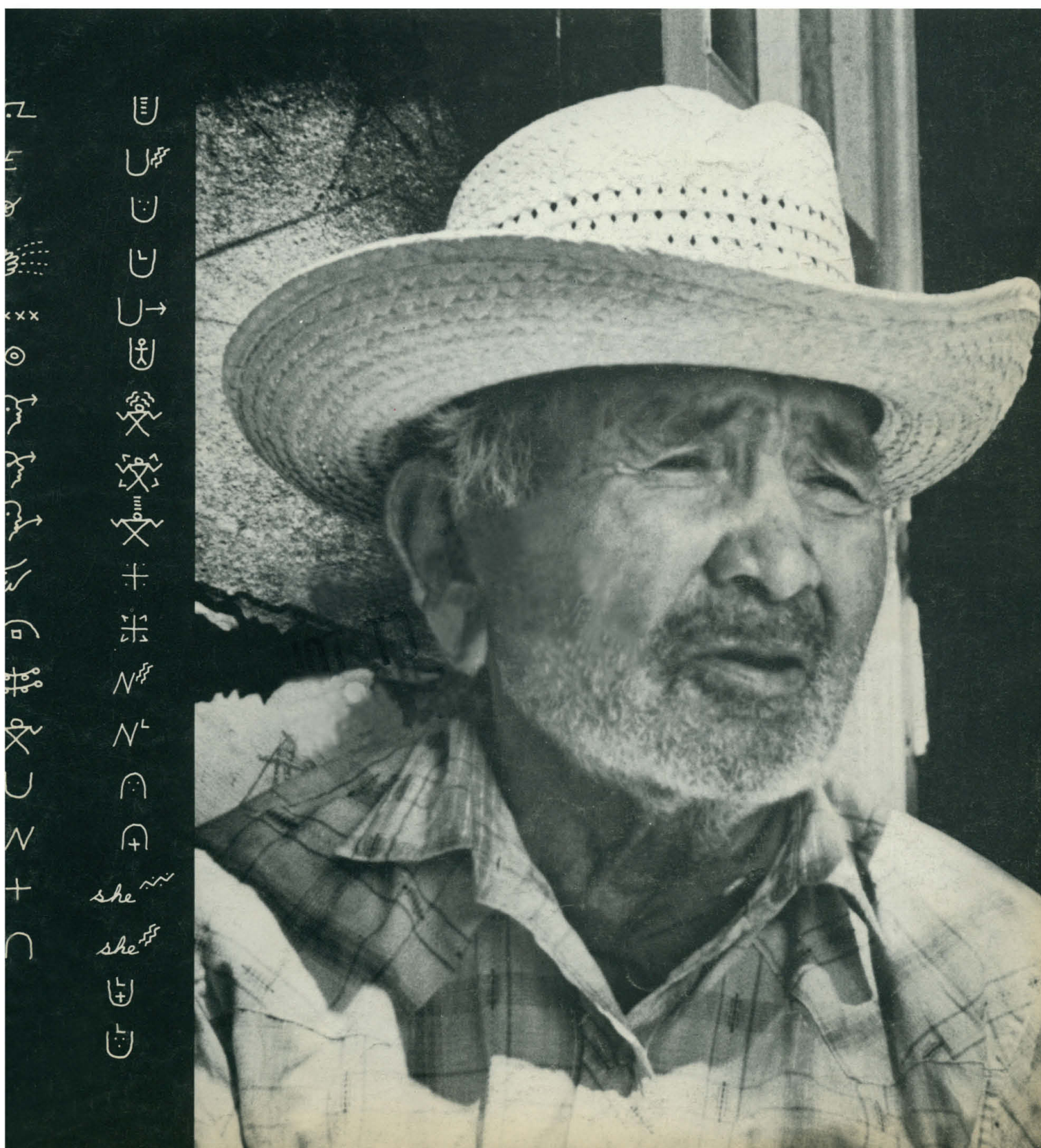


SCIENCE

8 June 1973

Vol. 180, No. 4090

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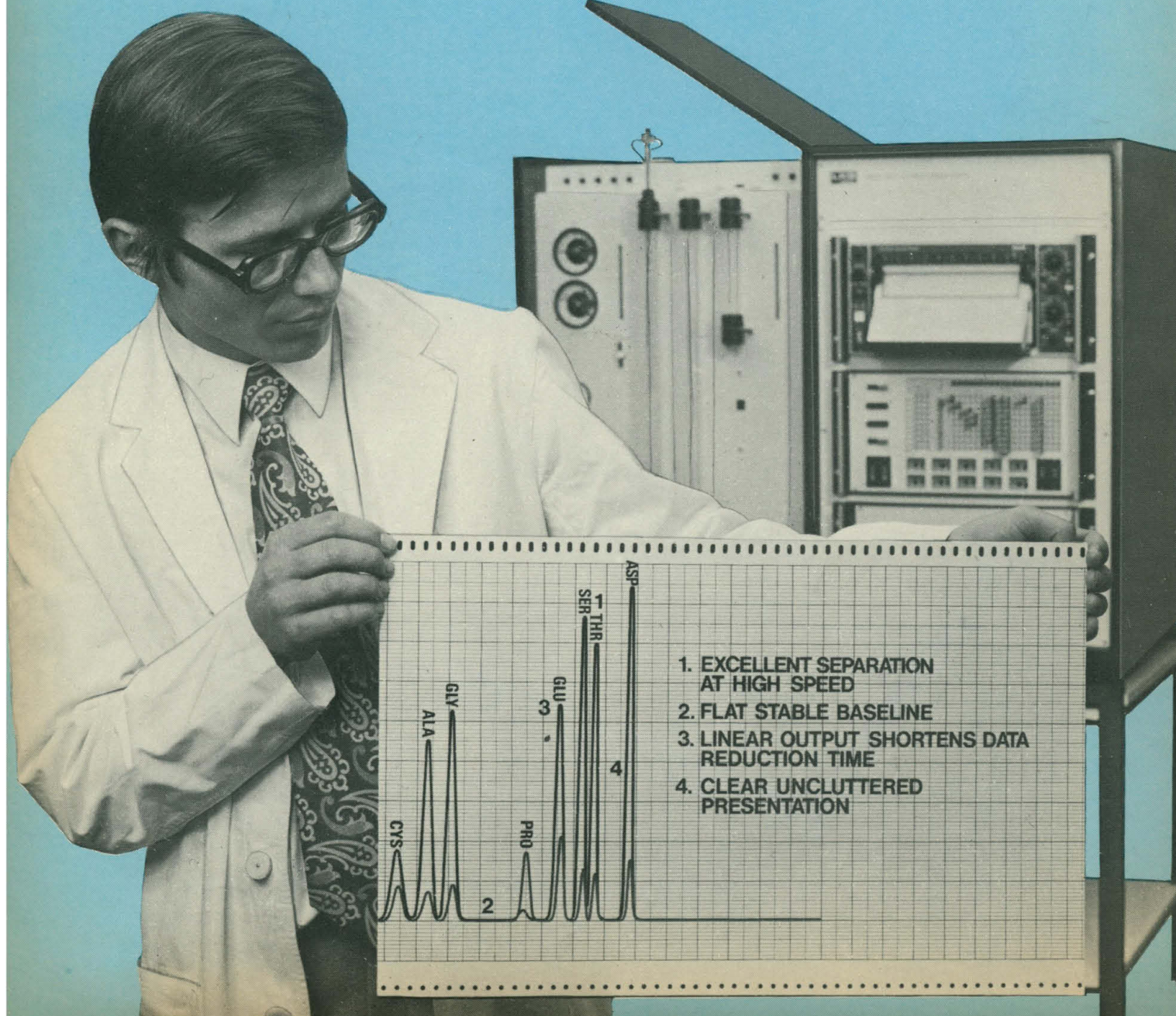
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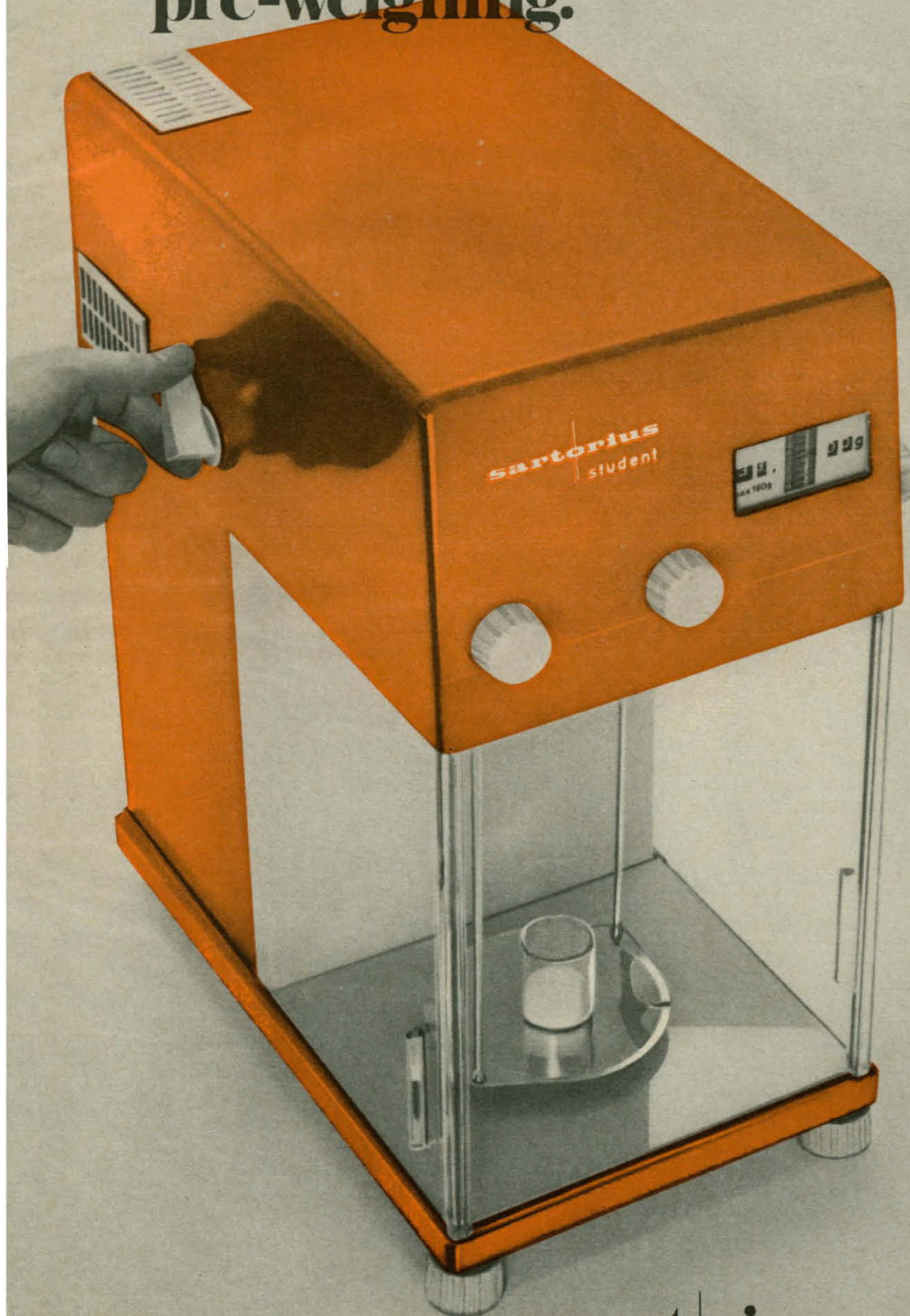
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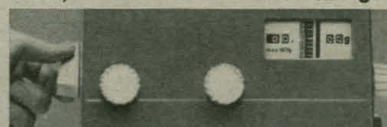


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8 June 1973

Volume 180, No. 4090

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COVER

Silas John Edwards, Western Apache shaman, who in 1904 invented a unique nonalphabetic script for the writing of Apache prayers. Symbols shown on cover are among those employed in this writing system. See page 1013. [Keith H. Basso, University of Arizona, Tucson]

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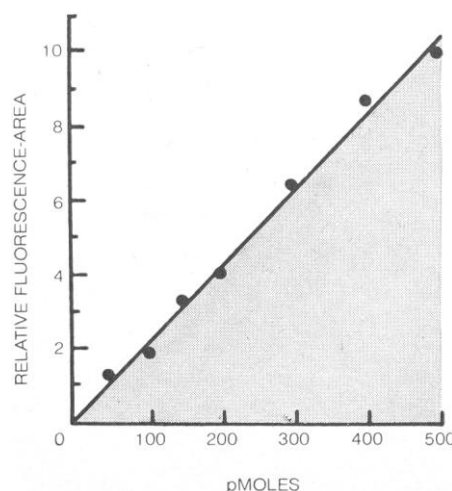
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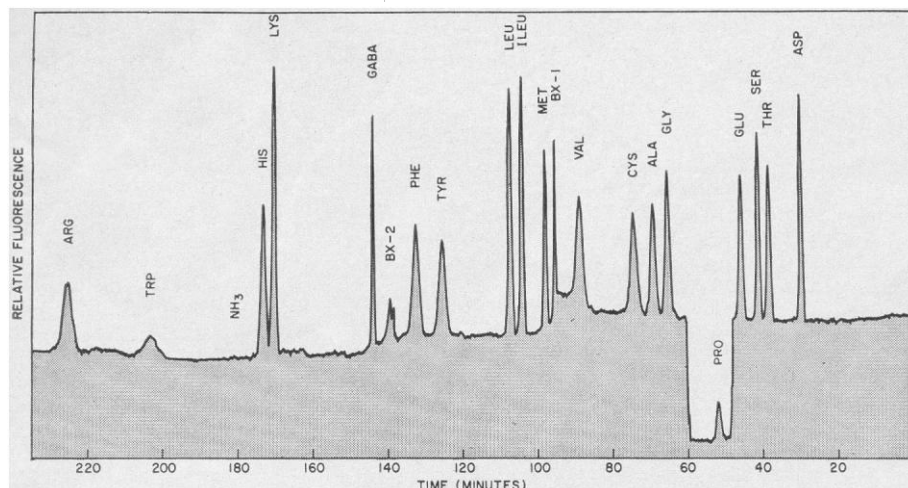
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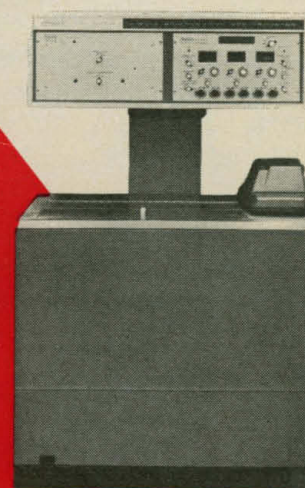
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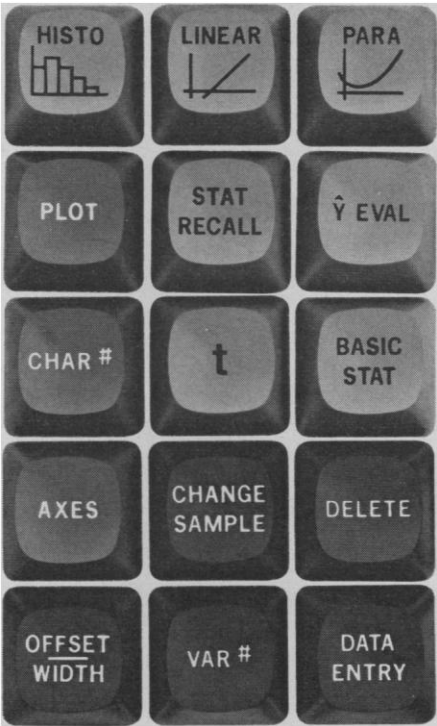
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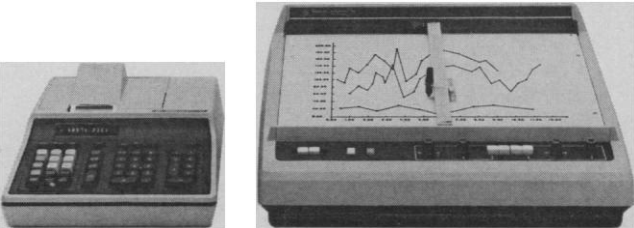
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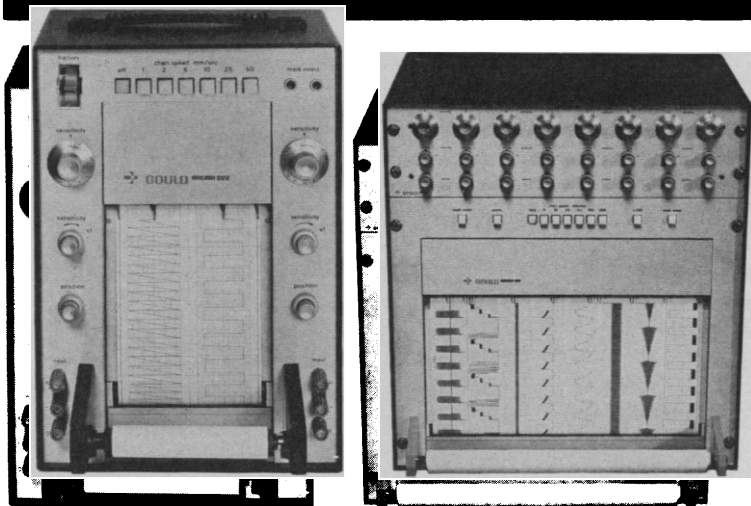
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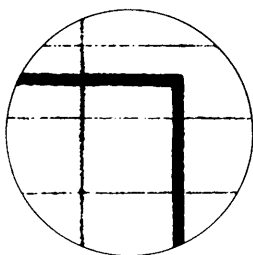
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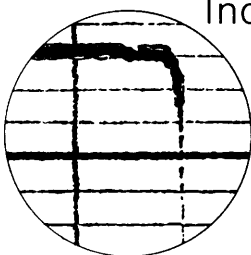
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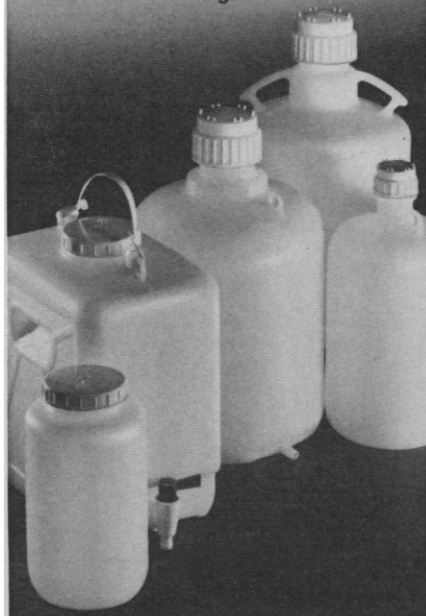
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the point of approval with recommendations for funding. I have been told by NIH administrators that in any normal year at least two of my three pending applications would probably have received an award.

Countless man-hours have been expended in routing and reviewing these now moribund proposals, and, in addition, many applicants have been hosts to site-visit teams.

All this effort will have been lost as of 30 June, when applications will be administratively withdrawn. I propose that, in the interest of saving the government the time and expense of receiving and reviewing new submissions and to save the precious time of research investigators, study sections, and site-visit teams, all approved applications for fiscal year 1973 remain in competition during fiscal year 1974 and a moratorium be instituted on all new grant applications until the approved applications have received appropriate awards or are withdrawn by either party for other reasons.

CHARLES COLBERT

*Radiological Research Laboratory,
Wright State University Research
Institute, Inc., Dayton, Ohio 45431*

Acknowledgment

We would like to acknowledge the following omission in our report "Tremor and involuntary movement in monkeys: Effect of L-dopa and of a dopamine receptor stimulating agent" (23 Feb., p. 816). The involuntary movements in normal monkeys were described by Sassin *et al.* (1). We have used their terminology in part to describe involuntary movement in monkeys with ventromedial tegmental lesions.

MENEK GOLDSTEIN

ARTHUR F. BATTISTA

*New York University Medical
Center, New York 10016*

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1. J. F. Sassin, S. Taub, E. D. Weitzman, *Neurology* 21, 403 (1971).

Acupuncture, Hypnotism, and Magic

Tsung O. Cheng's letter (9 Feb., p. 521) does not clarify the *modus operandi* of acupuncture analgesia (the correct term). I have performed numerous painless major and minor sur-

gical procedures including obstetrical deliveries—many *without* analgesia or anesthesia. For want of a better term, I called the method "hypnosis" (1).

Acupunctural analgesia, a praiseworthy method, can best be understood within the paradigm of contemporary conditioning theory (2). Scientists here and in China have not stressed the effect of shaping and modifying behavior of the masses by the sociopolitical reward inducements referred to in Mao Tse-tung's *New Thought Directives*. This is a kind of operant conditioning that readily brings about compliant behavior without overt cooperation being necessary. Such compliance accounts for the broad spectrum of psychobiologic experiences leading to well-known placebo responses.

Also not fully recognized is that no one knows where suggestibility ends and hypnotizability begins. Contrary to Cheng's statements, animals can be hypnotized, or more correctly develop tonic immobility, when held in restraint (3). This is referred to as the "still reaction" or the "immobility reflex." The immobility reflex is also induced by fear, which leads to catalepsy and subsequent anesthesia. Therefore the argument that animals are unable to read Mao's Little Red Book or that they are not susceptible to placebos is invalid.

My explanation for acupunctural analgesia is that the Chinese have rediscovered the effectiveness of preconditioning, autogenic training, yoga breathing exercises, and a form of "suggestion in slow motion—hypnotism" (2). These methods allay the fear and apprehension of selected patients and raise the pain threshold. In the environment in which acupunctural analgesia is used, it is obviously the method of choice.

James Esdaile (4) performed many formidable surgical procedures in India at the turn of the last century with mesmeric anesthesia. It now appears that magnetism, the precursor of hypnotism, has been replaced by "needleism."

WILLIAM S. KROGER

*Institute for Comprehensive Medicine,
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2. ———, *Amer. J. Psychol.*, in press.
3. F. A. Volgys, *Hypnosis of Man and Animals* (Williams & Wilkins, Baltimore, 1966).
4. J. Esdaile, *Hypnosis in Medicine and Surgery* [Reprint of *Mesmerism in India* (1846)] (Julian Press, New York, 1957).

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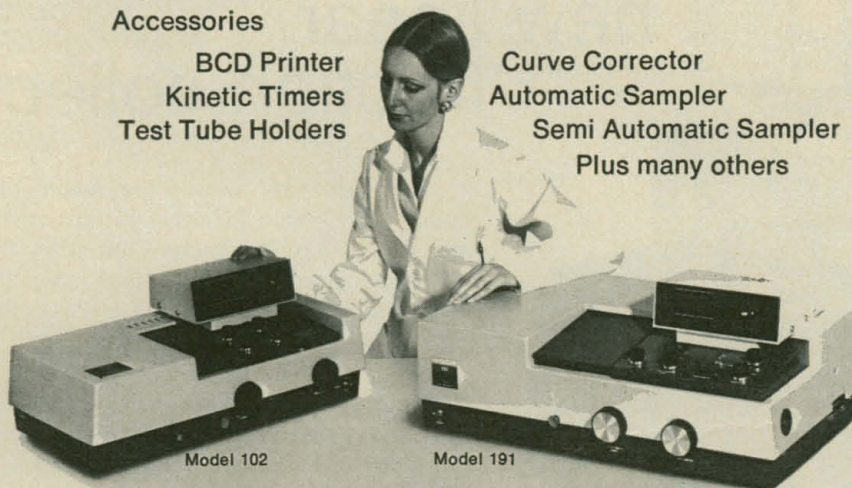
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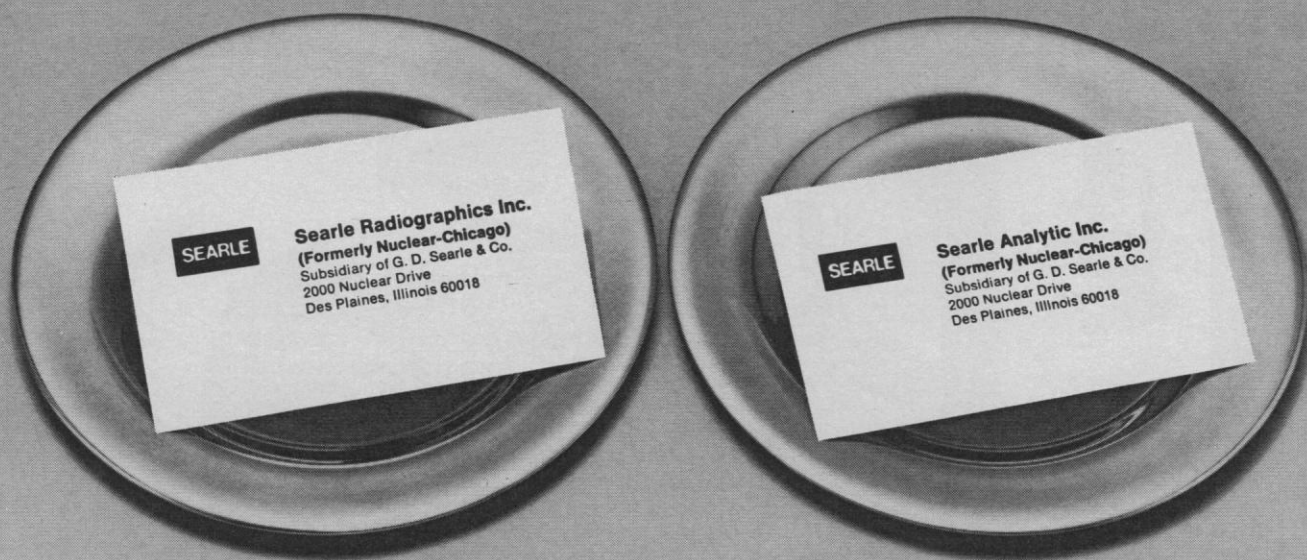
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A Fellowship with Essence

Mexico City is an exciting city—the heart of a great nation, geographically, economically, politically, and spiritually. Built on the site of the ancient Aztec city of Tenochtitlan, its anthropological and archeological treasures are magnificent. Future-bound, its art and architecture are truly spectacular. Vital, bustling, doubling in size—from 4.8 to nearly 9 million—in the last decade, it has all the problems of the modern city; noise, air pollution, *ciudades perdidas*—its "lost cities." But it also has a vigorous program of urban redevelopment that has produced truly impressive results (for example, the Presidente Adolfo Lopez Mateos complex provides clean, modern, landscaped housing for nearly 70,000 persons downtown) and a new mass transit system that is the envy of the hemisphere (the metro covers some 26 miles and moves a million persons a day in quiet comfort in its sparkling, rubber-tired cars). It is an ideal setting for what we anticipate will be the most exciting event in the recent history of AAAS.

"Science and Man in the Americas" is a 2-week program of lectures, symposia, and informal discussions of topics central to the future development and well-being of the Western Hemisphere: questions of nutrition and food supply, development of arid lands, meeting future energy requirements, preserving the environment, coping with population change, protecting against earthquakes, developing the resources of the sea, and opening up new opportunities in education. Hosted and managed by CONACYT (National Council of Science and Technology of Mexico) and cosponsored by AAAS, it is a truly international affair. Planned by an international editorial committee, its costs are being covered by CONACYT and AAAS, as well as by gifts and grants from both public and private sources. Speakers will come from more than 30 nations—virtually every country in the hemisphere plus those other countries of the world where previous experience has provided useful insights into the problems around which the program is built. Already the meeting has stimulated interesting developments in the host country. A program of university scholarships has emerged from program planning. A special competition among young people, similar to the Science Fairs long popular in the United States, is now under way throughout Mexico. Radio and television programs, keyed to the content of the program, are attracting wide public interest. A competition for Mexican film-makers, established in connection with the International Science Film Festival, has attracted 70 entries, far exceeding expectation.

In May of last year, CACTAL (Conference on the Application of Science and Technology to the Development of Latin America) was held in Brazilia under the sponsorship of the Organization of American States. Its agenda focused on regional and national needs as they translate into scientific and technological requirements for effective, ameliorative action. The Mexico City meeting, 20 June through 4 July 1973, is a logical sequel to CACTAL, with an important difference. CACTAL was a government-to-government conference. "Science and Man in the Americas" will be a people-to-people sharing, a chance to join the interests and talents of individual scientists, engineers, and laymen in the context of some of the crucial issues confronting our special part of the world. It is an opportunity to become acquainted, to exchange views, and to create an important new international colleagueship. We hope that every member of AAAS who can, will come with us to "hear a little song and . . . speak a few reasonable words" and to become part of a "fellowship with essence."—WILLIAM BEVAN

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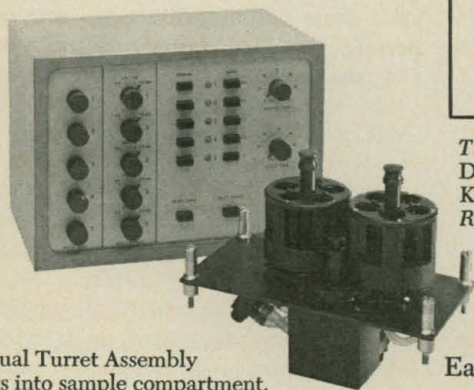
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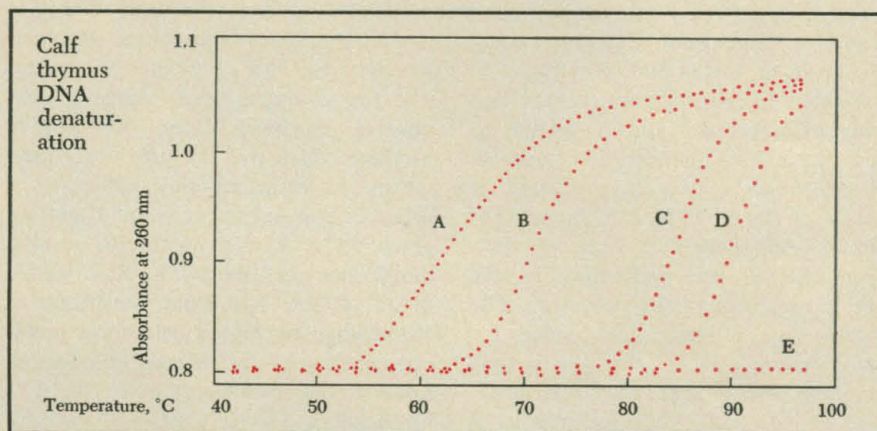
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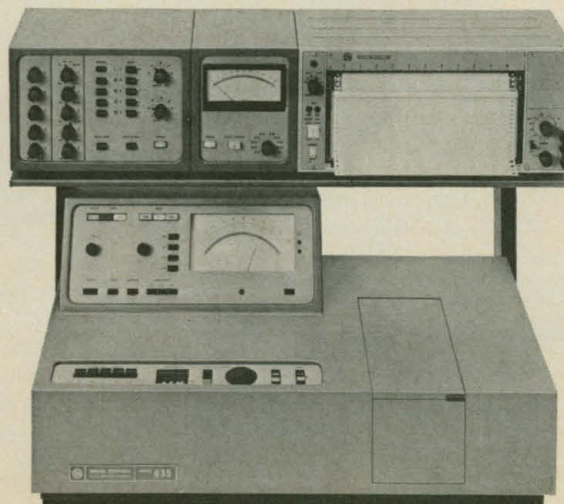
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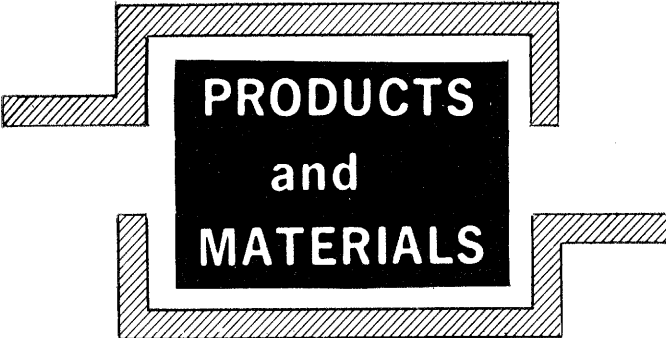
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Amino Acid Analyzer

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the Roche Institute of Molecular Biology. With Fluram the Aminalyzer is sensitive to amino acid, peptide, and protein concentrations in the picomole range. The device is a countertop ion-exchange chromatograph that features a single column and operates at pressures up to 3000 pounds per square inch gage. The filter fluorometer detects compounds with primary amine functional groups. With the introduction of a simple intermediate step, proline and other secondary amino acids can be converted to primary amines that are detectable with Fluram. American Instrument Company. Circle No. 129 on Readers' Service Card.

Literature

Techniques, Instruments and Accessories for Microanalysts—A User's Manual is a combination textbook and catalog that describes the design and application of apparatus for microanalysis in a variety of areas, such as quality control, patent specification, forensic analysis, and others. It costs \$15 including postage. Walter C. McCrone Associates. Circle No. 125 on Readers' Service Card.

Bibliography of Articles on Automatic Quantitative Microscopy lists over 300 references from 100 publications from the early 1960's through 1972. Included are articles in physical and biological disciplines as divergent as nuclear tracks, metallography, medicine, botany, and photography. Image Analysing Computers. Circle No. 126 on Readers' Service Card.

The Lab Mart is a catalog supplement that describes plastic ware, circulators, melting point apparatus, laboratory jacks, timers, reagent chemicals, and other general scientific supplies. J. & H. Berge. Circle No. 128 on Readers' Service Card.

Parathyroid Hormone (Bovine) is the subject of a data sheet. The substance is a biologically active synthetic peptide that substitutes for the natural material. Beckman Instruments. Circle No. 133 on Readers' Service Card.

Gas-Chrom Newsletter is an 8-page bulletin featuring articles about products and laboratory techniques. The March/April issue has an article on electron capture detection among others. Applied Science Laboratories. Circle No. 131 on Readers' Service Card.

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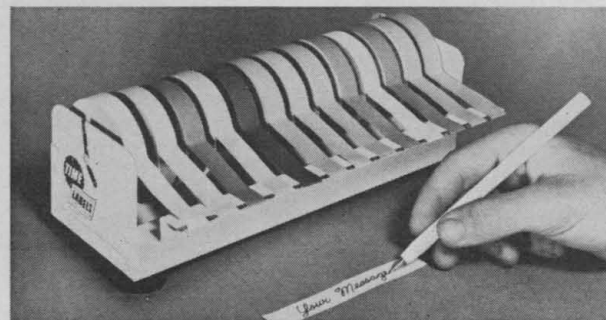
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BOOKS RECEIVED

(Continued from page 1049)

Fundamentals of Air Pollution. Samuel J. Williamson. Addison-Wesley, Reading, Mass., 1973. xvi, 472 pp., illus. \$14.95.

Handbook of Precision Engineering. Vol. 7, Electrical Design Applications. A. Davidson, Ed. Translated from the Dutch edition (Eindhoven, 1969). McGraw-Hill, New York, 1973. xii, 242 pp., illus. \$19.50. Philips Technical Library.

The Harvard Fatigue Laboratory. Its History and Contributions. Steven M. Horvath and Elizabeth C. Horvath. Prentice-Hall, Englewood Cliffs, N.J., 1973. x, 182 pp., illus. \$9.95. International Research Monograph Series in Physical Education.

Hierarchy Theory. The Challenge of Complex Systems. Howard H. Pattee, Ed. Braziller, New York, 1973. xvi, 156 pp., illus. Cloth, \$6.95; paper, \$2.95. International Library of Systems Theory and Philosophy.

Histological Typing of Salivary Gland Tumours. A. C. Thackray in collaboration with L. H. Sobin. World Health Organization, Geneva, 1972 (U.S. distributor, American Public Health Association, Washington, D.C.). 28 pp. + plates. \$3.50; with 46 slides, boxed, \$14. International Histological Classification of Tumours, No. 7.

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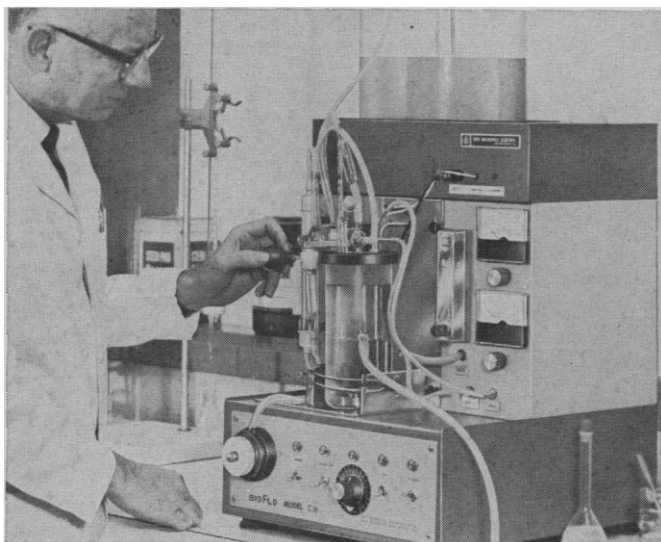
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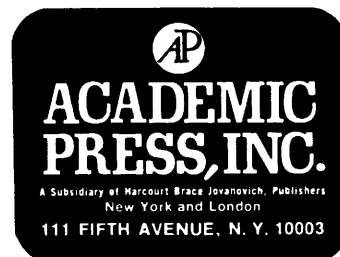
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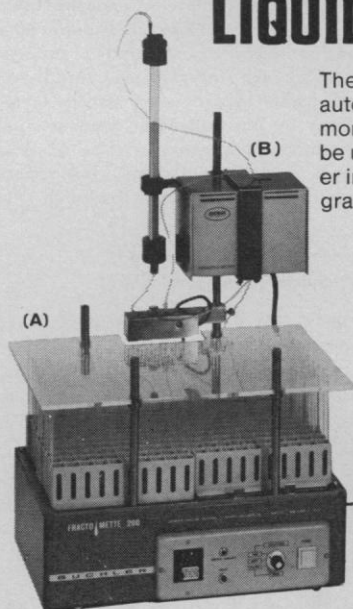
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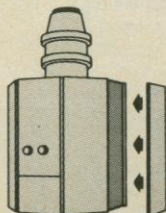
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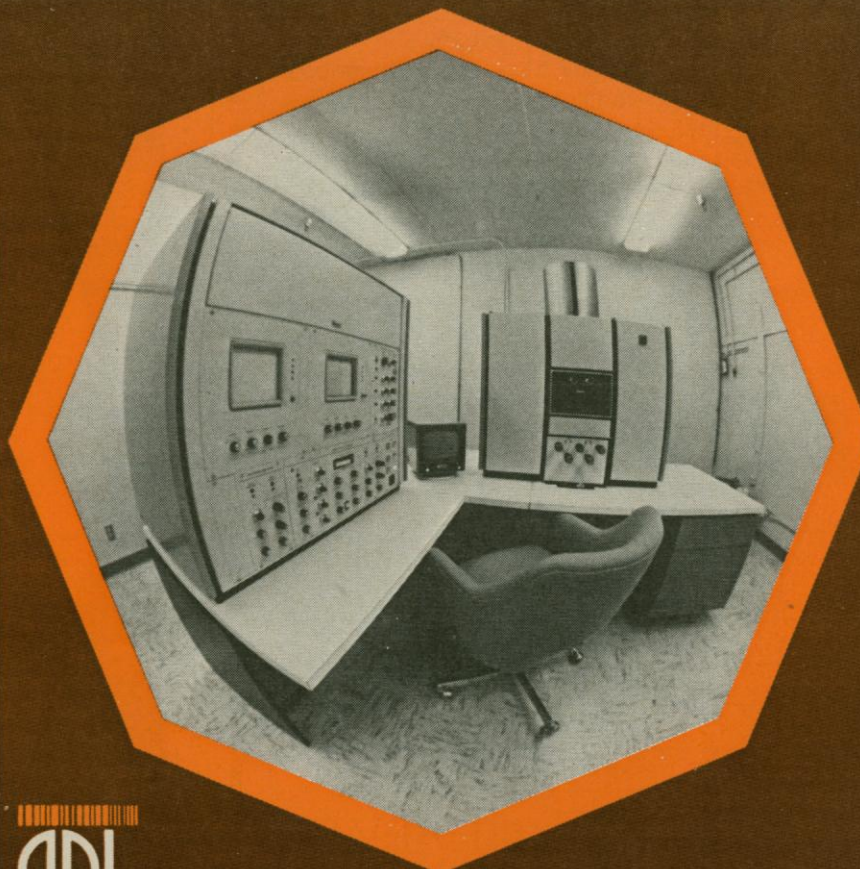
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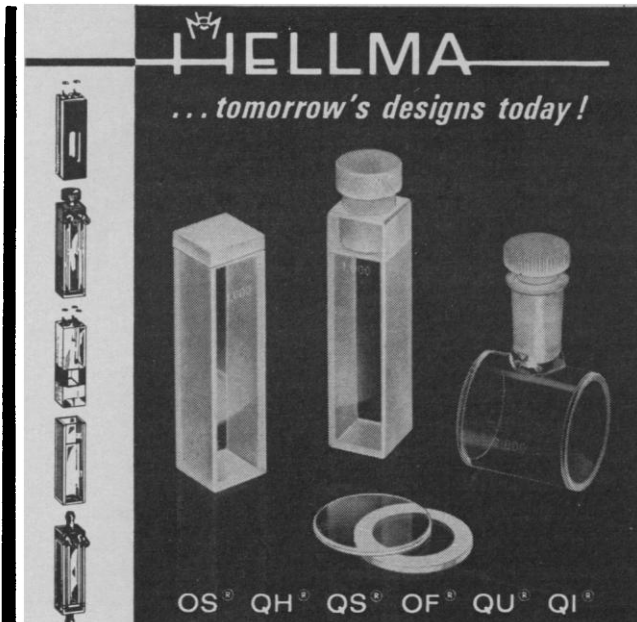


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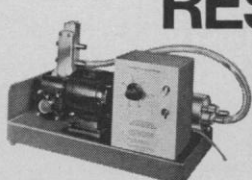
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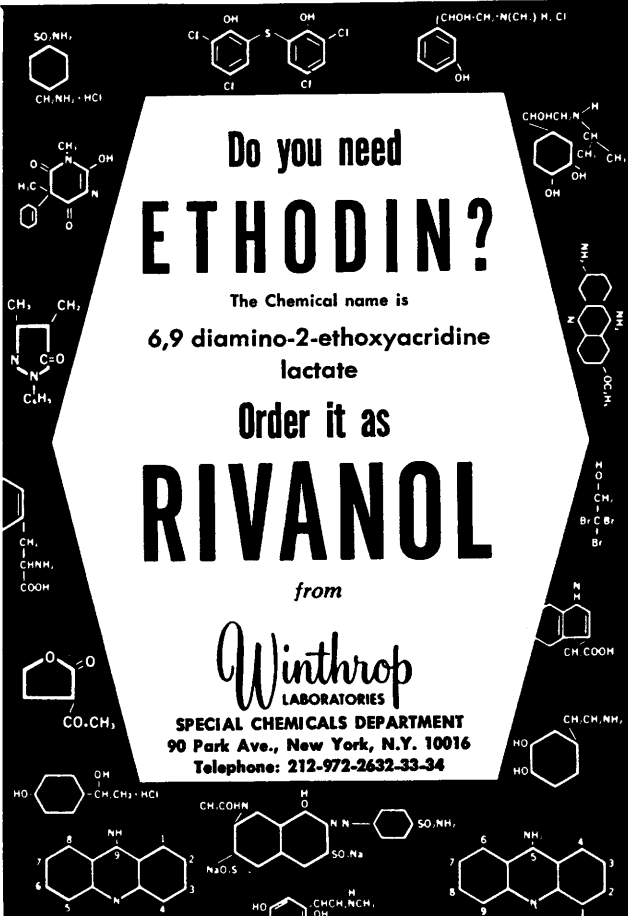
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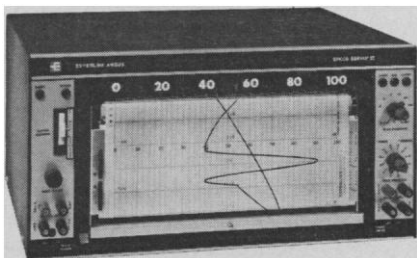
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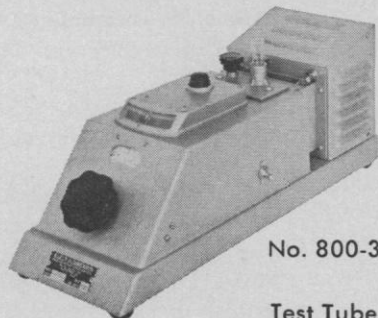


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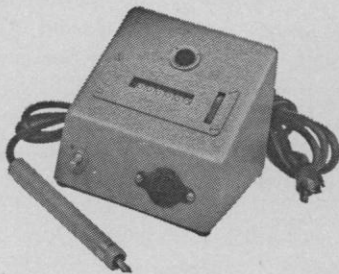


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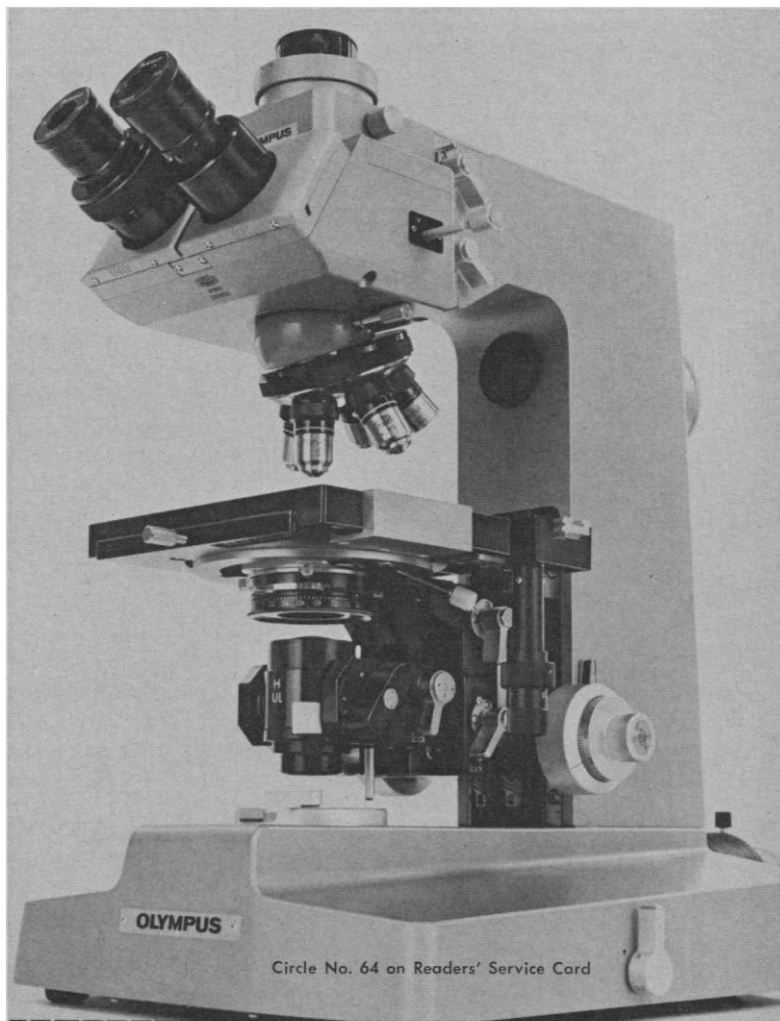
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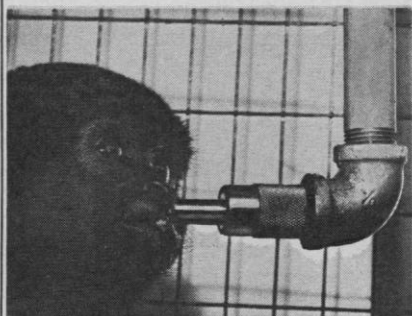
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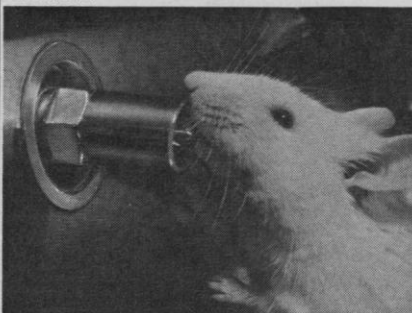
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NEWS AND COMMENT

Continued from page (1040)

lation aimed at carrying out land use objectives and that legislative bodies make clear that police powers are regarded as valid authority to achieve more orderly development and to protect natural, cultural, and aesthetic values.

The chapter of the report devoted to the status of land use law was based largely on a background paper prepared by Fred P. Bosselman, John Banta, and David Callies, members of a Chicago law firm who are consultants to both the task force and CEQ (Bosselman, also a consultant to the states of Florida and Virginia, is an unusually influential figure in the field of land use law). Russell Train referred approvingly to the task force's comments on the takings clause issue and indicated that, on this point, the report was anticipating an evaluation of land use law to be made by CEQ itself. What ever the inclination of Train and his colleagues, however, CEQ cannot deal as forthrightly with such a politically sensitive issue as can a private task force that does not have to worry about embarrassing a politically conservative President.

An Ambitious Document

This article touches selectively on only a few of the main points of the task force report, an ambitious document which attempts to deal broadly with land use regulation at the state and local level. Its numerous findings and recommendations range from the extraordinarily complex problem of the land use control process in an dynamic urban setting to the much simpler (but still largely unaddressed) problem of preventing promoters of recreational property from abusing their customers and raping the land. Seminal or not, the task force report should stand for some time as a useful document.—LUTHER J. CARTER

(In a later article the writer will discuss current legislative efforts at coping with the land use problem in a fast-growing state—Colorado.)

Erratum: In a news story on the National Academy of Engineering (NAE) and the National Academy of Sciences (NAS) (*Science*, 18 May, p. 717), in the sentence beginning "In the engineers' view, the March decision became inevitable after the NAE council for the third time rejected a formula on governance. . . ." the first reference to the "NAE council" should have read "NAS council."

Erratum: The reference to Bouguer anomalies in the caption to Fig. 2 of the report by W. H. Kanes *et al.* (*Science*, 1 June 1973, p. 950) is in error. Isostatic anomalies are meant.—Ed.

RECENT DEATHS

Edward A. Ackerman, 61; executive officer, Carnegie Institution of Washington; 8 March.

Henry F. Adams, 90; professor emeritus of psychology, University of Michigan; 16 February.

Karl M. Bowman, 84; former professor of psychiatry, University of California, San Francisco; 2 March.

Kenneth H. Brookshire, 40; chairman, psychology department, Wright State University; 1 March.

Harold D. Carter, 68; professor of education, University of California, Berkeley; 3 March.

Hobart C. Carter, 65; former chairman, education department, Mary Washington College; 24 February.

Edward M. A. Chandler, 81; professor emeritus of chemistry, Roosevelt University; 22 March.

James A. Coss, 100; former chairman, chemistry department, Morning-side College; 5 February.

Sandor S. Feldman, 82; clinical professor emeritus of psychiatry, University of Rochester School of Medicine and Dentistry; 23 March.

Frederick W. Grover, 96; professor emeritus of electrical engineering, Union College; 30 January.

Frank T. Gucker, Jr., 72; research professor emeritus of chemistry, Indiana University; 6 March.

Arthur W. Leighton, 79; professor emeritus of engineering, Tufts University; 9 March.

Edward A. Lincoln, 83; former professor of education, Harvard University; 7 March.

Robert A. McCleary, 50; professor of psychology and physiology, University of Chicago; 20 March.

Philip D. McMaster, 81; professor emeritus of physiology, Rockefeller University of Chicago; 20 March.

Judith W. Onley, 41; associate professor of psychology, University of Rochester; 6 March.

Harold E. B. Pardee, 86; associate professor emeritus of clinical medicine, Cornell University; 28 February.

Abe Pepinsky, 84; professor emeritus of psychology, Haverford College; 31 January.

Harold Prophet, 39; research manager, Dow Thermal Research Laboratory, 20 December.

Sam Shulits, 70; professor emeritus of civil engineering, Pennsylvania State University; 27 February.