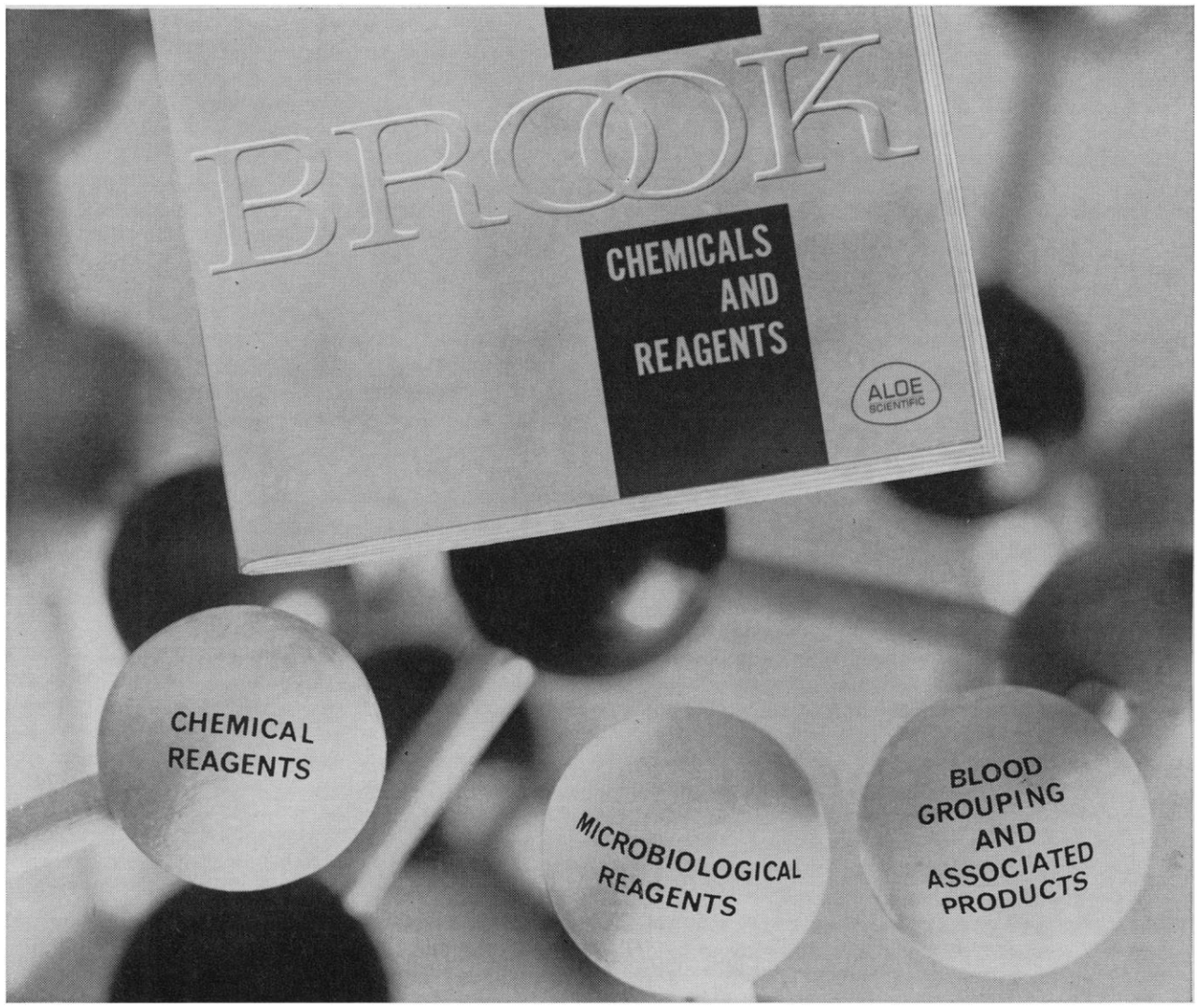
Only One Side of the Question

In the past year Congress has wrestled with problems of controlling and legislating for research and development funds, but achievements so far appear to be minuscule. One problem which has been scarcely considered is that of obtaining a multiplicity of well-founded opinions on scientific and technical programs. The authorization hearings for the $5 billion space program illustrate the point. The House and Senate committees heard extensive testimony from government witnesses representing, for example, the National Aeronautics and Space Administration. Although a majority of the nation's scientists question facets of the program, no opposing witnesses appeared. In part, this was because they were not invited; in part, because they did not seek a hearing.

In contrast, committees considering legislation in areas other than science and technology often find that many citizens ask to testify. In matters in which conflicts of self-interest exist, issues usually are well examined. For instance, committees considering legislation concerned with labor and management are presented with expert testimony from both sides. Many organizations support staffs that compile reports, prepare presentations and rebuttals, and look for special opportunities to advance their cause. In an effort to triumph, the opponents may propose fruitful new ideas. The public and Congress emerge with a sounder view of the factors involved.

There are several reasons why scientists do not seek to testify at hearings on research and development legislation. Most scientists are unaware of the schedule of impending hearings and unfamiliar with mechanisms for obtaining an audience. Only a limited number feel competent to make judgments in the diverse, highly technical areas. With few exceptions there are no staffs to aid in preparation of material. Only when highly emotional issues, such as fallout, are involved is there a semblance of broad response. A major reason why research and development legislation is not more adequately discussed is a lack of evident immediate clash of self-interest among scientists. The self-interest of those who advocate expenditures is obvious, but who makes the probing counterargument? At present, it comes not from informed witnesses but from congressmen, whose principal well-worn line is that we are spending too much money on science in general.

Failure of scientists publicly to criticize to any appreciable degree programs many deem ill-judged often stems from analysis of the balance sheet of their own self-interest. On the positive side is the consideration that the long-term interest of their profession and the nation dictates that unwise expenditures not be made. If the public loses confidence in the integrity of scientists, the sequel could be calamitous for all. But this is a nebulous possibility which does not outweigh the realities of the present. The witness in questioning the wisdom of the establishment pays a price and incurs hazards. He is diverted from his professional activities. He stirs the enmity of powerful foes. He fears that reprisals may extend beyond him to his institution. Perhaps he fears shadows, but in a day when almost all research institutions are highly dependent on federal funds, prudence seems to dictate silence.—PHILIP H. ABELSON



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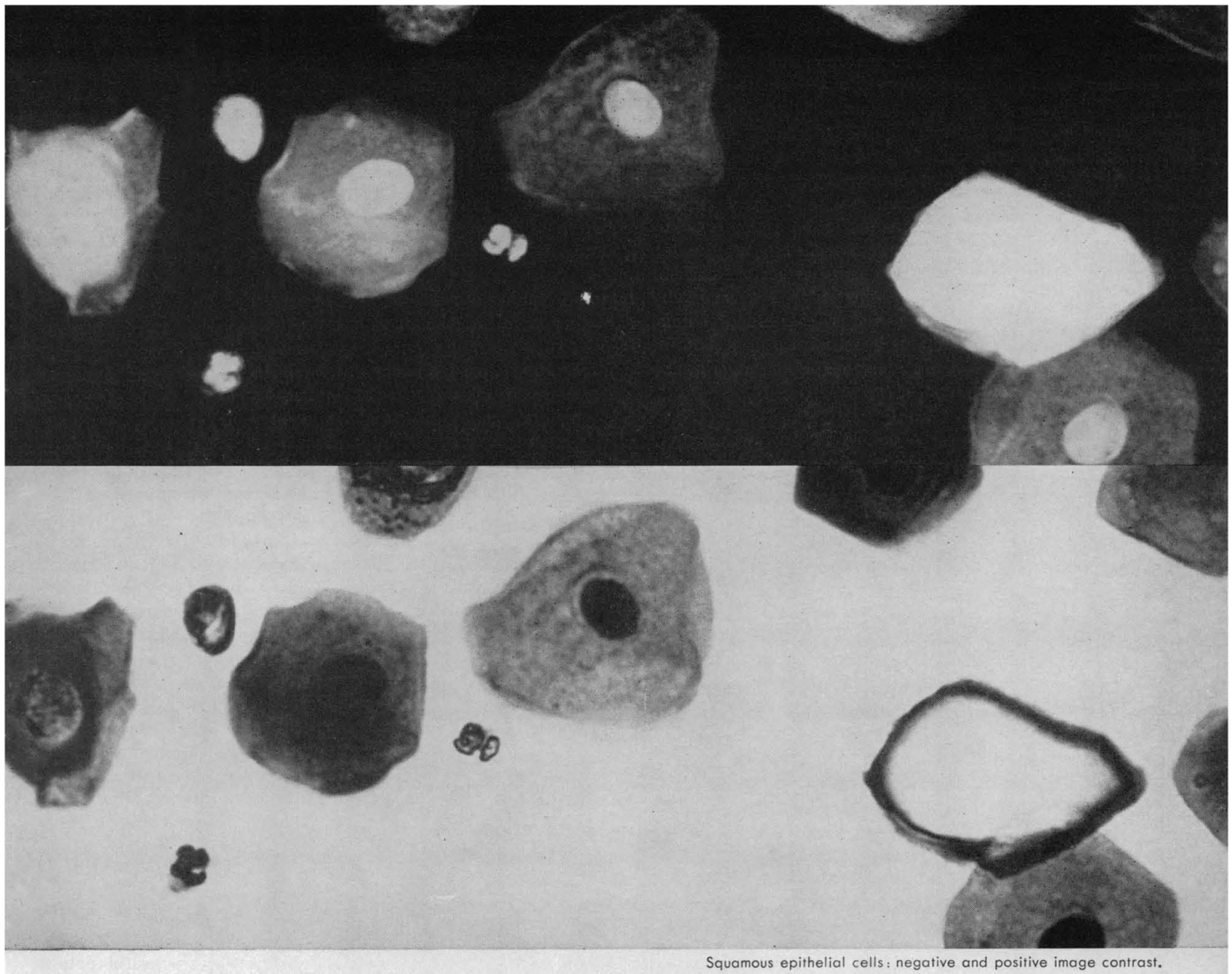

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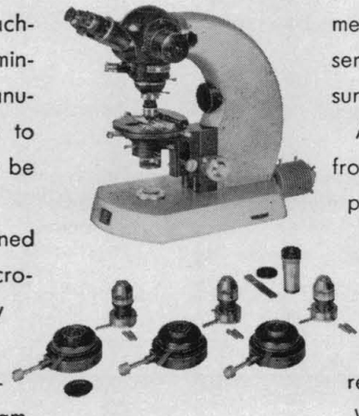

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that is, the one away from invention of gadgetry for its own sake, and toward the standardization of the most useful techniques and equipments so that usable information can be obtained in some depth and quantitative relatedness with other data.

The selection of some outstanding papers always runs the risk of accusation of bias and judgment, and this is no doubt true. What is new and interesting depends upon how much the observer knows and upon his predilections. The paper by Wally Sinaiko on international teleconferencing opened up a whole new field of research having the possibility of immediate results in our present highly insecure society. He described some of the studies being done on communications by telephone, teletype, language translation, and the TV-phone. Ward Edwards described some of his work on decision-making by use of Bayesian mathematics. We are leaving ourselves open to an accusation of bias by stating that this is only an arbitrary sample of what was an almost universally worthwhile symposium. We recommend that interested readers obtain a copy of the proceedings from IEEE headquarters (Box A, Lenox Hill Station, New York, N.Y. 10021).

W. E. WOODSON
M. FREITAG
General Dynamics/Astronautics, San Diego, California

Forthcoming Events

August

2–3. **Ophthalmic Biochemistry**, first intern. conf., Woods Hole, Mass.. (S. Lerman, Univ. of Rochester, Rochester, N.Y.)

2–4. American Assoc. of **Colleges of Pharmacy**, New York, N.Y. (C. W. Bliven, 1507 M St., NW, Washington, D.C. 20005)

2–6. National **Medical** Assoc., 69th annual, Washington, D.C. (Administrative Secretary, 520 W St., NW, Washington, D.C. 20001)

2–7. American **Pharmaceutical** Assoc., 111th annual, New York, N.Y. (G. B. Griffenhagen, Div. of Communications, 2215 Constitution Ave., NW, Washington, D.C.)

2–8. **Applied Psychology**, 15th intern. conf., Ljubljana, Yugoslavia. (B. Petz, Inst. of Psychology of Zagreb, Djure Salaja b.b., Zagreb, Yugoslavia)

2–8. **Reactivity of Solids**, 5th intern. symp., Munich, Germany. (B. Stuke, Physikalische-Chemisches Institut, Sophienstr. 11, Munich)

3–5. Compounds of Interest in **Nuclear Reactor Technology**, intern. symp.,

Boulder, Colo. (J. T. Waber, Los Alamos Scientific Laboratories, P.O. Box 1663, Los Alamos, N.M. 87544)

3–7. Instrument Soc. of America, **instrumentation** conf., Geneva, N.Y. (H. S. Kindler, 530 William Penn Place, Pittsburgh, Pa.)

3–7. World Federation for **Mental Health**, 17th annual, Bern, Switzerland. (F. Cloutier, 1, rue Gevray, Geneva, Switzerland)

3–8. International **Years of the Quiet Sun**, regional symp., Buenos Aires, Argentina. (J. G. Roederer, Facultad de Ciencias, Perú 272, Buenos Aires)

3–10. **Anthropologists and Ethnologists**, 7th world conf., Moscow, U.S.S.R. (American Anthropological Assoc., 1530 P St., NW, Washington, D.C. 20005)

3–12. **Botanical** Congr., 10th intern., Edinburgh, Scotland. (Miss S. C. Penny, 5 Hope Park Sq., Edinburgh 8)

4–7. **Poultry Science** Assoc., annual, Minneapolis, Minn. (E. L. Johnson, Dept. of Poultry Science, Univ. of Minnesota, St. Paul 55101)

4–17. Methods of **Hydrological Forecasting**, 3rd inter-regional seminar, World Meteorological Organization/UN Economic Commission for Asia and the Far East, Bangkok, Thailand. (WMO, Secretariat, Geneva, Switzerland)

5–7. Sonic Investigations on **Internal Damping in Solids**, symp., London, England (Administration Assistant, Institute of Physics and the Physical Society, 47 Belgrave Square, London, S.W.1)

5–12. **Atmospheric Radiation**, symp., World Meteorological Organization/Intern. Union of Geodesy and Geophysics, Leningrad, U.S.S.R. (Secretariat, WMO, Geneva, Switzerland)

5–15. **High Energy Physics**, 12th intern. conf., Dubna, U.S.S.R. (M. L. Goldberger, Commission on High Energy Nuclear Physics, IUPAC, Princeton Univ., Princeton, N.J. 08540)

6–11. American **Podiatry** Assoc., New York, N.Y. (F. A. Kalbacher, American Podiatry Assoc., 3301 16th St., NW, Washington, D.C. 20010)

7–14. Scientific Study on **Mental Retardation**, intern. congr., Copenhagen, Denmark. (A. Dupont, Statens Ands-svageforsorg, Nyropsgade 28.2, Copenhagen 5)

9–12. **Heat Transfer**, 7th natl. conf., Cleveland, Ohio. (W. Chenoweth, American Inst. of Chemical Engineers, 345 E. 47 St., New York 17)

9–13. American Soc. of **Animal Science**, Knoxville, Tenn. (J. E. Oldfield, Dept. of Animal Science, Oregon State Univ., Corvallis)

9–14. South American Union of **Engineers'** Federations, 10th conv., Rio de Janeiro, Brazil. (Federacão Brasileira de Associacões de Engenheiros, Caixa Postal 1229, Rio de Janeiro)

10–14. **Structural Developments in Inorganic Chemistry**, New Hampton, N.H. (W. G. Parks, Dept. of Chemistry, Univ. of Rhode Island, Kingston)

10–15. Pan American Federation of **Engineering** Socs., 8th biennial conv., Caracas, Venezuela. (L. K. Wheelock, Engineers Joint Council, 345 E. 47 St., New York 10017)

11–14. American Soc. for **Pharmacology and Experimental Therapeutics**, San Francisco, Calif. (H. G. Mandel, George Washington Univ. Medical School, Washington, D.C. 20005)

12–14. **Ballistic Missile and Space Technology**, 9th symp., U.S. Naval Training Center, San Diego, Calif. (C. Morrow, Aerospace Corp., P.O. Box 95085, Los Angeles, Calif. 90045)

12–14. **Galaxies**, preliminary conf., Uppsala, Sweden. (T. Page, Van Vleck Observatory, Wesleyan Univ., Middletown, Conn. 06457)

12–14. **X-Ray Analysis** Applications, 13th annual conf., Denver, Colo. (W. G. Mueller, Metallurgy Div., Univ. of Denver, Denver Research Inst., Denver 80210)

13–15. International Soc. for **Horticultural Science**, Edinburgh, Scotland. (G. de Bakker, Le v.d. Boschstraat 4, The Hague, Netherlands)

16–21. **Histochemistry and Cytochemistry**, intern. congr., Frankfurt am Main, Germany. (T. H. Schiebler, Anatomisches Institut der Universität, Koellikerstr. 6, 87 Würzburg, Germany)

16–23. Latin American **Schools of Medicine**, 4th conf., Pocos de Caldas, Brazil. (O. Versiani Caldeira, Univ. of Minas Gerais Medical School, Belo Horizonte, Minas Gerais, Brazil)

16–24. **Human Economy**, conf., Inst. of Paper Chemistry, Appleton, Wis. (A. N. McLeod, IPC, Appleton)

17–20. American Assoc. of **Clinical Chemists**, 16th natl., Boston, Mass. (F. F. Ronan, AACC, 19 Bay State Rd., Boston 15)

17–20. **Natural Ultra Low Frequency Electromagnetic Fields**, symp., Boulder, Colo. (W. H. Campbell, National Bureau of Standards, Boulder)

17–21. **Combustion**, 10th intern. symp., Cambridge, England. (Combustion Inst., 986 Union Trust Bldg., Pittsburgh 19, Pa.)

17–21. **Cryogenic Engineering**, conf., Philadelphia, Pa. (K. D. Timmerhaus, Engineering Research Center, Ketchum 129, Univ. of Colorado, Boulder)

17–21. **Simulation in Space Technology**, Blacksburg, Va. (F. J. Maher, Virginia Polytechnic Inst., Blacksburg)

17–22. International **Astronomical** Union, symp., Thessaloniki, Greece. (Maj. B. R. Agins, Air Force Office of Scientific Research, SRMA, Washington, D.C.)

17–22. **Cardiology**, 4th European congr., Prague, Czechoslovakia. (H. Kafka, Karlovo nám. 32, Prague 2)

17–22. **Endocrinology**, 2nd intern. congr., London, England. (A. S. Mason, London Hospital, Whitechapel, London, E.1)

17–22. **Social Psychiatry**, 1st intern. congr., London, England. (J. Bierer, 7 Hollycroft Ave., London, N.W.3)

17–28. **Molecular Biophysics**, intern. inst., Squaw Valley, Calif. (Prof. Weissbluth, Biophysics Laboratory, Stanford Univ., Stanford, Calif.)

18–20. International Assoc. of **Milk and Food Sanitarians**, Portland, Ore. (H. L. Thomasson, P.O. Box 437, Shelbyville, Ind.)

19–21. Physiology of **Digestion in the Ruminant**, 2nd intern. symp., Ames, Iowa. (R. W. Dougherty, Box 70, Ames)

20–21. National **Council of Teachers of Mathematics**, Minneapolis, Minn. (J. D. Gates, NCTM, 1201 16th St. NW, Washington, D.C. 20036)

22. American Inst. of **Ultrasonics in Medicine**, 9th annual, Boston, Mass. (W. J. Fry, Biophysical Research Laboratory, Univ. of Illinois, Urbana)

22–24. **History of Astronomy**, symp., Hamburg, Germany. (B. Sticker, Institut für Geschichte der Naturwissenschaften, Universität Hamburg, Hartnungstr. 5, 2 Hamburg 13, Germany)

22–28. American Soc. of **Human Genetics**, Boulder, Colo. (S. H. Boyer, Johns Hopkins Hospital, Baltimore, Md.)

23. American Assoc. of **Electromyography**, annual, Boston, Mass. (M. K. Newman, 16861 Wyoming Ave., Detroit, Mich. 48221)

23–26. American **Phytopathological** Soc., Lafayette, Ind. (J. R. Shay, Purdue Univ., Lafayette)

23–26. **Soil Conservation** Soc. of America, 19th annual, Jackson, Miss. (SCS, 7515 Northeast Ankeny Rd., Ankeny, Iowa)

23–28. American Inst. of **Biological Sciences**, annual, Boulder, Colo. (AIBS, 2000 P St., NW, Washington, D.C.)

The following societies will hold meetings in conjunction with the AIBS meeting:

American Bryological Society
American Fern Society
American Fisheries Society
American Microscopical Society
American Society for Horticultural Science
American Society of Human Genetics
American Society of Parasitologists
American Society of Plant Physiologists
American Society of Plant Taxonomists
American Society of Zoologists
Biometric Society ENAR-WNAR
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Genetics Society of America
Mycological Society of America
National Association of Biology Teachers
Nature Conservancy
Phi Sigma Society
Phycological Society of America
Society for Industrial Microbiology
Society for the Study of Development and Growth
Society of Nematologists
Society of Protozoologists
Tomato Genetics Cooperative

23–28. American Congr. of **Physical Medicine and Rehabilitation**, Boston, Mass. (G. Gullickson, Jr., 30 N. Michigan, Chicago, Ill.)

23–28. **Conservation Education**, conf., Tacoma, Wash. (C. Boyce, Office of the Superintendent of Public Instruction, Olympia, Wash.)

24–26. American Inst. of **Aeronautics and Astronautics**, Los Angeles, Calif. (AIAA, 1290 Sixth Ave., New York, N.Y.)

24–26. Society for **Cryobiology**, annual, Washington, D.C. (V. P. Perry, Tissue Bank Dept., U.S. Naval Medical School, National Naval Medical Center, Bethesda, Md. 20014)

24–26. **Education in the Nuclear Power Era**, conf., Gatlinburg, Tenn. (M. L. Nel-

son, Education Div., Oak Ridge Natl. Laboratory, P.O. Box 117, Oak Ridge, Tenn.)

24–26. **Mathematical** Assoc. of America, summer meeting, Univ. of Massachusetts, Amherst. (H. M. Gehman, Univ. of Buffalo, Buffalo 14, N.Y.)

24–27. American Soc. for **Pharmacology** and Experimental Therapeutics, Univ. of Kansas, Lawrence, Kan. (E. B. Cook, The Society, 9650 Wisconsin Ave., NW, Washington, D.C.)

24–27. **Biological Photographic** Assoc., annual, New York, N.Y. (C. H. Weiss, 81 Bedford St., New York 14)

24–27. American **Hospital** Assoc., Chicago, Ill. (E. L. Crosby, 840 N. Lake Shore Dr., Chicago 11)

24–27. **Toxicology and Occupational Medicine**, 4th inter-American conf., Miami Beach, Fla. (W. Machle, Univ. of Miami School of Medicine, Coral Gables, Fla.)

24–28. International Council of the **Aeronautical Sciences**, 4th congr., Paris, France. (American Inst. of Aeronautics and Astronautics, 2 E. 64 St., New York, N.Y. 10021)

24–28. **Astrodynamics Guidance and Control**, conf., Los Angeles, Calif. (K. Watanabe, 4731 B Engineering Building III, University of California, Los Angeles 24)

24–28. American **Astronautical** Soc., military space applications symp., Stanford, Calif. (AAS, 516 Fifth Ave., New York, N.Y.)

24–28. Society for **Industrial and Applied Mathematics**, Amherst, Mass. (W. S. Dorn, T. J. Watson Research Center, I.B.M., P.O. Box 218, Yorktown Heights, N.Y.)

24–28. Scandinavian **Mathematical** Congr., Copenhagen, Denmark. (Secretariat, The Congress, c/o Mathematical Inst., H. C. Ørsted Inst., Universitetsparken 5, Copenhagen Ø)

24–28. American **Mathematical** Soc., New York, N.Y. (G. L. Walker, AMS, 190 Hope St., Providence, R.I.)

24–28. **Preventive Cardiology,** first intern. conf., Burlington, Vt., (W. Raab, Preventive Heart Reconditioning Foundation, 206 Summit St., Burlington, Vt.)

24–28. **Water Pollution Research**, 2nd intern. conf., Tokyo, Japan. (Water Pollution Control Federation, 4435 Wisconsin Ave., Washington, D.C. 20016)

24–29. **Psychotherapy**, 6th intern. congr., London, England. (F. Pannell, The Congress, 11 Whitehall Ct., London, S.W.1)

24–29. Preparation and Biomedical Application of **Labeled Molecules**, Venice, Italy. (C. Colombini, Center of Nuclear Chemistry, Univ. of Padova, Via Loredan 6, Padova, Italy)

24–3. International Assoc. of **Agricultural Economists**, 12th triennial conf., Lyons, France. (French Organization Committee of the Conference, 4, rue de Lasteyrie, Paris 16°, France)

25–27. Association for **Computing Machinery**, 19th annual, Philadelphia, Pa. (H. S. Bright, Philco Computers, Willow Grove, Pa.)

25–28. Western Electronics Show and Conv. (WESCON), Inst. of **Electrical and Electronics Engineers**, summer meeting,

Los Angeles, Calif. (R. R. Bennett, Suite 1920, 3600 Wilshire Blvd., Los Angeles)

25–29. **Audiology**, 7th intern. congr., Copenhagen, Denmark. (H. W. Ewertsen, c/o State Hearing Centre, 7 D. Tvaergade, Copenhagen K)

25–3. International **Astronomical** Union, 12th general assembly, Hamburg, Germany. (D. A. Bell, c/o Royal Greenwich Observatory, Hertsmonceaux Castle, Hailsham, Sussex, England)

26–2. **British Association for the Advancement of Science**, 126th annual, Southampton, England. (BAAS, 3 Sanctuary Bldgs., London, S.W.1, England)

26–2. **Logic, Methodology, and Philosophy of Science**, intern. conf., Jerusalem, Israel. (Y. Bar-Hillel, Hebrew Univ., Jerusalem)

26–3. **Electron Microscopy**, 3rd European regional conf., Prague, Czechoslovakia. (Organizing Committee, Albertov 4, Prague 2)

27. American Soc. for **Horticultural Science**, Amherst, Mass. (R. E. Marshall, AMHS, Dept. of Horticulture, Michigan State Univ., East Lansing)

27–28. **Activation Analysis**, Glasgow, Scotland. (J. M. A. Lenihan, Western Regional Hospital Board, 9 W. Greham St., Glasgow, C.4)

27–29. Pacific Slope **Biochemical** Conf., San Francisco, Calif. (M. P. Gordon, Dept. of Biochemistry, Univ. of Washington, Seattle 98105)

27–29. **Reactive Intermediates in Organic Chemistry**, symp., Quebec City, P.Q., Canada. (C. R. Engel, Faculté des Sciences, Université Laval, Quebec City)

28–3. **Neurology**, 8th intern. congr., Vienna, Austria. (H. Hoff, Medizinische Fakultät, Neurologische und Psychiatrische Abteilung, Vienna 9)

29. **Gravity Research Foundation**, annual, New Boston, N.H. (The Foundation, Gravity Village, New Boston)

29–5. International **Epidemiological** Assoc., 4th intern. meeting, Princeton, N.J. (L. Breslow, Div. of Preventive Medical Services, California Dept. of Public Health, 2151 Berkeley Way, Berkeley 95704)

30–2. Electronic Properties and Applications of **Solid-Solid Interfaces**, Boston, Mass. (F. S. Gardner, Office of Naval Research, 495 Summer St., Boston, Mass. 02110)

30–3. **Illuminating Engineering** Soc., Miami Beach, Fla. (A. D. Hinckley, IES, 345 E. 47 St., New York 10017)

30–4. American **Chemical** Soc., fall natl. meeting, Chicago, Ill. (A. H. Emery, 1155 16th St., NW, Washington, D.C.)

30–4. Institute of **Mathematical Statistics**, annual, Amherst, Mass. (D. M. Gilford, Mathematical Sciences Division, Office of Naval Research, Washington, D.C.)

30–4. American **Ornithologists'** Union, Lawrence, Kan. (L. H. Walkinshaw, 1703 Wolverine Tower, Battle Creek, Mich.)

30–5. **Applied Mechanics**, 11th intern. congr., Munich, Germany. (Organisations-Sekretariat des Mechanik-Kongresses, Inst. für Mechanik, Arcisstr. 21, Munich 2)

30–5. **Cell Biology**, 11th intern. congr., Providence, R.I. (J. W. Wilson, Dept. of Biology, Brown Univ., Providence)

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wealthier institutions to the poorer ones: Brown University and Tougaloo College (outside of Jackson, Mississippi); the University of Michigan and Tuskegee Institute; and the University of Wisconsin and three southern colleges, Texas Southern, North Carolina College at Durham, and North Carolina A & T.

The University of Wisconsin exchange program, which is financed by a $300,000 grant from the Carnegie Corporation, will involve exchanges of faculty members for periods ranging from 1 week to a full year. Faculty members from Wisconsin will serve on combined teams to work on curriculum revision, new teaching techniques, in-service training, and a host of other academic problems. Faculty members from the Negro colleges will do some teaching, complete work for advanced degrees, and generally study the academic life of Wisconsin. The Brown-Tougaloo exchange is basically similar but also involves exchange of administrative personnel, and the university has, in effect, committed itself to active fund-raising for Tougaloo to help the poorer college improve its facilities.

Courage, and Convenience

There should be no doubt that these exchanges will pose difficulties for both sides. Relations between the Negro colleges and southern state legislatures are extremely delicate. The colleges involved in the North Carolina-Wisconsin exchange are almost wholly dependent on the state for funds. Even a private institution such as Tougaloo is dependent on the good will of the state for the licensing of its graduates to serve as teachers in Mississippi schools—and in the case of Tougaloo this "good will" is already heavily damaged by the proclivity of the college's students and staff to engage in civil rights demonstrations. Local white politicians, embarrassed and angered by this latest manifestation of northern carpetbagging, have tried in some instances to dissuade Negro college administrators from the exchanges. Without question, the colleges' persistence is an act of courage and commitment.

For the northern universities, the problem is not so much one of courage as of convenience. For the exchanges to work, departments and administrations must actively encourage their best faculty members to leave the campus for a semester or year, sometimes—especially at first—without sufficient notice to plan for replacements. In addition, the colleges have to devise ways of utilizing the southern professors who come to their campuses, again with as little disruption as possible to their regular programs. How these problems will be worked out is not yet clear. But other institutions who are considering exchanges, and the U.S. Congress will be watching the first ones closely. Congress now has before it a proposal by Representative Edith Green (D–Ore.) to provide $5 million annually for a "Domestic Faculty Exchange Act" which would establish programs similar to those described on a broader scale. The House Education and Labor Committee is expected to begin hearings on the proposal shortly.

In addition to the institutes and the exchanges, a myriad of other projects have been begun, concentrating on improving the quality of Negro education at all levels, with a view toward raising the beginning level of college students and increasing scholarship opportunities for Negro students at established institutions throughout the country. Not all the programs are perfectly planned or represent the most sensible allocation of funds, and some will have little permanent impact. Several colleges and universities in the North, for example, hastily initiated summer sessions for neighboring Negro students, without preparing teaching plans (or teachers) very different from the daily grind the students reject, and without developing guidance programs to follow through on whatever summertime progress was made. At least one major northern university, to take an example of a different sort, put three full-time staff members (and considerable effort and money) on the job of recruiting talented Negro undergraduates last year—and managed to produce only 16 students, all of whom, it was thought, would have ended up in a fairly good college anyway.

Despite occasional mistakes and some confusion, however, there is no doubt that what is going on represents a massive and purposeful attack on problems until recently very poorly understood. A point not at all neglected by the educators and specialists who have been developing the new programs is that while they have much to teach, they also have much to learn.—ELINOR LANGER

Announcements

The **Commission on Undergraduate Education in the Biological Sciences** has moved from Washington University, St. Louis, Mo., to Washington, D.C. Correspondence may be sent to V. A. Greulach, Executive Director, George Washington University, 2023 G St., NW, Washington, D.C. 20006.

The U.S. Public Health Service has announced a change in deadline dates for the receipt of applications for **research grants**. The new dates, effective 1 January 1965, have been established to allow more time for staff review of applications before they are presented to the nonfederal advisory review panels.

The new deadlines for new and supplemental applications are: 1 October, 1 February, and 1 July. The respective council/committee meetings are: March, June-July, and November.

The new deadlines for renewal applications are: 1 September, 1 January, and 1 June. The respective council/committee meetings are: March, June-July, and November.

No deadline changes have been made for noncompeting continuation applications or for applications for other types of support.

Meeting Notes

Papers are invited for presentation at a symposium on the **inelastic scattering of neutrons**, scheduled 15–19 December in Bombay, India. It will be sponsored by the International Atomic Energy Agency. The topics for discussion will center around experimental and theoretical studies, including experimental techniques and facilities, dynamic properties of solids and liquids, molecular energy levels and molecular motion, neutron interaction with gases, and dynamics of magnetic systems. Abstracts of 250 to 350 words are required. Deadline for abstracts: *20 September*; for completed manuscripts: *9 October*. (J. H. Kane, International Conferences Branch, Division of Special Projects, U.S. Atomic Energy Commission, Washington, D.C. 20545)

About 55 papers will be presented 15–17 October during the second international conference on **beryllium** metallurgy and technology. The meeting will take place at the Franklin Institute, Philadelphia, and will include sessions on purification and alloying studies, physical metallurgy, process metallurgy, and design and application of beryllium structures. (D. A. Parks, 345 E. 47 St., New York 10017)

Scientists in the News

B. Theodore Cole, biology professor at the University of South Carolina, has been appointed head of the department.

Robert H. Felix, director of the National Institute of Mental Health since 1949, has been appointed professor of psychiatry and dean of the medical school at St. Louis University. He will retire from NIMH 1 October.

Ryukichi Sawada, physics professor at Kyushu University, Japan, has joined the National Center for Atmospheric Research, Boulder, Colorado, as a visiting scientist in atmospheric studies, until next April.

John O. Corliss, professor of zoology at the University of Illinois, has been appointed head of the department of biological sciences at the university's new college of liberal arts and sciences, Chicago, as of 1 September.

Milton R. J. Salton has been named professor and chairman of the department of microbiology at New York University's medical school and postgraduate medical school. He has been a professor of microbiology at the University of New South Wales, Sydney, Australia.

Bodil Schmidt-Nielsen, associate research professor in zoology and physiology at Duke University, will become professor of biology at Western Reserve University in September.

Planned Parenthood-World Population recently appointed **Frederick S. Jaffe** vice president in charge of program planning. He had been director of special program development and associate director of information and education.

Erratum: The ranges of the Beckman IR-10 and IR-12 spectrophotometers ("What's new in research instruments," 15 May, p. 894) should have been described, respectively, as 4000 to 300 cm^{-1} and 4000 to 200 cm^{-1}.

Erratum: In the book review by G. E. Erikson (*Science*, 17 July, p. 256), the sentence in line 4, column 3, page 256, should read "Andrews reviews a whole universe *of behavior* in 'The displays of the primates'. . . ." Line 8, column 1, page 257, should read "the task of relating karyotype *to* taxonomy."