

SCIENCE

14 January 1972

Vol. 175, No. 4018

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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COVER

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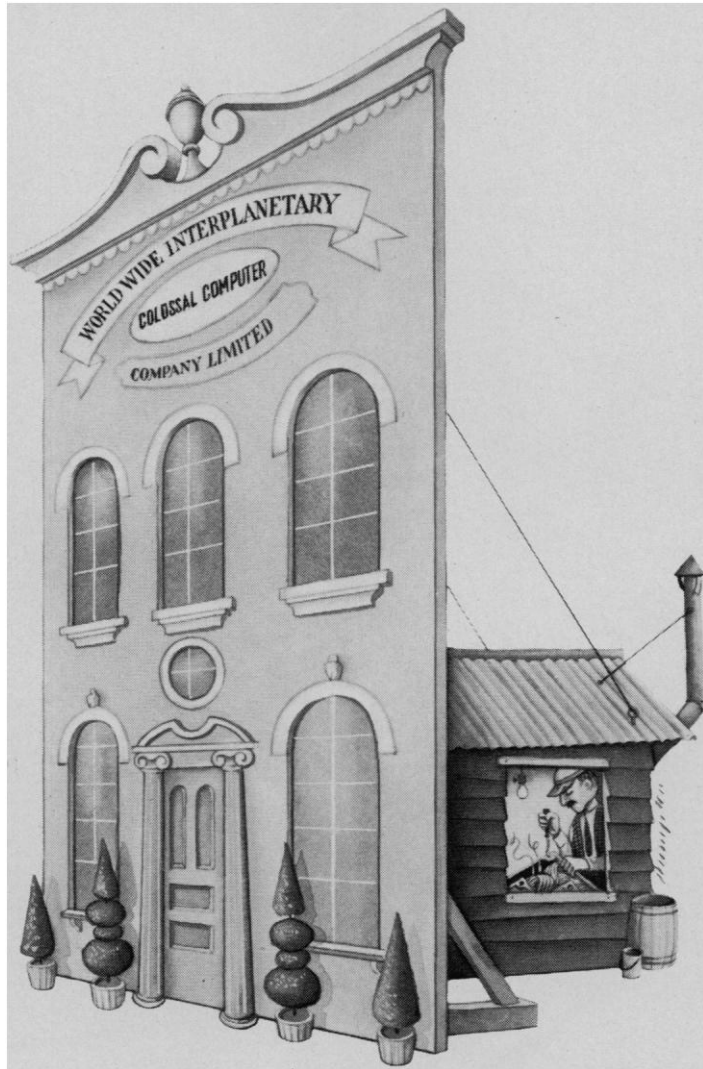
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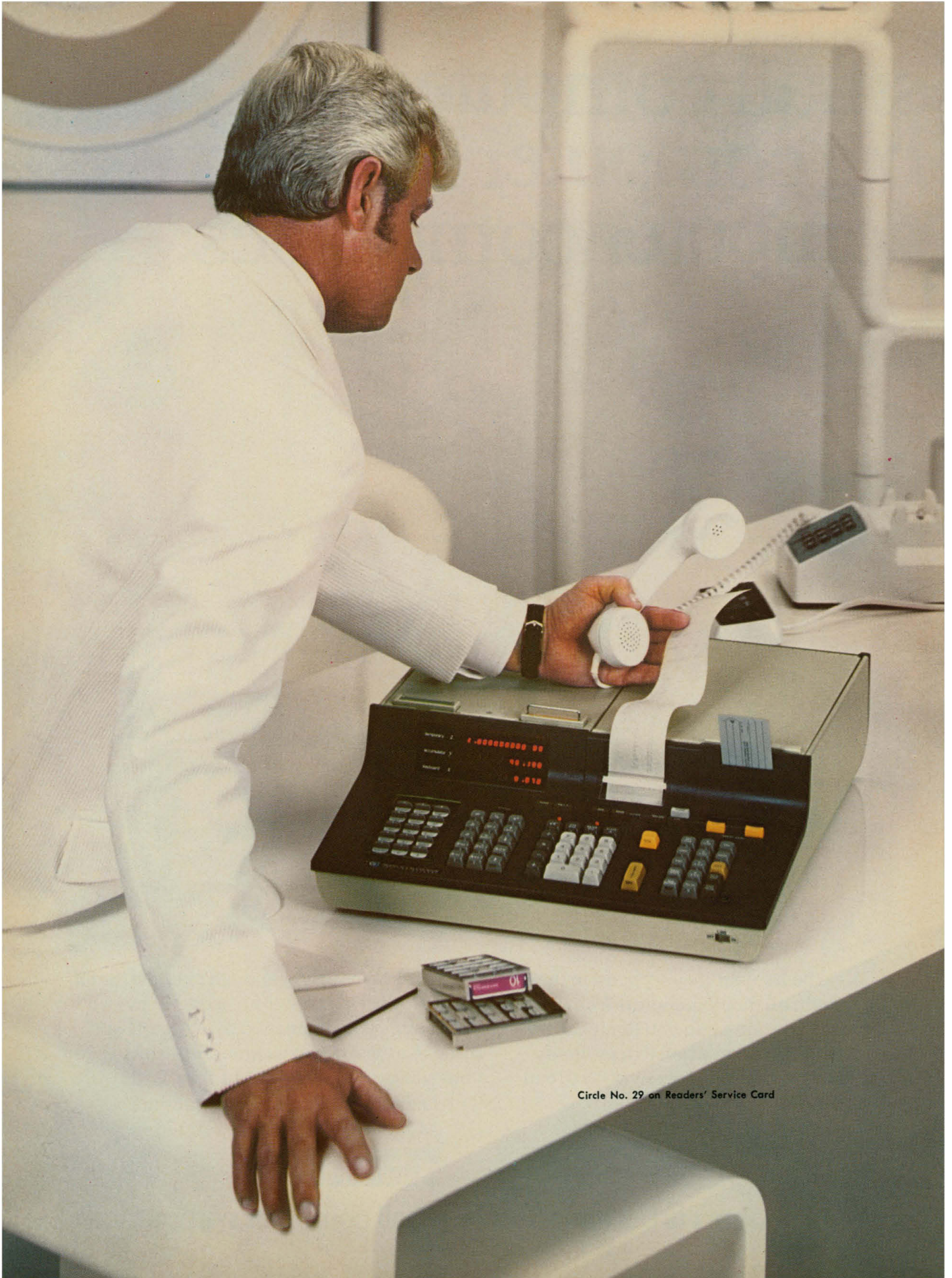
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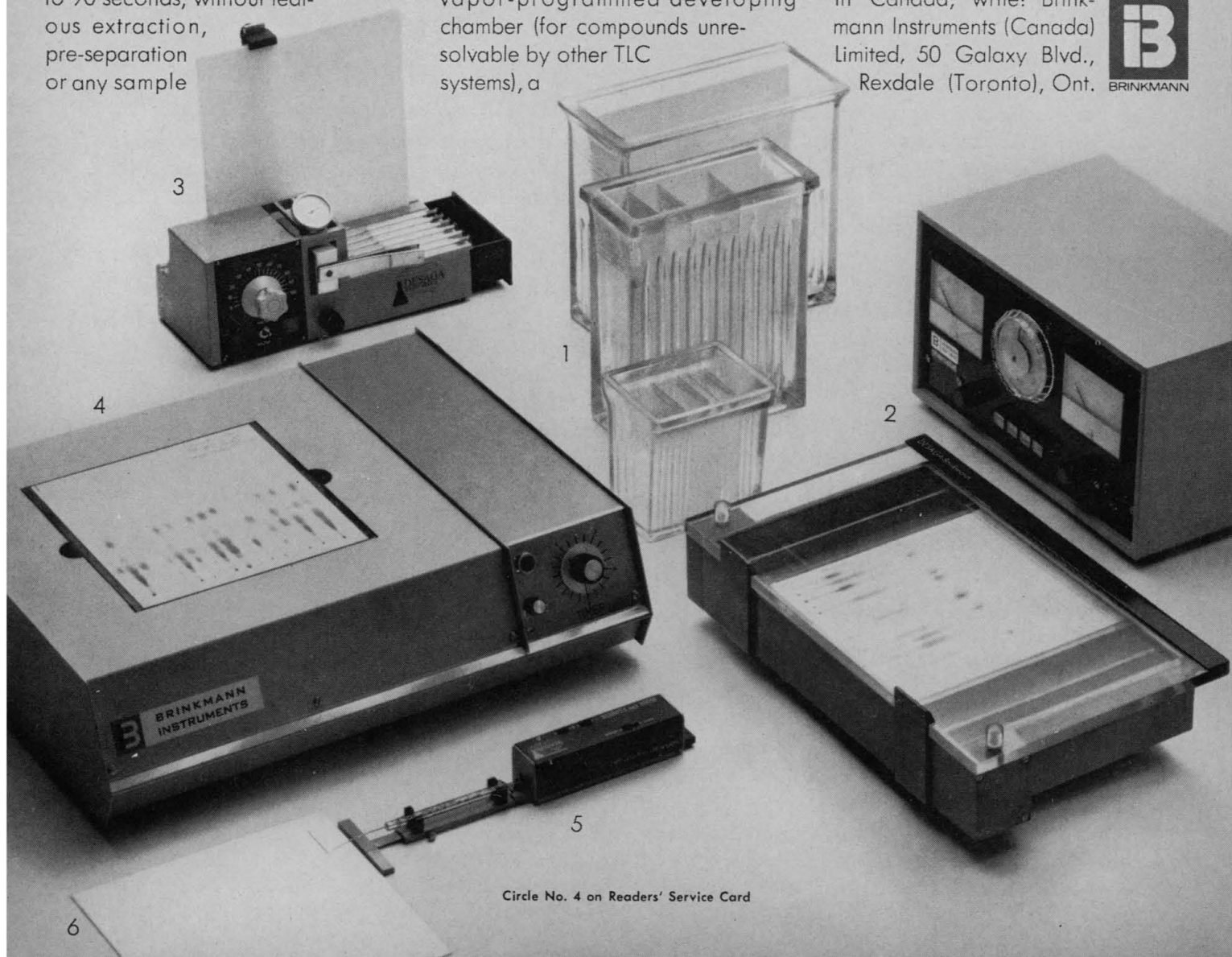
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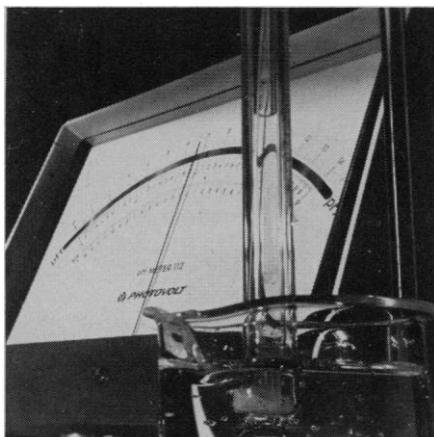
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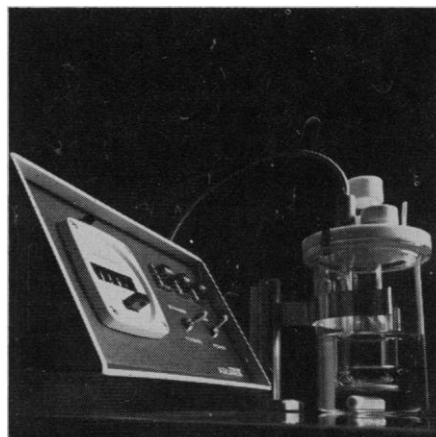
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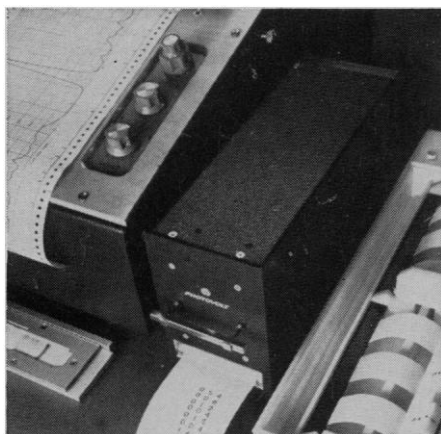
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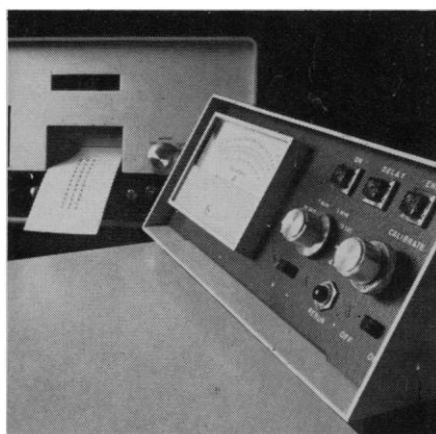
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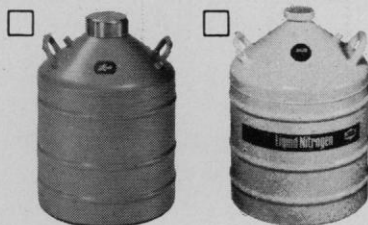
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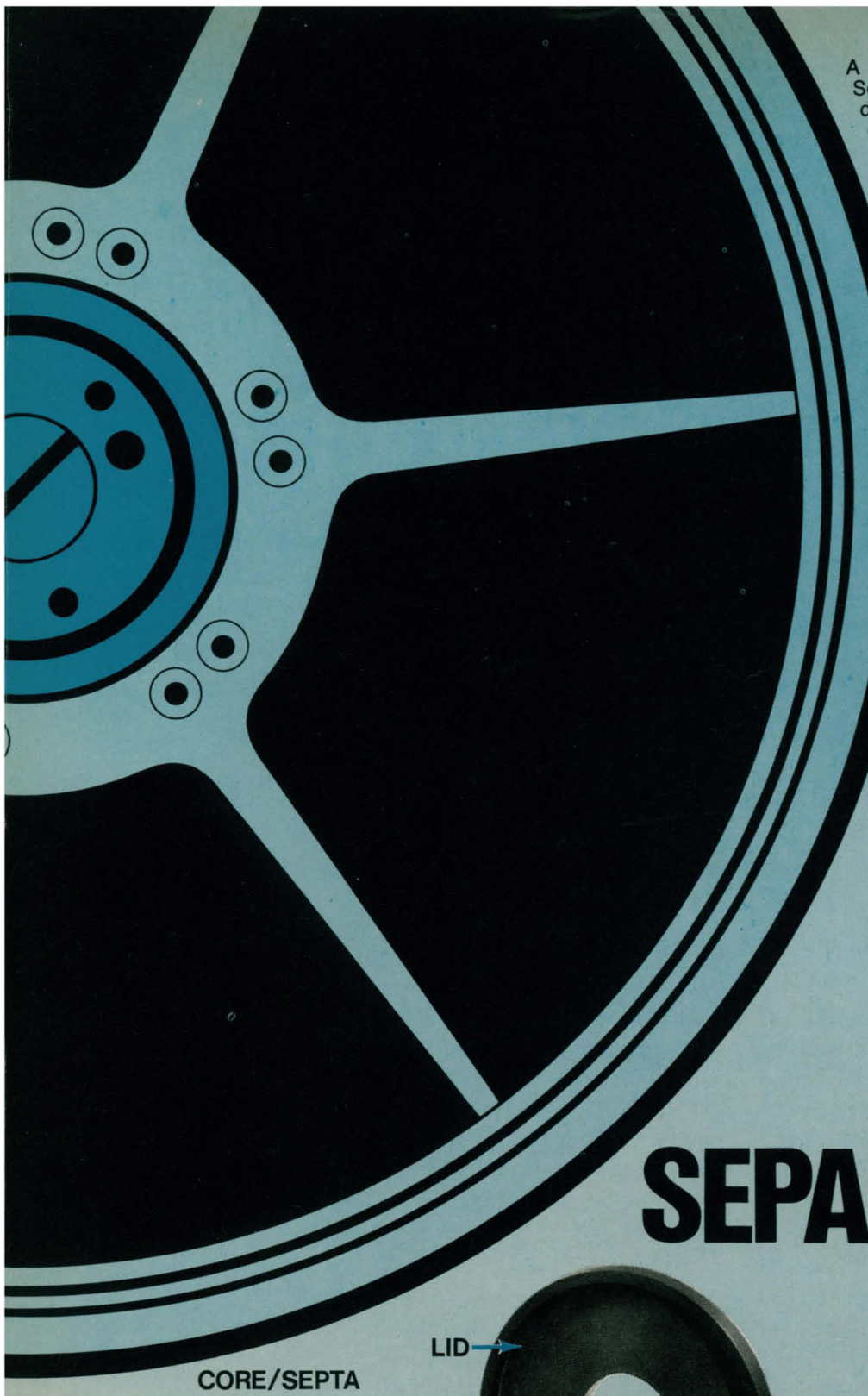
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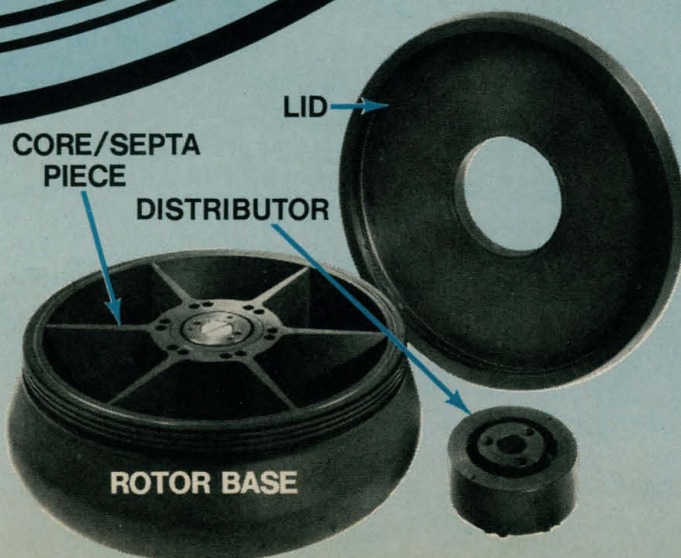
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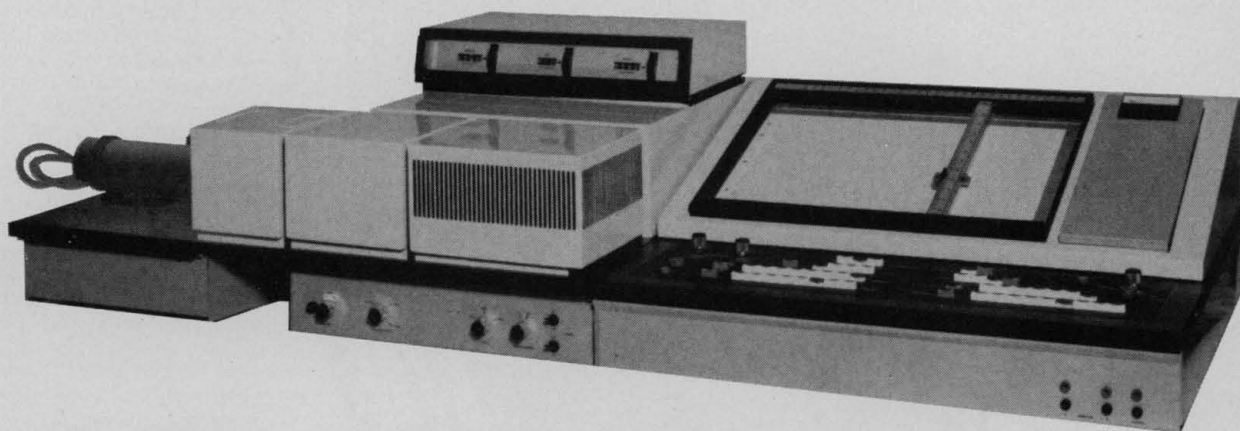
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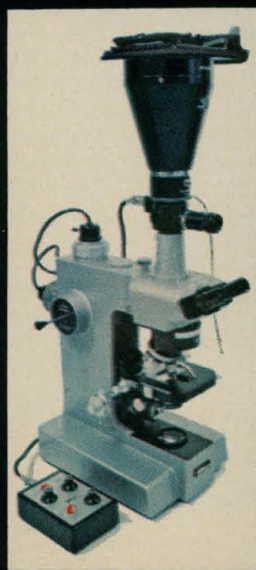
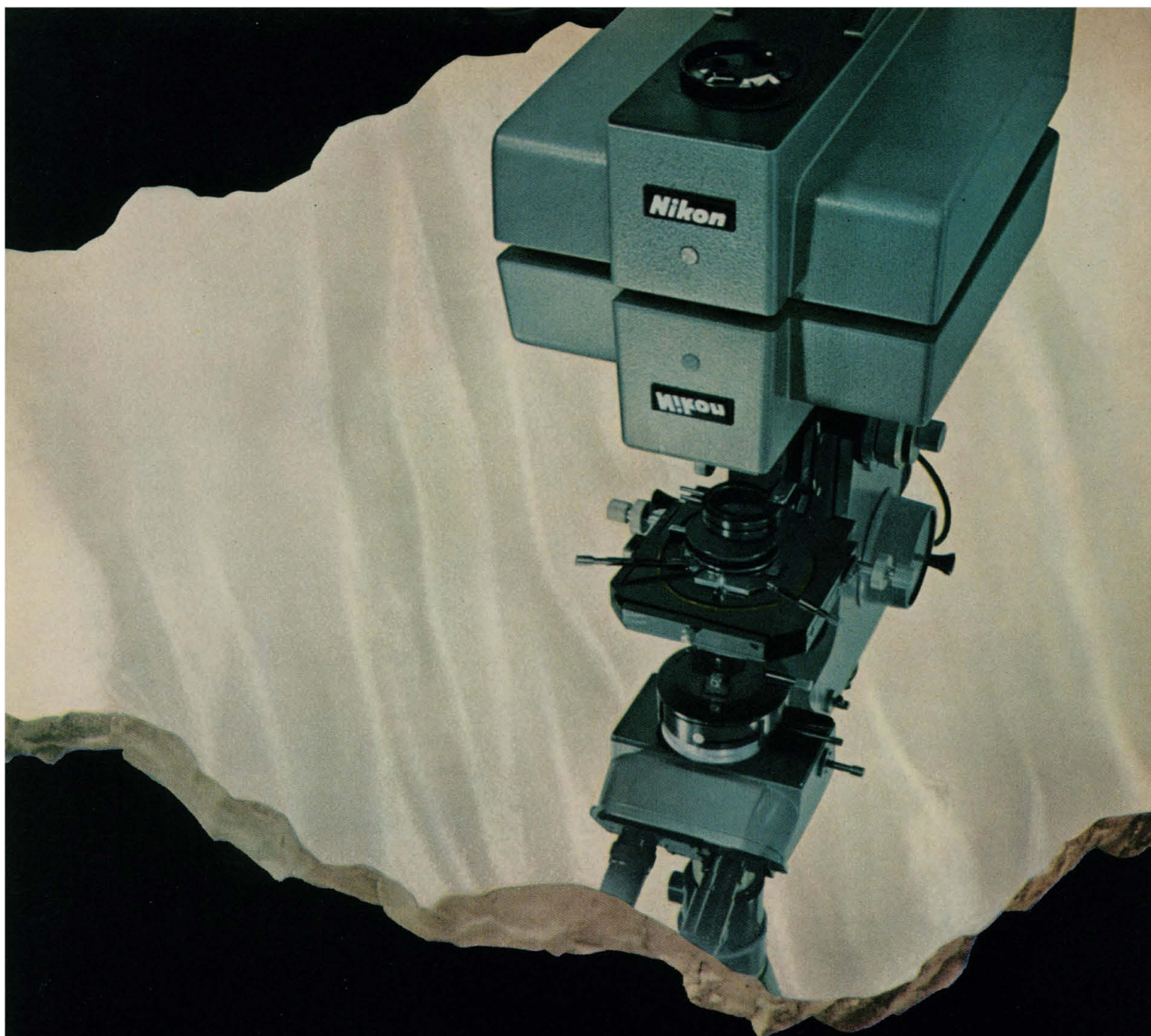
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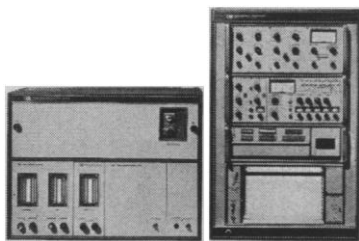
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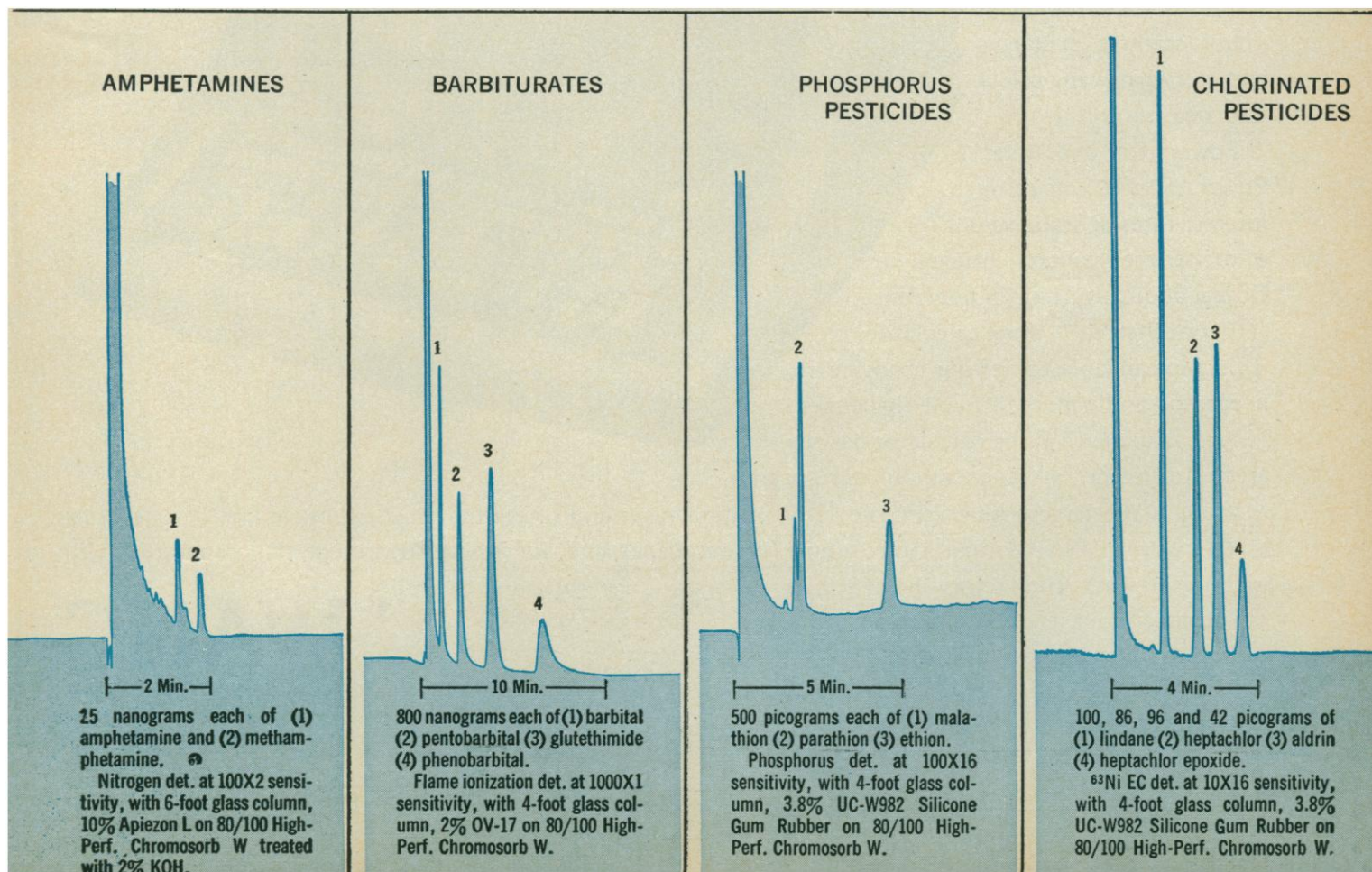
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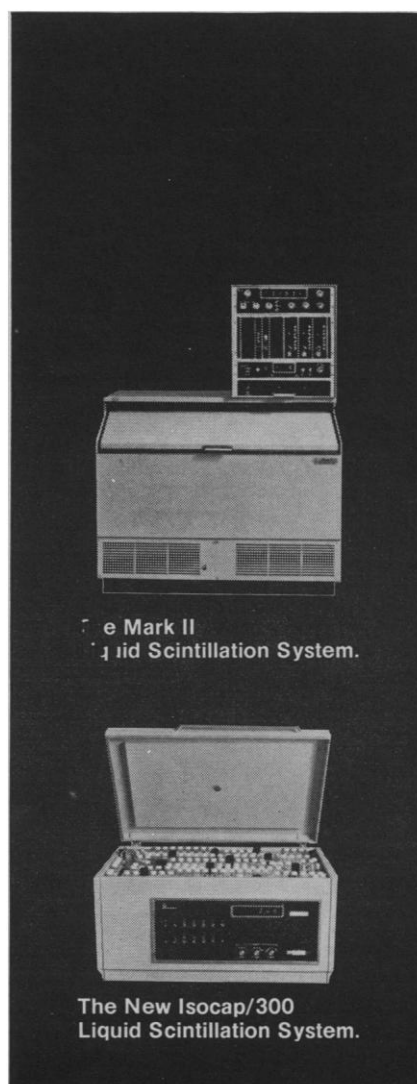
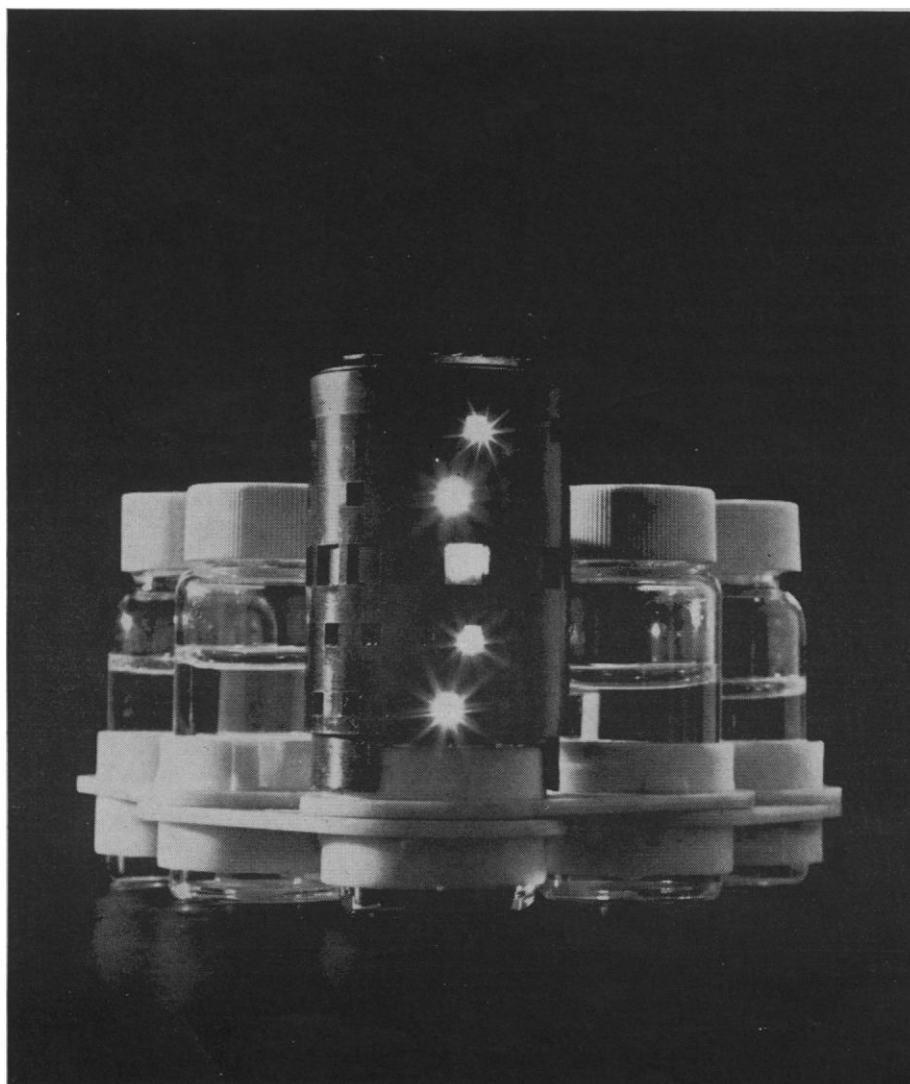


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before committees at all levels of government. Mrs. Benson serves on a number of national committees and has testified before many congressional committees. Mrs. Benson and the League of Women Voters have been honored by the President of the United States.

If all the members of the State Department's committee are as unaware as the one who referred to Mrs. Benson, then the committee is in trouble. But there is still a ray of hope—one of its members is Lucy Benson.

KORENE HAUSMAN

253 South Kellner Road,
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The critical reference to Mrs. Benson was an erroneous statement, corrected in the following issue of Science (5 Nov., p. 576).—EDITOR

Acknowledgment

Since a recently published review in *Science* was highly flattering to my book *Science in American Society: A Social History* (Knopf, 1971), I owe it to readers to make the following facts known. It has, within the past few days, come to my attention that in many cases where I indicated in footnotes that a particular section was "based on" another work, far too many of the words, as well as the ideas, of the cited author were used. In one case, there are as many as 55 consecutive words; in others there are sentences, parts of sentences, or key phrases that are actually the same as those used by the author cited. The cases I have found of direct quotation and of paraphrase that I consider close enough to be a violation of professional standards come to a total of just over eight pages in my book. . . .

To first cite as a major source the author of a still current book, who, in many cases, would be a likely reviewer of my book, and then to deliberately steal from him, would require a degree of naiveté much greater than mine. . . . After searching my files and the books cited, I have reconstructed what happened. In each case, the sequence of events was the same. I had read the work previously as part of my general reading, without taking notes. After writing a draft of the relevant chapter, I decided that it would be strengthened by the addition of a more detailed account of some portion of what I had read in that work. I then went back



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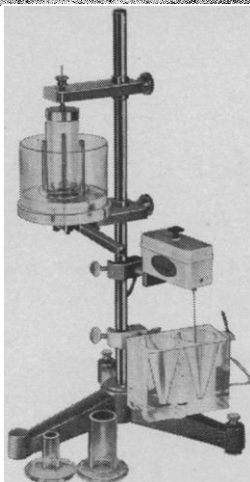
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SCIENCE, VOL. 175

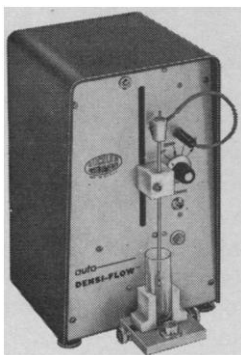
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and reread the section very carefully, took a few notes on it, and then from my notes at once proceeded to write my own section. In most cases, I had already gone to most of the sources cited and already had them incorporated in my draft. This will be evident to one who will compare my account (p. 312) of H. Edwin Mitchell's 1918 report with that of Lawrence A. Cremin in *The Transformation of the School* (p. 195), for I give certain details that are not found in Cremin.

When I wrote my own section, far from simply reporting on Cremin's work, and that of the others, as I thought I had been doing, I was actually reproducing parts with the help of brief notes and the fresh reading. I have certainly been aware that I had an extraordinary ability to remember material when I wanted to, but I have never before realized that I did it unconsciously. While it may appear incredible—and I confess it appears so to me—that an experienced researcher could be so completely unaware of his own thinking processes, I can only say that the occasion to find out about myself has never arisen before, for none of my other work has been based to any extent on secondary sources.

Naturally, I was filled with consternation and regret when I discovered what I had done. I would like to express once again my indebtedness to these scholars, not only for the material cited but for the value in general that their work has had for me (numbers in parentheses refer to the pages in my book where the material was used):

Lawrence A. Cremin, *The Transformation of the School* (Vintage Books, 1964), pp. 185–86, 195–96 (310–13); A. Hunter Dupree, *Science in the Federal Government: A History of Policies and Activities to 1940* (Harper Torchbooks, 1964), pp. 151 (269), 135 (267–68); William H. Goetzmann, *Army Exploration in the American West, 1803–1863* (Yale University Press, 1959), pp. 320 (183–84), 308 (185); Brooke Hindle, *The Pursuit of Science in Revolutionary America, 1735–1789* (University of North Carolina Press, 1956), pp. 250–51 (127–28); Robert G. McCloskey, *American Conservatism in the Age of Enterprise* (Harvard University Press, 1951), pp. 26–28 (259–61).

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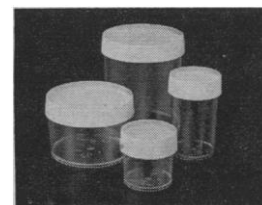
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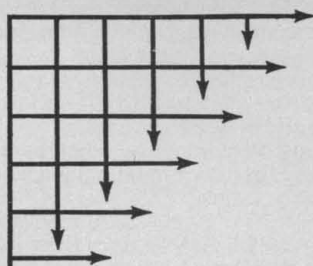
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Women in Academia

During the past several years higher education has experienced a series of crises. The newest, and in the long term perhaps the most significant, development is the issue of discrimination against women. Militant women's groups have been organized, and they have brought charges against various institutions. The federal government has provided a powerful tool for such groups in the form of a 1968 Executive Order that forbids discrimination by federal contractors on the grounds of sex. Using provisions of this order, individuals and women's groups have filed more than 350 formal charges against some of the greatest of our universities and state systems, and they are winning.

Male chauvinists would like to think that the current uproar is the work of a few militant troublemakers. They may hope that, if they are cautious and patient, the storm can be counted on to dissipate. The odds are, however, that we are witnessing a major movement that will persist until it has brought forth substantial changes, not only in the universities, but also in the professions.

In part the movement will persist because substantial injustices have been perpetrated. There has been massive discrimination against women in academia. In part the movement will persist because woman's role in the world is in the process of change. If society frowns on childbearing, how are women to occupy themselves constructively? What can they do to lead significant and interesting lives? Increasingly women are turning to employment of some kind.

Today women make up about 37 percent of the labor force. But women hold only a small portion of the desirable positions. For example, in the United States, only 2 percent of dentists and 7 percent of physicians are women. In contrast, in Denmark, 70 percent of dentists are women, while in Germany 20 percent of physicians are women. The limited presence (about 2 percent) of women as full professors in our major universities is particularly striking. This compares with an annual doctorate production of about 12 percent women.

In 1930, some 28 percent of doctorates were won by women, and at many institutions the proportion of women faculty members was higher than today. These were times of a comparatively low birthrate. Later, after World War II, having babies became the thing for young women to do. Correspondingly, women's participation in graduate training dropped.

At present, although a larger proportion of girls than boys complete high school, only about 50 percent of girls go to college as against 80 percent of boys. Between 75 and 90 percent of the well-qualified students who do not go on to higher education are women. This represents a large loss of talent for the nation and often leads to personal dissatisfactions that occur when intelligent people must work at unchallenging jobs.

With universities as dependent as they are on government contracts, and with the government determined to enforce legal constraints against discrimination, university administrations must make some major changes in their personnel and admissions policies. But there is more behind the current drive than law or militant women's groups. Transition from a time in which babies were the thing to an era of zero population growth must have profound consequences on the relations between men and women and on the structure of society. We have only begun to see some of the effects.—PHILIP H. ABELSON

The statistics in this editorial are taken from a speech given by Alan Pifer, president, Carnegie Corporation of New York, to the Southern Association of Colleges and Schools, Miami, Florida, 29 November 1971.

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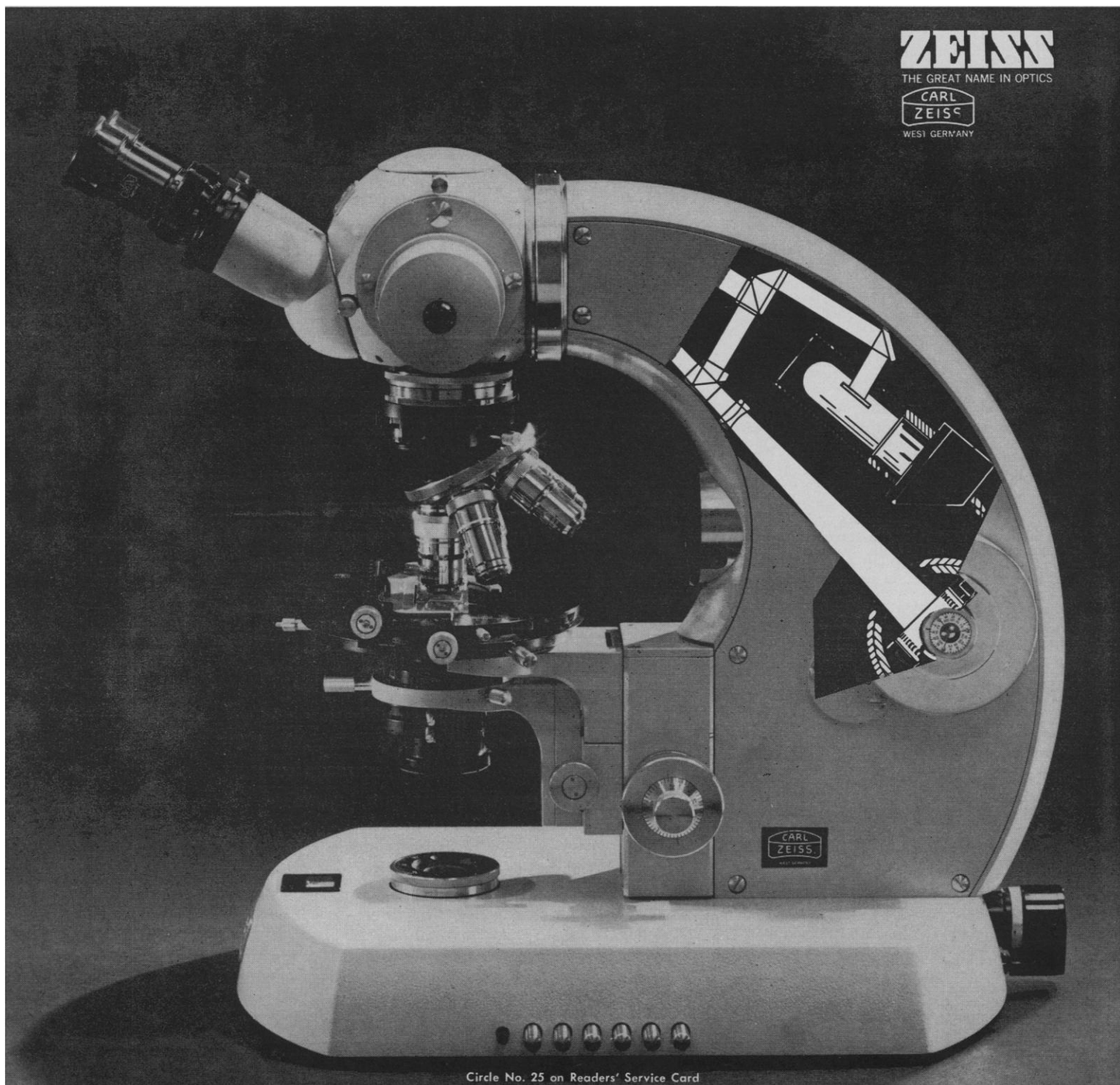
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
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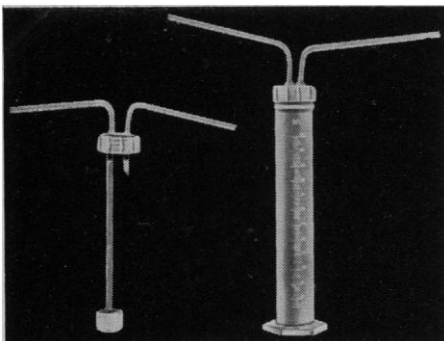
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tion quenching stability problem as applied to interstellar masers that must operate without a cavity.

Alex Smith (University of Florida) reported on VLB observations of the radio bursts from Jupiter which are still unresolved at less than 0.1 second of arc; the longest baseline observations so far used were between Bowling Green, Florida, and Maipú, Chile. He noted that so far the model of the short-burst emission from Jupiter (the Lynden-Bell and Bardeen model suggests that radiation arises from the plasma wake effects of Jupiter's moon Io) is consistent with observations. The source size implied from the burst duration is 3 kilometers or 0.001 second of arc. This is probably not resolvable with VLBI owing to interplanetary scintillations.

Following is a list of the members of the three groups cited by the Rumford Committee for work in the field of long-baseline interferometry. The Canadian group consisted of Norman W. Broten, R. M. Chisholm,* John A. Galt, Herbert P. Gush, Thomas H. Legg, Jack L. Locke, Charles W. McLeish, Roger S. Richards, and Jui Lin Yen. The M.I.T. group consisted of John A. Ball, Alan H. Barrett, Bernard F. Burke, Joseph C. Carter, Patricia P. Crowther, James M. Moran, Jr., and Alan E. E. Rogers. The National Radio Astronomy Observatory-Cornell group consisted of Claude C. Bare,* Barry G. Clark, Marshall H. Cohen, David L. Jauncey, and Kenneth I. Kellermann.

ALAN E. E. ROGERS

*Haystack Observatory,
Massachusetts Institute of Technology,
Cambridge*

PHILIP MORRISON

*Department of Physics,
Massachusetts Institute of Technology*

* Deceased.

Subacute Sclerosing

Panencephalitis Treatment

There is great need for a treatment for subacute sclerosing panencephalitis. Chronic measles infection has been demonstrated in the brain tissues of patients with this disease. Still, we are struggling for a clear understanding of the mechanism of pathogenesis.

A conference on approaches to treatment of subacute sclerosing panencephalitis was held in Bethesda, Maryland, on 21 May 1971, under the

sponsorship of the National Institute of Neurological Diseases and Stroke (NINDS). Warren Huber of NINDS opened the session. Participants reported on various studies of therapy. Chemotherapy—including treatment with amantadine hydrochloride, cytoxan, methotrexate, 5-iodo-2-deoxyuridine, and azoguanine—measles vaccines, and interferon stimulation have been for the most part unsuccessful. Similarly, chemical treatment with ether and the use of radiation have not been shown to be of value. Immunological treatments with HL-A-matched lymphocytes and transfer factor are under study, but sufficient time has not elapsed to determine the efficacy of these methods of therapy. Several investigators described research on drugs in tissue cultures. Others discussed the limited cellular immune responses to measles in monkeys and antibody studies; also discussed were attempts to document (i) cell-mediated immunity to measles by the use of skin tests and studies of lymphocyte proliferation in vitro in the presence of measles antigen and (ii) lymphocyte toxicity for radioactive chromium-labeled cultures infected with measles virus. The chairman of the morning session was Edwin Lennette (State of California Virus and Rickettsial Disease Laboratory), and the chairman of the afternoon session was Richard Johnson (Johns Hopkins Hospital).

In summarizing the meeting, Samuel Katz (Duke University Medical School) stated: "At present, it is clearly difficult to consider a logical approach to this disease. We need a greater understanding of the mechanisms which are involved in the disease process and must have techniques to study these mechanisms." The measles virus, which is chronically active and yet partially suppressed in this disease, must be studied to determine how this state of activity is retained as well as the defects that are responsible for its continued persistence. The virus must be examined in this state to determine if it is unusual in any way. The members of the conference recommended that fresh isolates of brain tissues from patients be obtained and maintained in a central registry so that better sharing and collaborative examination of these specimens that are difficult to obtain can be accomplished. Support is needed to provide highly specialized reagents for attempts at eliciting delayed hypersensitivity reactions in vivo and in vitro and for sensitizing adult donors

Reagents for the unambiguous assay of reverse transcriptase

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POLYADENYLIC ACID
POLYDEOXYTHYMIDYLIC ACID

Two groups of investigators ^{1,2} have shown that reverse transcriptase can be distinguished from cellular DNA polymerase by using the appropriate combinations of polyadenylic acid, polydeoxyadenylic acid and oligothymidylic acid as templates and primers. Their results can be summarized as follows:

	Poly(rA)· Oligo(dT)	Poly(dA)· Oligo(dT)
Reverse Transcriptase	High Activity	Low-Activity
Cellular DNA Polymerase	Low to Moderate Activity	High Activity

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4110 Polyadenylic Acid; Poly(rA)
5 mg free with purchase of Poly(dA) and Oligo(T)

Reverse Transcriptase References*

¹N.C. Goodman and S. Spiegelman, *Proc. Nat. Acad. Sci. USA*, **68**, 2203 (1971).

²R.D. Wells, et al, *Biochemistry*, In Press.

*Literature references are cited for the sole purposes of documenting statements of fact and do not constitute endorsement of products.

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edited by **Ernest B. Hook**, **Dwight T. Janerich**, and **Ian H. Porter**, all of the Birth Defects Institute, New York State Dept. of Health, Albany, N.Y.

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This volume systematically considers methods for monitoring the incidence of malformations and mutations in the population in order to detect the introduction or increase of unsuspected mutagens and teratogens in the environment. It includes discussions of the rationale, problems, and costs of various approaches to this question, descriptions of several possible surveillance systems, and suggestions for improving, refining and elaborating monitoring. The markers discussed include fetal wastage, major malformations as well as tumors, minor malformations including dermatoglyphic abnormalities, protein changes, chromosome breaks and rearrangements, and other somatic mutations.

The book is based on the Birth Defects Institute Symposium held in Albany, N. Y., on October 19-20, 1970.

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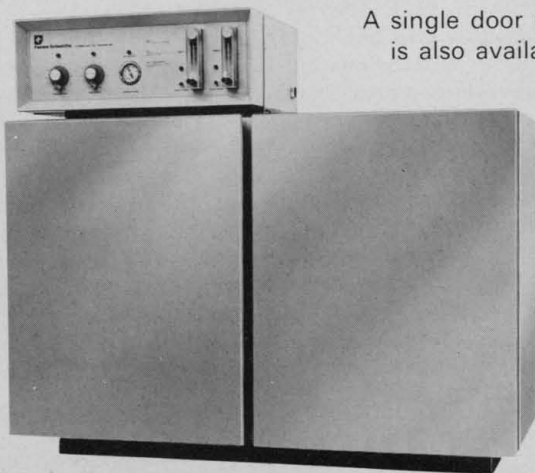
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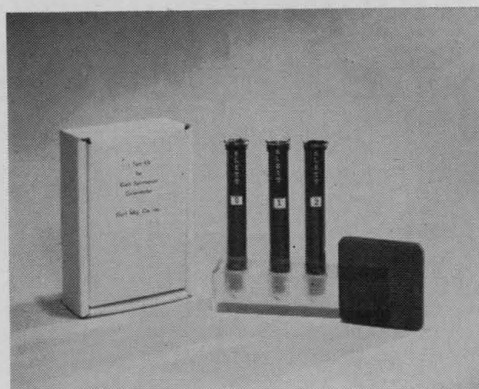


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This conference should stimulate interest and focus attention on the need for increased research, not only on subacute sclerosing panencephalitis but also on chronic progressive diseases of the central nervous system.

JOHN L. SEVER

*National Institute of Neurological
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National Institutes of Health
Bethesda, Maryland 20014*

Forthcoming Events

16-18. **Solid-State Circuits Conf.**, Philadelphia, Pa. (Inst. of Electrical and Electronics Engineers, Inc., 345 E. 47 St., New York 10017)

18-19. **Symposium on Regulation of Catecholamine Metabolism in the Sympathetic Nervous System**, New York, N.Y. (I. Saulpaugh, New York Heart Assoc., 2 E. 64 St., New York 10021)

20-23. **American Inst. of Chemical Engineers**, Dallas, Tex. (F. J. Antwerpen, AICE, 345 E. 47 St., New York 10017)

20-24. **American Inst. of Mining, Metallurgical and Petroleum Engineers**, San Francisco, Calif. (J. B. Alford, AIMPE, 345 E. 47 St., New York 10017)

21-22. **Coastal Zone Pollution Management Symp.**, Charleston, S.C. (B. L. Edge, Rhodes Engineering Research Center, Clemson Univ., Clemson, S.C. 29631)

23. **Applications of Auger Spectroscopy**, London, England. (Meetings Officer, Inst. of Physics, 47 Belgrave Sq., London SW1X 8QX)

23-25. **Society of Professors of Education**, Chicago, Ill. (Miss R. Bayles, Atlanta Univ., Atlanta, Ga.)

23-25. **Research and Training Reactor Utilization**, American Nuclear Soc., College Station, Tex. (J. D. Randall, Nuclear Science Center, Texas A&M Univ., College Station 77843)

26. **Oregon Acad. of Science**, Portland. (C. L. Smith, Dept. of Anthropology, Oregon State Univ., Corvallis 97331)

27-2. **American Soc. of Sugar Beet Technologists**, Phoenix, Ariz. (J. H. Fischer, ASSBY, P.O. Box 538, Fort Collins, Colo. 80521)

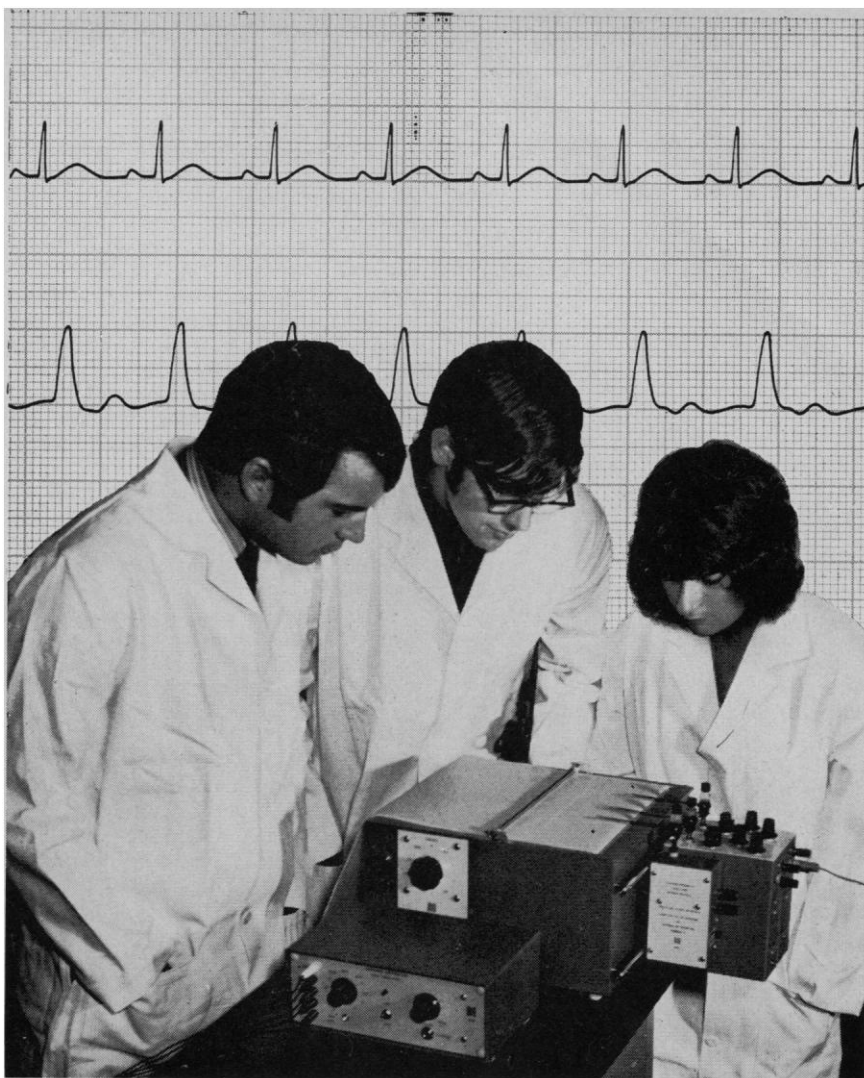
28-3. **Medical Data Processing Symp.**, Toulouse-Pyrenees, France. (E. E. Van Brunt, Permanente Medical Group, Medical Methods Research, 3779 Piedmont Ave., Oakland, Calif. 94611)

March

1-4. **American Acad. of Forensic Sciences**, Atlanta, Ga. (J. T. Weston, 44 Medical Dr., Salt Lake City, Utah 84113)

1-5. **American College of Cardiology**, Chicago, Ill. (W. D. Nelligan, ACC, 9650 Rockville Pike, Bethesda, Md. 20014)

2-3. **American Astronomical Soc., Div. on Dynamical Astronomy**, College Park, Md. (J. D. Mulholland, Dept. of Astronomy, Univ. of Texas, Austin 78712)



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2-4. **Diagnosis of the Functions in Endocrinology—Methods and Interpretations**, 18th symp., German Soc. of Endocrinology, Hannover. (J. Kracht, Pathologisches Institut, Klinikstrasse 32 g, 63 Giessen, Germany)

3-5. **American College of Apothecaries**, Chicago, Ill. (D. C. Huffman, Univ. of Tennessee, College of Pharmacy, Memphis 38103)

4-10. **American Concrete Inst.**, Dallas, Tex. (ACI, Box 4754 Redford Sta., 22400 W. Seven Mile Rd., Detroit, Mich. 48219)

5-9. **Society of Toxicology**, Williamsburg, Va. (R. Scala, Esso & Engineering Co., Linden, N.J. 97036)

6-8. **National Federation of Science Abstracting and Indexing Services**, New York, N.Y. (Miss S. Keenan, NFSAIS, 2102 Arch St., Philadelphia, Pa. 19103)

6-10. **Analytical Chemistry and Applied Spectroscopy**, 23rd Pittsburgh conf., Cleveland, Ohio. (H. W. Fracek, Fisher Scientific Co., 585 Alpha Dr., Pittsburgh, Pa. 15238)

6-10. **Neutron Inelastic Scattering**, 5th symp., Intern. Atomic Energy Agency, Grenoble, France. (J. H. Kane, Div. of Technical Information, U.S. Atomic Energy Commission, Washington, D.C. 20545)

9-10. **Advanced Analytical Methods for the Clinical Laboratory**, Oak Ridge, Tenn. (C. D. Scott, Oak Ridge National Lab., P.O. Box X, Oak Ridge 37830)

9-10. **American Soc. for Clinical Pharmacology and Therapeutics**, Houston, Tex. (R. T. Smith, 1718 Gallagher Rd., Norristown, Pa. 19401)

9-11. **Geological Soc. of America**, Northeast Section, annual mtg., Buffalo, N.Y. (E. J. Buehler, Dept. of Geological Sciences, State Univ. of New York at Buffalo, Buffalo, 14207)

10-12. **National Wildlife Federation**, Mexico City, Mexico. (T. L. Kimball, NWF, 1412 16th St., NW Washington, D.C. 20036)

11-14. **American Assoc. of Pathologists and Bacteriologists**, 68th annual, Cincinnati, Ohio. (Miss J. Graves, Intersociety Committee on Pathology Information, Inc., 9650 Rockville Pike, Bethesda, Md. 20014)

11-18. **American Assoc. of Pathologists and Bacteriologists**, American Assoc. of Neuropathologists, and Pediatric Pathology Club (joint), Cincinnati, Ohio. (A. J. French, 1335 E. Catherine St., Ann Arbor, Mich. 48104)

12-17. **American Soc. of Photogrammetry**, Washington, D.C. (L. P. Jacobs, 105 N. Virginia Ave., Falls Church, Va. 20046)

13-17. **International Union against Cancer Conf.** (melanoma and skin cancer, leukemia). Sydney, Australia. (Intern. Cancer Conf., GPO Box 475, Sydney, NSW)

13-17. **California Membrane Conf.**, Squaw Valley. (C. F. Fox, Dept. of Bacteriology, Univ. of California, Los Angeles 90024)

14. **Acoustic Emission**, London, England. (Meetings Officer, Inst. of Physics, 47 Belgrave Sq., London SW1X 8QX)

14-16. **Mineral Waste Utilization**, 3rd symp., U.S. Bureau of Mines and IIT Research Inst., Chicago, Ill. (M. A. Schwartz,

IIT Research Inst., 10 W. 35 St., Chicago 60616)

14-18. **International Acad. of Pathology**, 61st annual, Cincinnati, Ohio. (Miss J. Graves, Intersociety Committee on Pathology Information, Inc., 9650 Rockville Pike, Bethesda, Md. 20014)

19-22. **American Soc. of Limnology and Oceanography**, Tallahassee, Fla. (G. W. Saunders, Jr., Dept. of Zoology, Univ. of Michigan, Ann Arbor 48104)

19-25. **Council for Exceptional Children**, 50th annual intern. conv., Washington, D.C. (W. C. Geer, CEC, Suite 900, Jefferson Plaza, 1411 S. Jefferson Davis Highway, Arlington, Va. 22202)

20-22. **Physical Electronics Conf.**, 32nd annual, Albuquerque, N.M. (R. L. Schwoebel, Dept. 5330, Sandia Labs., Albuquerque 87115)

20-23. **American Assoc. of Dental Schools**, Las Vegas, Nev. (B. F. Miller, 211 E. Chicago Ave., Chicago, Ill. 60611)

20-23. **Institute of Electrical and Electronics Engineers**, New York, N.Y. (D. G. Fink, IEEE, 345 E. 47 St., New York 10017)

20-23. **American Soc. of Neurochemistry**, 3rd natl., Seattle, Wash. (W. L. Stahl, Dept. of Medicine (Neurology), School of Medicine, Univ. of Washington, Seattle 98105)

20-24. **Use of Isotopes in Studies on the Physiology of Domestic Animals** with Special Reference to Hot Climates, Intern. Atomic Energy Agency, Athens, Greece. (J. H. Kane, Div. of Technical Information, U.S. Atomic Energy Commission, Washington, D.C. 20545)

21-23. **Control of Hazardous Material Spills Conf.**, Houston, Tex. (H. N. Myrick, Univ. of Houston, 3801 Cullen Blvd., Houston 77004)

23-25. **Quality of Life**, American Medical Assoc., Chicago, Ill. (E. O. Ellis, AMA, 535 N. Dearborn St., Chicago 60610)

23-25. **American Philosophical Assoc.**, San Francisco, Calif. (A. Pasch, APA, 117 Lehigh Road, College Park, Md. 20742)

23-25. **Seismological Soc. of America**, Honolulu, Hawaii. (D. Tocher, P.O. Box 826, Berkeley, Calif. 94701)

23-26. **International Assoc. for Dental Research**, North American Div., Las Vegas, Nev. (A. R. Frechette, IADR, 211 E. Chicago Ave., Chicago, Ill. 60611)

26-29. **Environmental Mutagen Soc.**, Cherry Hill, N.J. (W. W. Nichols, Inst. for Medical Research, Copewood St., Camden, N.J. 08103)

27-30. **Meteorological Observations and Instrumentation**, 3rd symp., Air Force Cambridge Research Labs., San Diego, Calif. (A. S. Carten, Jr., AFCRL (LX/1124), L. G. Hanscom Field, Bedford, Mass.)

April

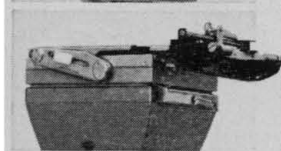
3-6. **National Assoc. for Research in Science Teaching**, Chicago, Ill. (R. W. Lefler, Dept. of Physics, Purdue Univ., Lafayette, Ind. 47907)

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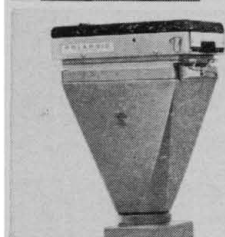
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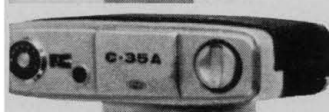
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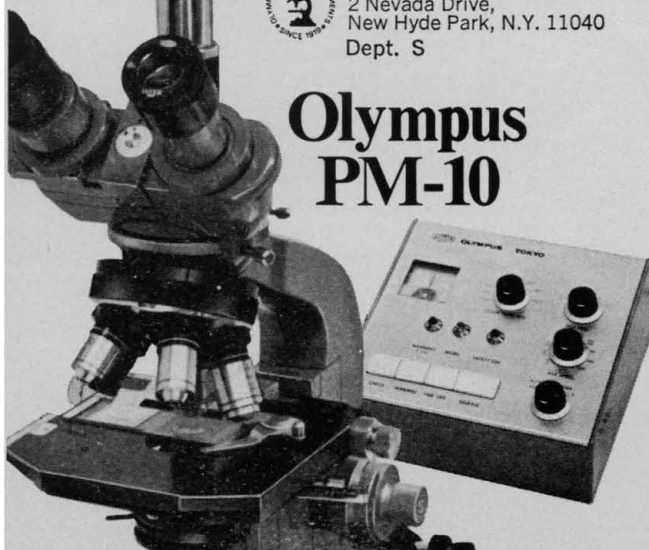
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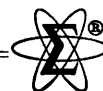


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Ref.: 1) Burger & Noonan, *Nature* **228**, 512 (1970).
2) Markowitz, et al, *Science*, **163**, 476 (1969).
3) Goldstein, et al, *Arch. Biochem. Biophys.*, **121**, 88 (1967).
4) Goldstein & Iyer, *Biochim. Biophys. Acta*, **121**, 197 (1966).

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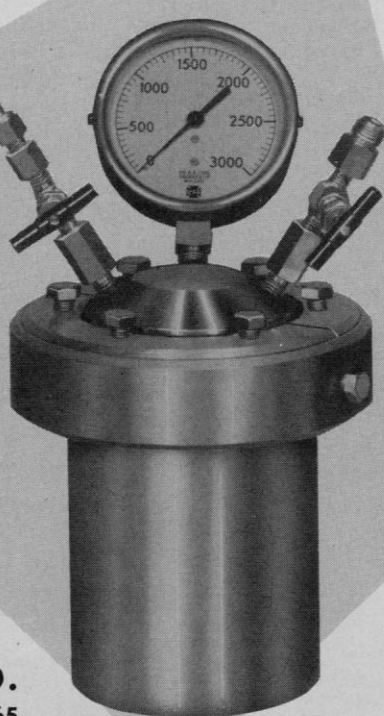
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5-7. **Reliability Physics Symp.**, 10th annual, Inst. of Electrical and Electronics Engineers, Las Vegas, Nev. (H. Lauffenburger, IITRI, 10 W. 35 St., Chicago, Ill. 60616)

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