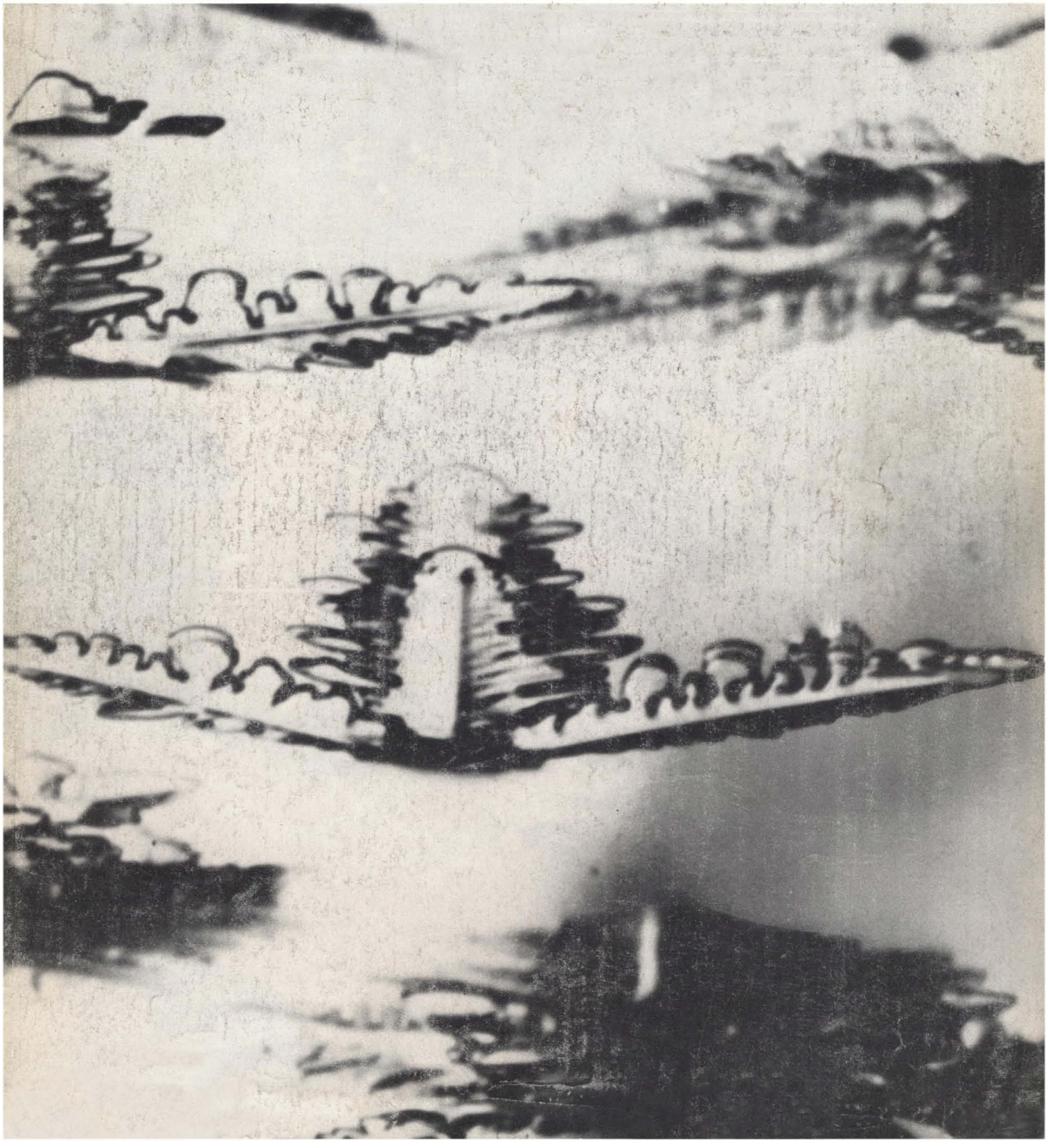
SCIENCE 10 November 1972
Vol. 178, No. 4061
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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COVER

Internal melting of Tyndall flowers in an ice-single crystal, viewed normal to the *c*-axis. When very intense radiation causes rapid internal melting, the arms do not lie in the basal plane (about × 26). See page 613. [C. A. Knight and N. C. Knight, National Center for Atmospheric Research, Boulder, Colorado]

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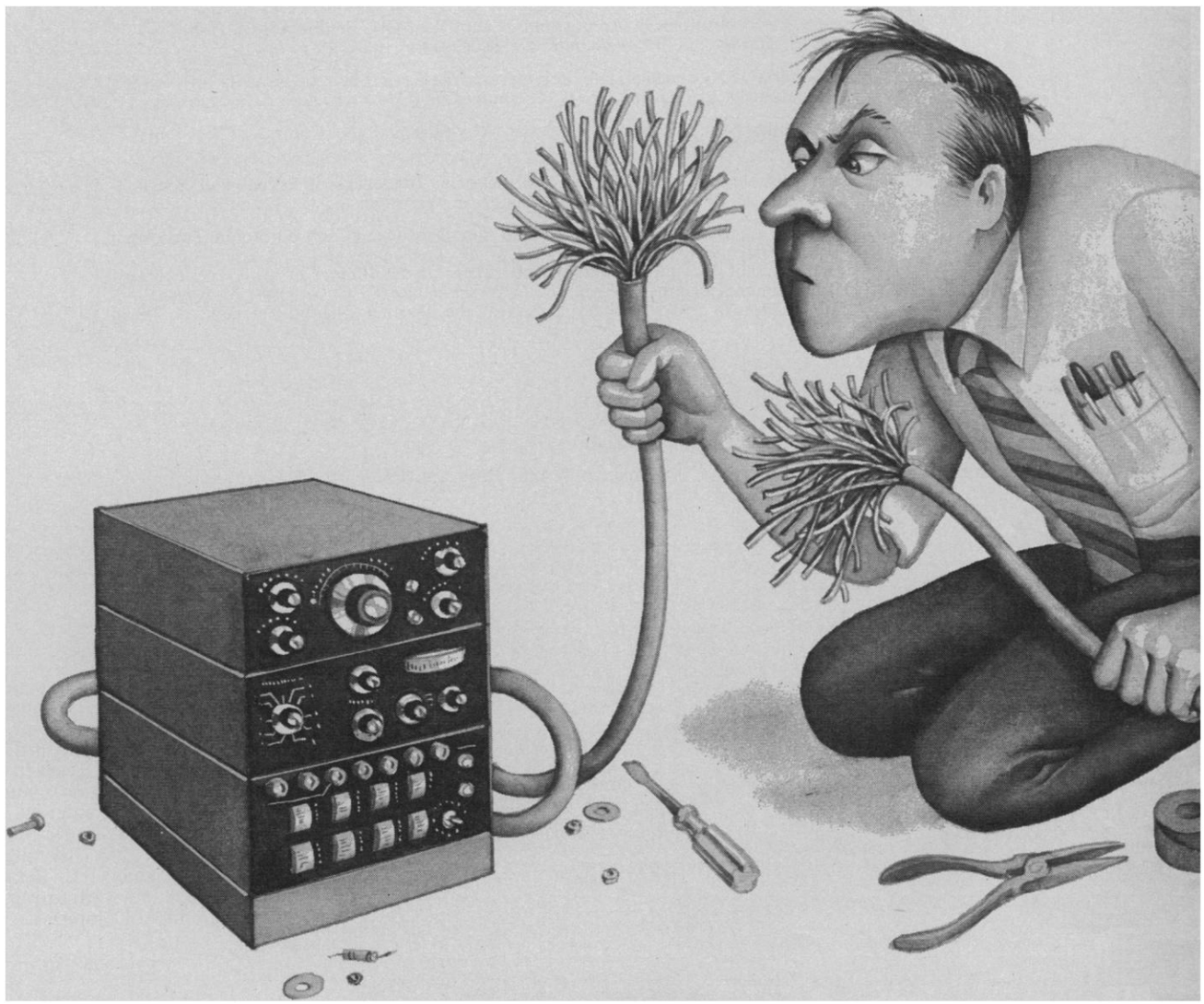

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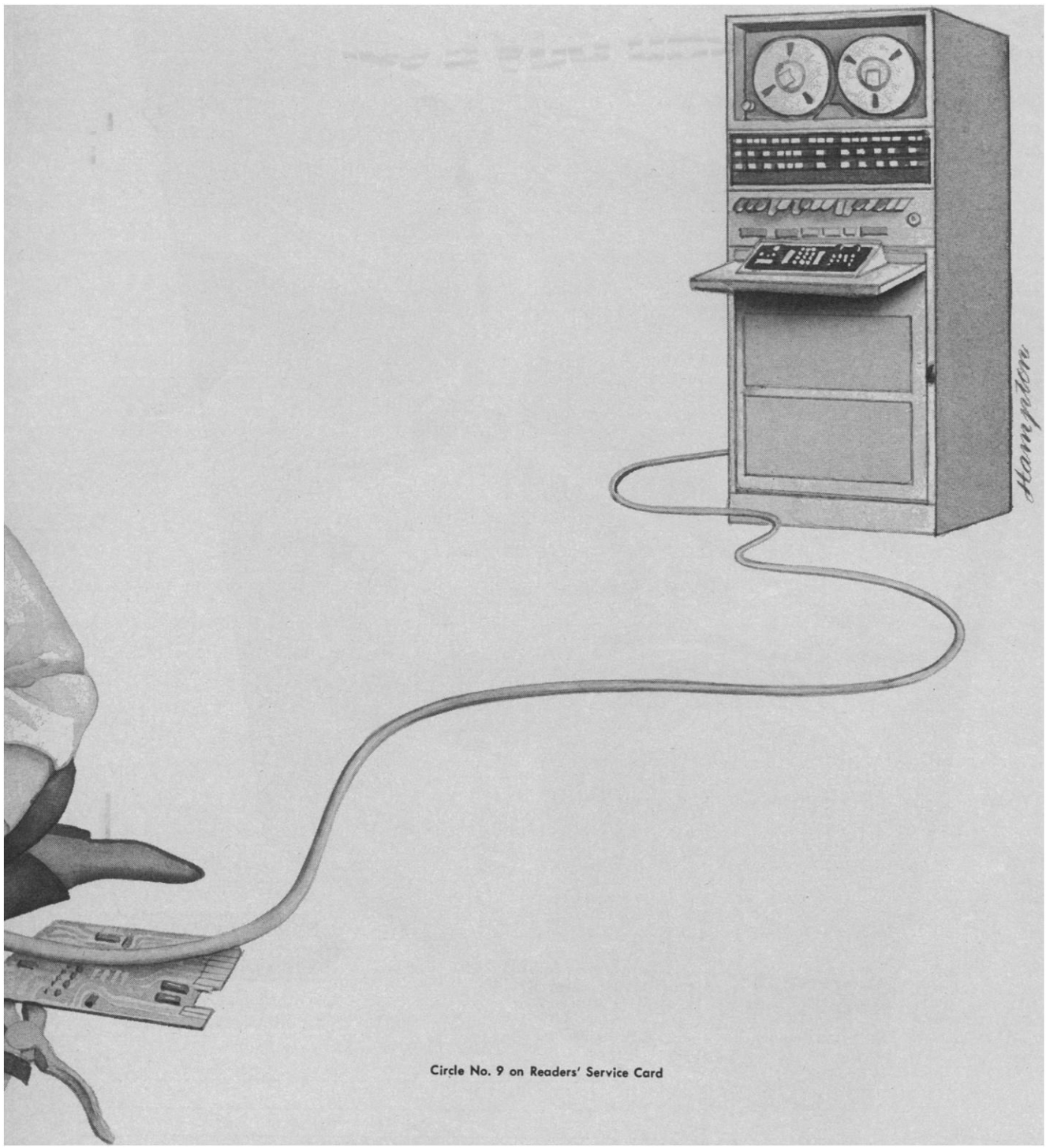

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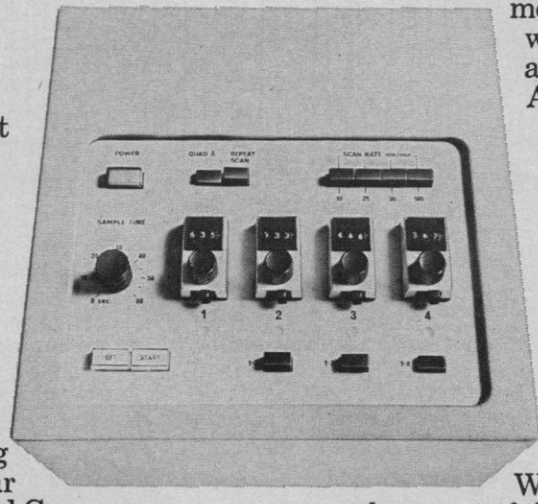

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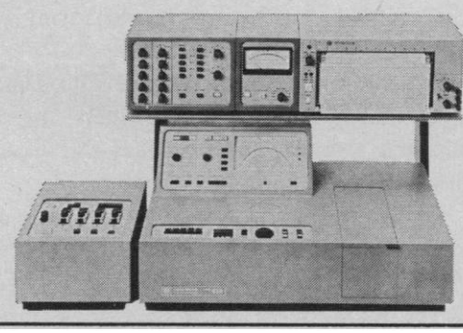

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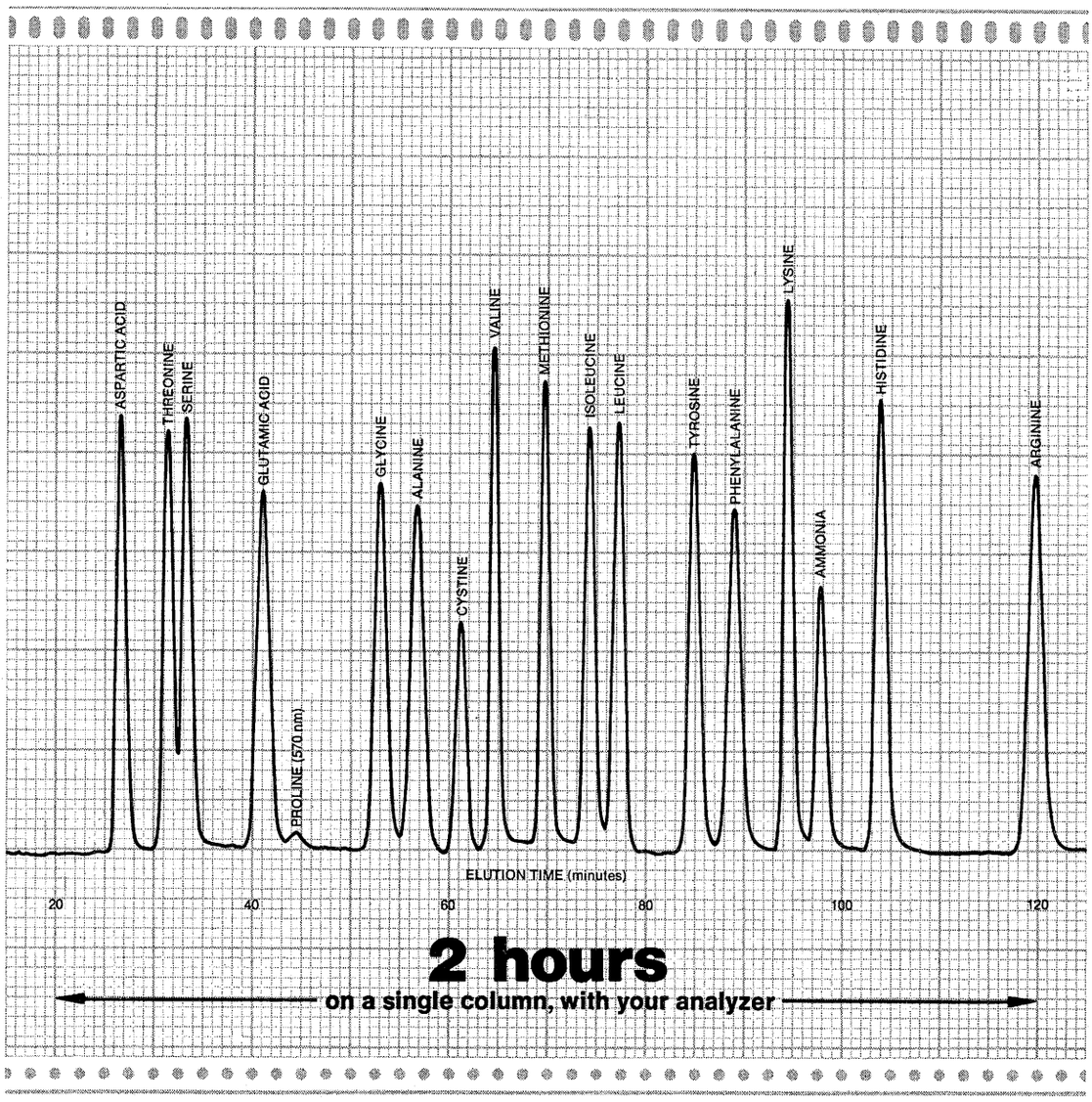

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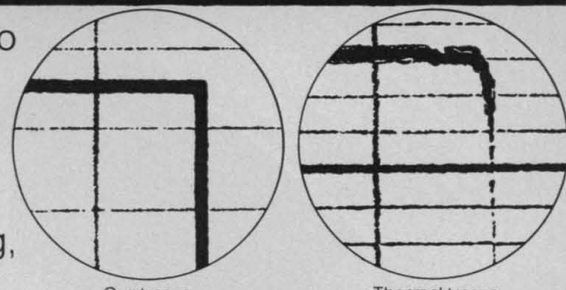

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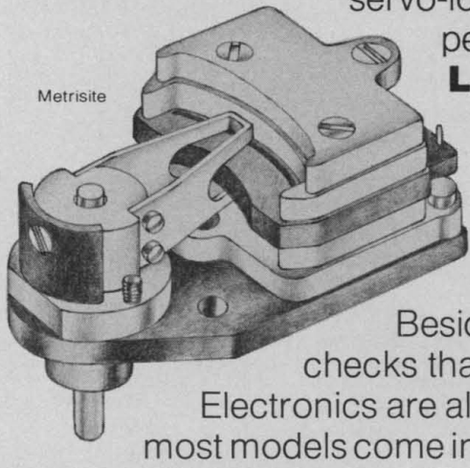

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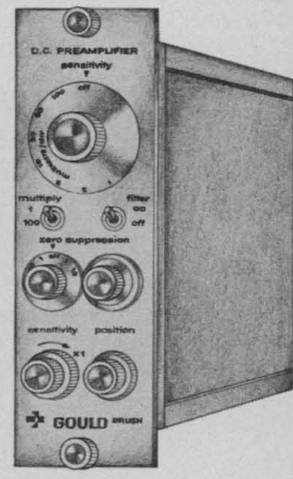
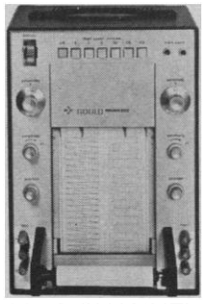


If you'd like to know more about Brush Recorders, contact your nearest Gould Sales Engineer or Representative. Or write for detailed performance information and specifications. Gould Inc., Instrument Systems Division, 3631 Perkins Avenue, Cleveland, Ohio 44114 or Rue Van Boeckel 38, Brussels 1140, Belgium.

BRUSH INSTRUMENTS

GENERAL PURPOSE



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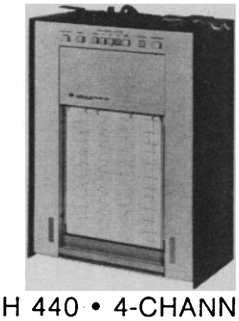

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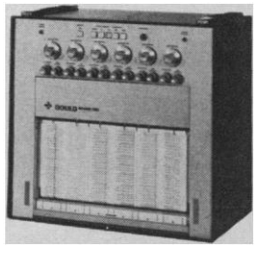

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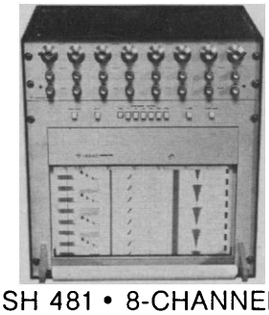

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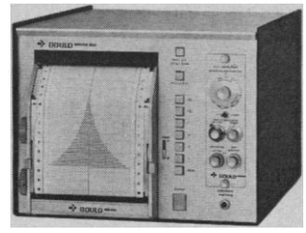

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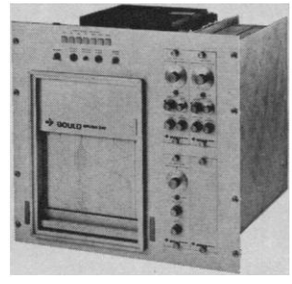

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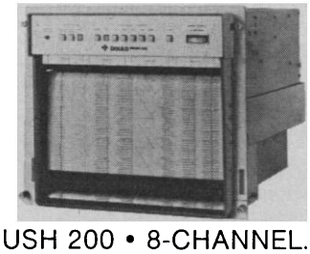

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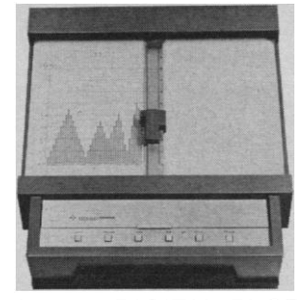

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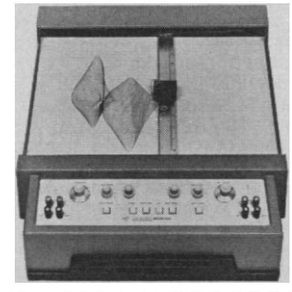

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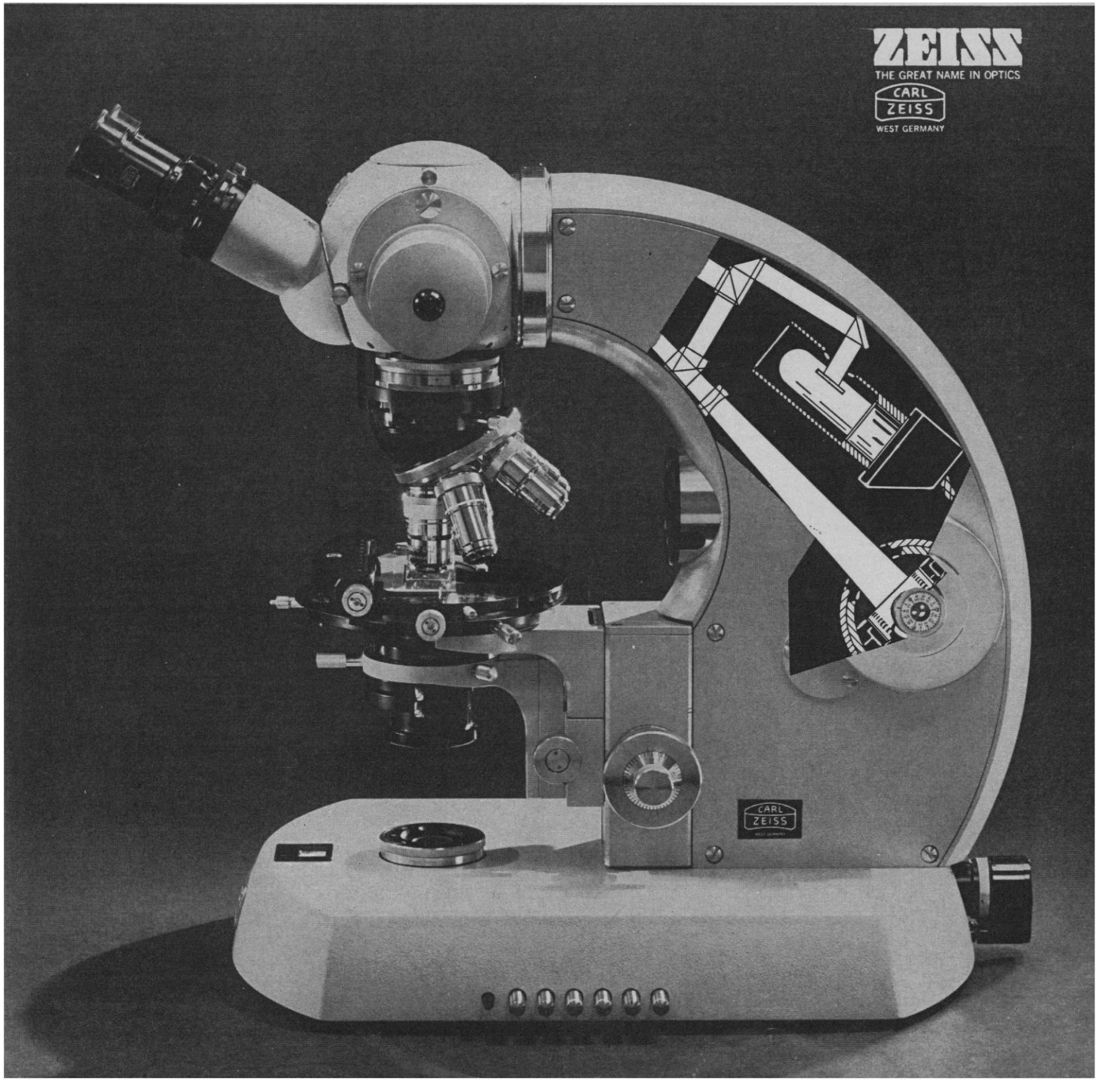

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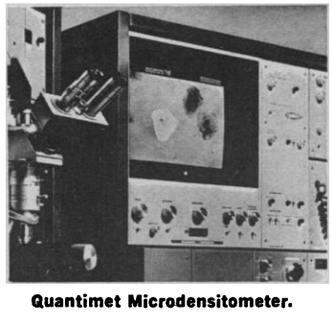

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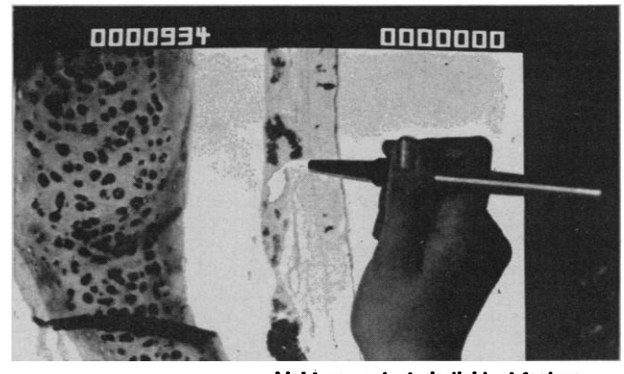

Light pen selects individual features.

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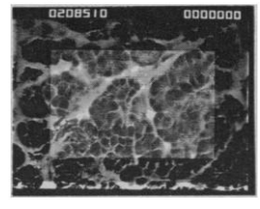
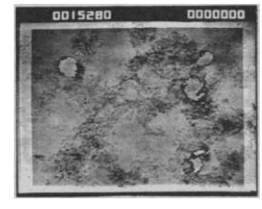
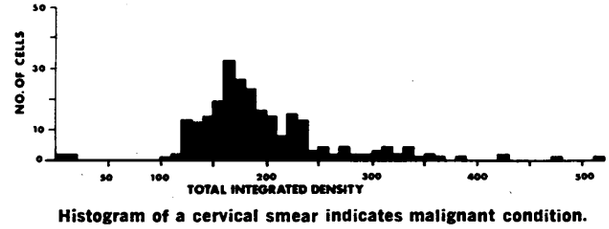


Entire field operation—the total integrated density of the whole measuring area is determined to quantify the non-specific esterase present in the histochemically stained section of mouse pancreas.



All selected features operation — alveolar macrophages in a section of rat lung are selected from the background by grey level, then measured to determine the total integrated density contribution of that acid phosphatase restricted to the alveolar macrophages.



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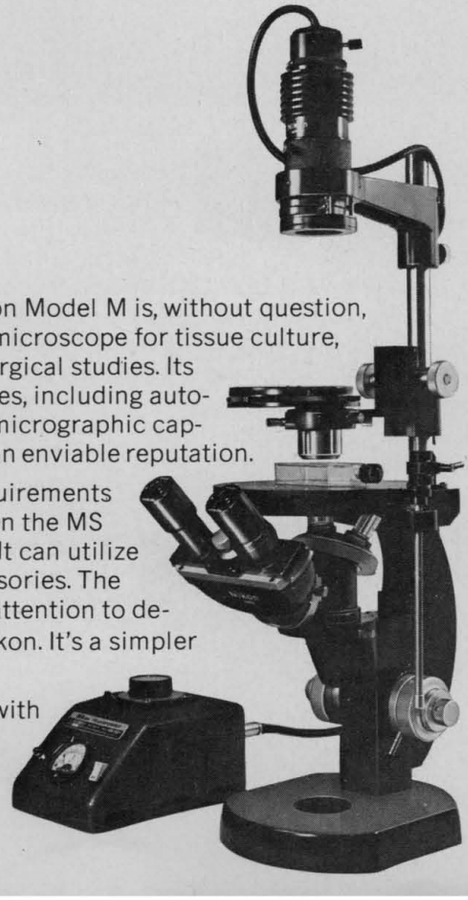

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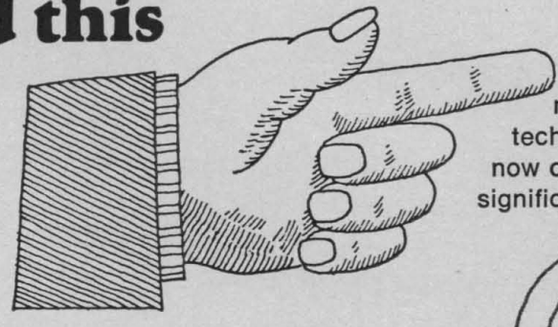

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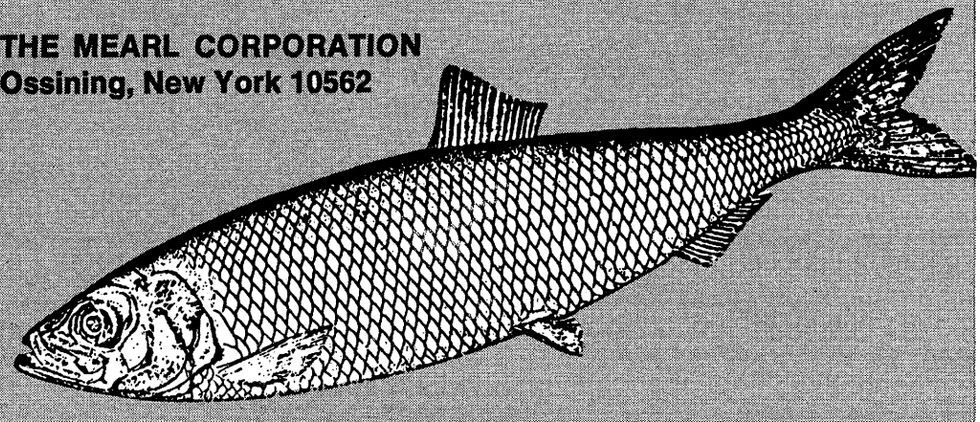

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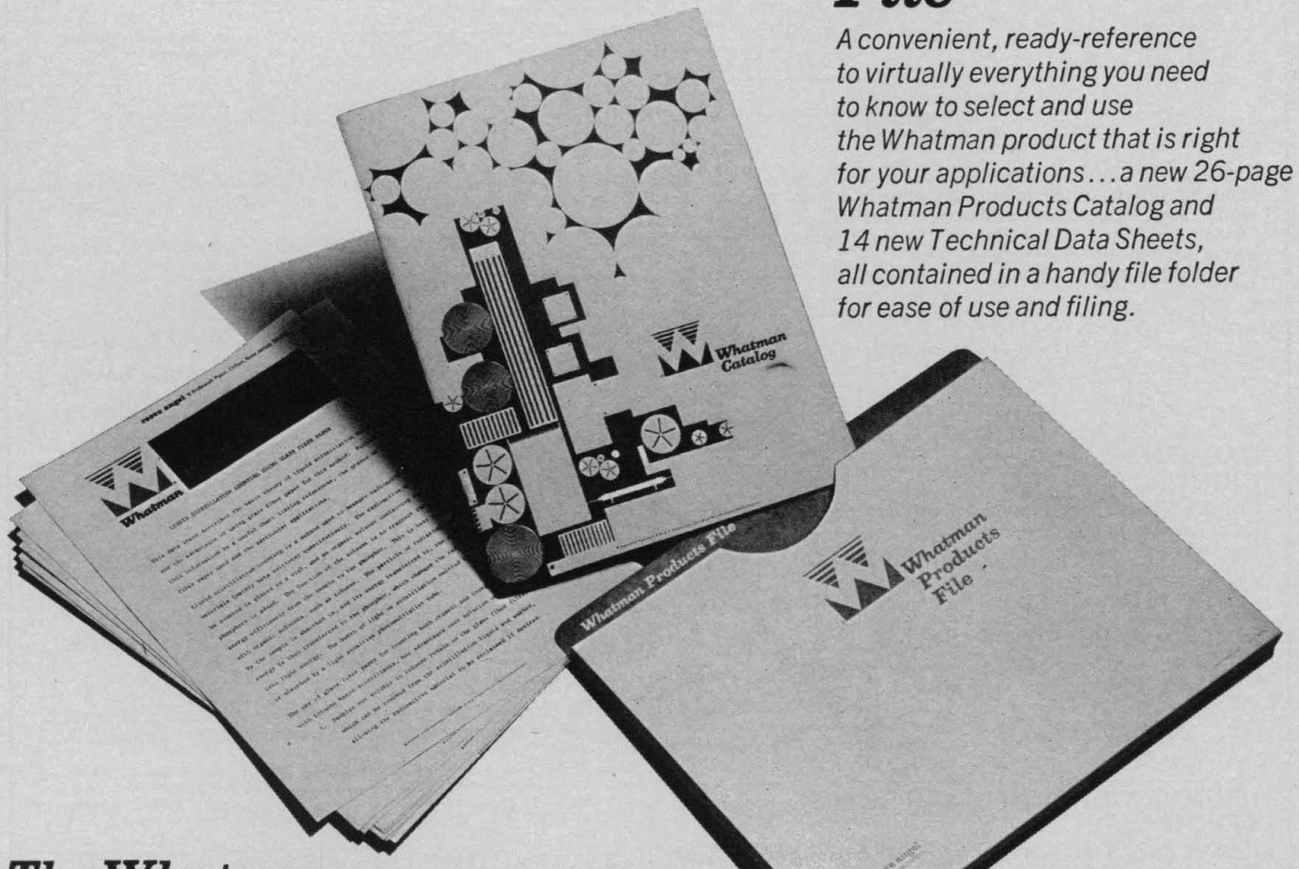

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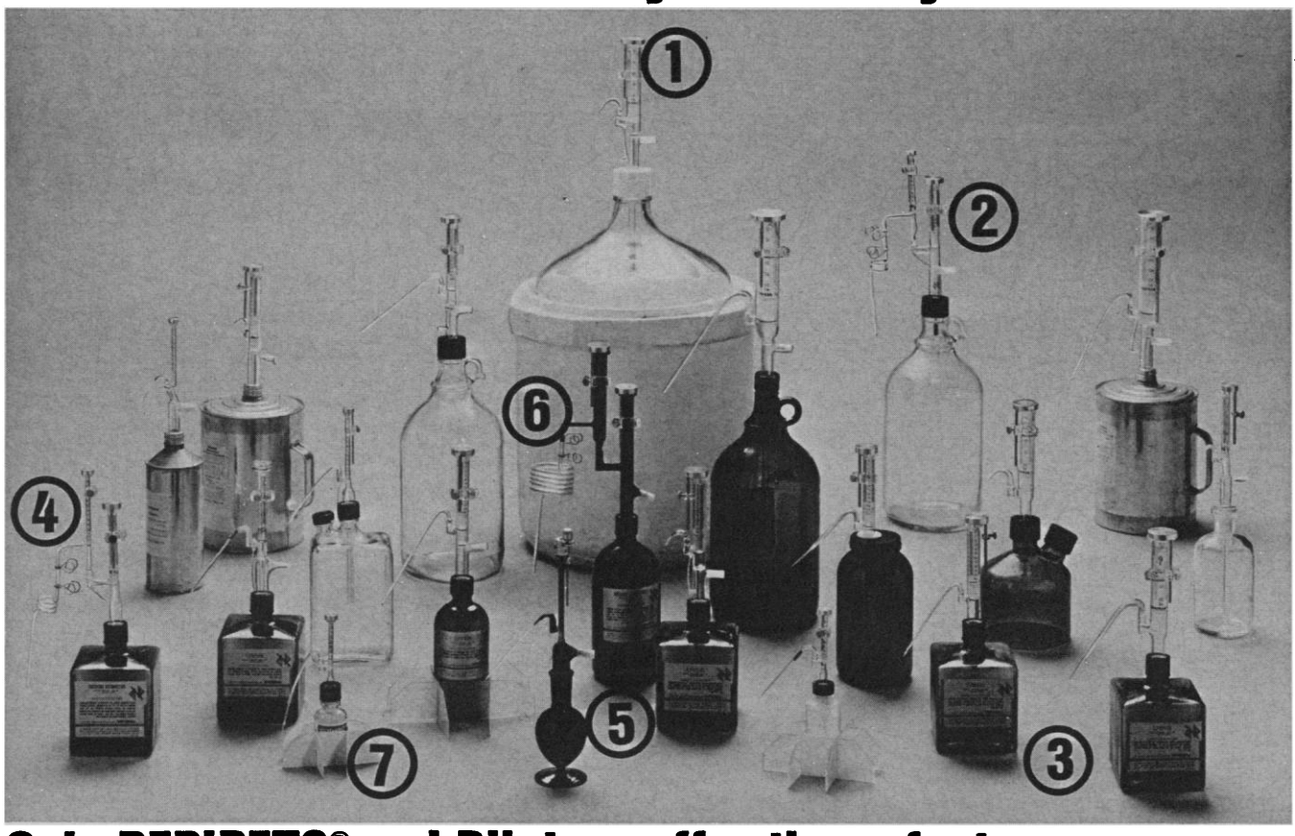

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Sartorius introduces an arresting new balance feature... push-button beam release.

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References

1. H. L. Dreyfus, *What Computers Can't Do: A Critique of Artificial Reason* (Harper & Row, New York, 1972).
2. One of Weizenbaum's colleagues at the Massachusetts Institute of Technology, R. Fano, has already done so in "Implications of Computers to Society" (remarks made at the dedication of the Kiewit Computation Center, Dartmouth College, Hanover, N.H., 1966).

Joseph Weizenbaum states that linguists have observed that in all human languages declarative sentences can often be transformed into questions by a simple change in word order. This principle does not hold for Chinese, a language spoken by about 800 million people, or for Tamil, a language of southern India, which is spoken by more than 30 million people and which is thought to be the world's oldest living language.

Questions are formed in Chinese by adding the word *ma* to the end of a declarative sentence; by using a question word meaning "who," "where," "what," and so forth; by offering a choice (John is busy, not busy?); or in the spoken language by intonation.

In Tamil, as well, questions are never formed by the mere rearranging of declarative sentences. The verb is changed into an interrogative form that is essential for asking questions. Further, this interrogative form of the verb cannot be used in declarative sentences.

MARY ELLEN KARUNAKARAN
ARTHUR MANOHARAN
SYLVIA CHEN
Boston University School of Medicine, Boston, Massachusetts 02118

Karunakaran, Manoharan, and Chen have discovered a blemish in my paper. The sentence in question should have read ". . . in *many* human languages declarative sentences can often be transformed into questions by a permutation of two of their words." All authors should always guard against sentences containing words such as "all" and "always." However, my point is not lost. That point (briefly restated) is that no theory serving merely local criteria of parsimony can be sufficient to account for the structure of human languages. The problem is deeper than that and therefore engenders awe and humility in serious investigators.

Although Coles opens by charging me with "a number of logical and factual errors," he actually alleges only one of each. (Oh well, I suppose *I* counts as a number.) My presumed factual error lies in the assertion that "the direct societal effects of any pervasive new technology are as nothing

compared to its much more subtle and ultimately much more important side-effects." Coles' argument, based, as it is, on the authority of the average person, and on the dismissal of any possible authority of the philosophically inclined, does not deserve rebuttal. As to the presumed logical error in my citation of Herbert Simon's remarks, I can only come to Simon's defense. Simon never spoke of either the complexity of computers or of the complexity of man. He spoke only of the "apparent complexity of . . . [their] behavior (*1*)." This he attributes "to a considerable extent, [to the] complexity of the environment[s]" in which each finds itself and in which each behaves. A crucial distinction! Simon then goes on to say "a man, viewed as a behaving system, is quite simple. . . . I believe this hypothesis holds even for the whole man." My disagreement with Simon is fundamentally that I think it improper to view "the whole man" as a behaving system, or as a moving target, or as a psychiatric patient, or indeed as anything but a whole man.

In an important sense, Coles' letter documents the tragedy to which I tried to call attention in my article. Apparently the fact that *only* the *rare* person who philosophizes comes to ideas different from those attributed by Coles to the average person is sufficient to falsify those ideas without any argumentation or counterdemonstration. It was precisely this kind of anti-intellectualism that I was trying to illuminate when I wrote about the distinction between performance- and theory-based computer systems.

Of course, once the scientist abdicates all responsibility for thinking philosophically to others whose thoughts he may dismiss in favor of the ideology of the average person, then he *needs* to appoint the politician as a guardian of his morality.

I have already declined to accept Coles' invitation to serve him better by telling him what to do. In the last paragraph of my article I wrote: "The fundamental question the computer scientist must ask himself . . . is not 'what shall I do?' but rather 'what shall I be?' "

JOSEPH WEIZENBAUM
Center for Advanced Study in the Behavioral Sciences, 202 Junipero Serra Boulevard, Stanford, California 94305

Reference

1. H. A. Simon, *The Sciences of the Artificial* (M.I.T. Press, Cambridge, Mass., 1969).

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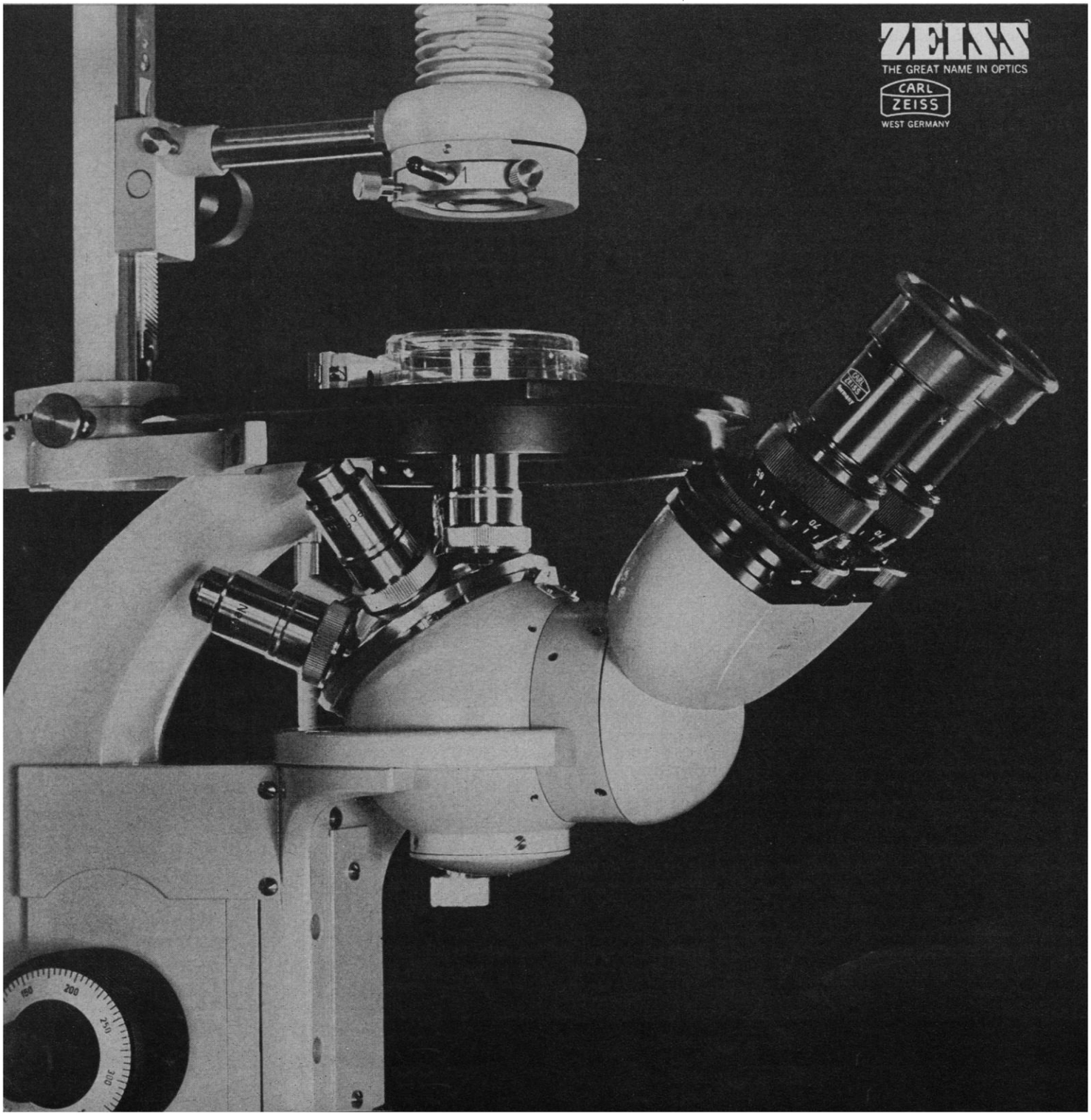

10 November 1972, Volume 178, Number 4061 **SCIENCE**

Misrepresented by "Women's Lib"

It is a pity that the Women's Liberation Movement took the direction it did and acquired an image with which "liberated" as well as "unliberated" women quite frequently cannot identify. Rightly or wrongly, in the mind of the public "Women's Lib" tends to represent a group of sexually frustrated women trying to take revenge on men, whom they secretly admire but are unable to attract.

This image is a liability to the cause of women. Discrimination against women is a fact and a severe problem. Women's rights involve more significant matters than questions like who should wash the dishes. These are essentially private problems and should remain a matter of choice for the individual. What are important are such "public" problems as legal rights, equal pay for equal work, and protection against discrimination in getting jobs or promotions.

Thinking of man as the enemy is alien to many women who enjoy their femininity and are genuinely fond of men. The group of women I am talking about is not interested in finding out how to live without men but would like to know how to live and work with men in a mutually satisfying way. These women do not want to avoid having a family but are interested in having both a family and a career. This often means doing two jobs, one at home and one at work, and they are willing to do so. These are the many working women who do not wish to throw away their families, or their bras, but want to get satisfaction from both their private lives and their careers. Unfortunately nothing is heard of this group because it is so much more newsworthy to report on the odd, the shocking, or the ridiculous.

Such basic rights for women as equal pay for equal work and equal opportunity in hiring and promotion are relatively explicit, although not necessarily clear-cut in every situation. Much more difficult to pin down are the subtle "put-downs" that men engage in when faced with women in professional or occupational environments. The intensity of the "put-downs" seems to increase in direct proportion with the competence of the woman colleague involved.

Academia is a rather dramatic example of an institution in which sex discrimination exists. A recent study at Rutgers University, for example, found that while men faculty are more or less evenly distributed in the upper and lower faculty ranks, the women are concentrated in the lower, nontenured ranks. Women at the full professor rank are on the average older than the men full professors and earned their Ph.D.'s earlier. Moreover, the qualifications of Ph.D. and publication seem to be rigorously applied to women faculty, while a number of men who have no Ph.D. or who have not published are found in the senior ranks.

The married woman fares even worse than her unmarried colleague, according to a study by the National Academy of Sciences. The salaries received by married women were 70 to 75 percent of those received by men at the same interval after receipt of the doctorate. Salaries of single women were somewhat higher than those of married women, although still markedly lower than men's salaries.

Examples of this kind abound, and men should take an honest, soul-searching look at the problems and aspirations involved. Perhaps if they understand them better they will become more sympathetic to the cause of women who do not want separate lives from them, but would like to be equal partners and be given the opportunity to develop and contribute their talents for the enrichment and enjoyment of life lived by men and women together.—SUSAN ARTANDI, *Graduate School of Library Service, Rutgers University, State University of New Jersey, New Brunswick 08903*

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The program for the Conferences is as follows:

Electrochemistry

James D. E. McIntyre, chairman; Stanley Bruckenstein, vice chairman.

8 January. Solid-state electrochemistry (D. O. Raleigh, discussion leader); James C. Phillips, "Structural principles for new ternary solid electrolytes"; Boone B. Owens, "Thermodynamic properties of AgI-based solid electrolytes"; Walter L. Roth, "Structure and ionic transport in super ionic conductors."

9 January. Bioelectrochemistry (F. W. Cope, discussion leader): Gilbert N. Ling, "Molecular mechanism of the electrical potential of living cells"; Arthur A. Pilla, "Electrochemical phenomena in growth processes"; Ralph N. Adams, "Applications of electrochemical techniques in the neurosciences"; Philip N. Sawyer, "Electrochemical aspects of thrombogenesis—bioelectricity old and new."

10 January. Surface chemistry and physics of metals (B. E. Conway, discussion leader): Robert Gomer, "Energy distributions in field emission"; Michael J. Dignam, "Infrared spectroscopy of adsorbed species"; Gabor Somorjai, "LEED and Auger electron spectroscopy studies of reactions on platinum surfaces"; Arthur T. Hubbard, "Study of oriented single crystal electrodes by thin-layer electro-chemistry and LEED."

11 January. Electrochemical adsorption and catalysis (E. B. Yeager, discussion leader): Roger Parsons, "Catalysis by electrodes"; M. W. Breiter, "Adsorption of organic compounds at noble metal electrodes"; V. S. Bagotzky, "Electrocatalysis"; N. A. Shumilova, "Oxygen electrode reactions."

12 January. Electrode kinetics (A. J. Bard, discussion leader): Donald E. Smith, "The multiplex modes of A. C. polarography"; Barry Miller, "Hydrodynamic modulation at rotating ring-disk electrodes."

Polymers

John I. Lauritzen, Jr., chairman; Roger S. Porter, vice chairman.

15 January. (J. F. Johnson, session

chairman): G. Wegner, "Solid state polymerization"; D. Reneker, "Formation of crystalline polymer inside monomer crystals; solid state polymerization of trioxane and related compounds." (W. T. Barry, session chairman): J. Lando, "Solid state polymerization of monolayers and multilayers."

16 January. (H. D. Keith, session chairman): A. Keller, "Polymer crystallization"; F. Khoury, "On the morphology of 6-6 nylon crystallized from solution." (R. K. Eby, session chairman): J. D. Hoffman, "Some new developments in the theory of polymer crystallization and their application."

17 January. (F. Bailey, session chairman): F. McGarry, "Toughened thermoset resins"; H. Keskkula, "Rubber toughening of polystyrene." (W. R. McDonald, session chairman): F. Winslow, "Weathering of polyethylene."

18 January. (J. Knox, session chairman): J. C. W. Chien, "Morphology and properties of collagenous materials"; R. K. Eby, "Observations of the glass transition in polyethylene." (J. I. Lauritzen, Jr., session chairman): Open session.

19 January. (R. Porter, session chairman): A. Peterlin, "Fracture of polymers with fiber structure"; N. Tschoegl, "Dynamic mechanical properties of block copolymer blends; a study of the effects of terminal chains in elastomeric materials."

Biochemistry of Aging

Denham Harman, chairman.

22 January. Opening remarks: Steven M. Horvath. (F. Marott Sinex, chairman); Nucleus: G. Roger Chalkley, "Nuclear changes with age"; Robert Painter, "DNA repair mechanisms and age." (D. Rao Sanadi, chairman); Mitochondria: David R. Wolstenholme, "Mitochondrial biogenesis."

23 January. Mitochondria: Bertram Sacktor, "Effect of age on oxidative-phosphorylation and mitochondrial enzymes activities." (Bernard L. Strehler, chairman); Endoplasmic reticulum: Albert A. Barber and Lynn Grinna, "Changes in structure, composition, and function with age." Lysosomes: Gerald Weisman, "Lysosomes and aging."

24 January. (Charles H. Barrows, Jr., chairman); Hormones: Richard Adelman, "Hormonal changes with age"; Connective tissues: Carl Franzblou, "Changes in collagen, elastin, and mucopolysaccharides with age." (Roy Walford, chairman); Immune system:

T. Makinodan, "Cellular aspects of age-associated impairment of the immune system."

25 January. (Leonard Hayflick, chairman); Protein synthesis: Robert Schimke, "Effect of age on protein synthesis." Lipids: James Mead, "Lipids and aging." Linus Pauling.

26 January. (William F. Forbes, chairman); Trace elements: Klaus Schwarz, "Trace elements"; D. J. Eatough and R. M. Izatt, "Trace elements: effect of age on function and tissue concentration." (Ralph Goldman, chairman); Practical considerations: Le Roy E. Duncan, "How can we best apply current aging knowledge to the problem of increasing the healthy life span of man?"

Forthcoming Events

December

10–13. Association of **Military Surgeons** of the United States, Washington, D.C. (W. Welham, AMSUS, 8505 Connecticut Ave., Chevy Chase, Md. 20015)

11–14. **Health Physics** Soc., 7th midyear topical symp., San Juan, Puerto Rico. (P. Paraskevoudakis, Puerto Rico Nuclear Center, College St., Mayaguez 00708)

11–15. American Soc. of **Agricultural Engineers**, Chicago, Ill. (J. L. Butt, ASAE, P.O. Box 229, St. Joseph, Mo. 49085)

11–15. **Neutron Monitoring for Radiation Protection Purposes**, Intern. Atomic Energy Agency, Vienna, Austria. (J. H. Kane, Information Services, Atomic Energy Commission, Washington, D.C. 20545)

11–15. **Uncertainties in Hydrologic and Water Resources System**, sponsored by Intern. Assoc. of Hydrologic Sciences, American Geophysical Union, U.S. Geological Survey (Water Resources Div.), Tucson, Ariz. (C. C. Kisiel, Dept. of Hydrology and Water Resources, Univ. of Arizona, Tucson 86721)

14–15. **Derivatization in Chromatography**, Gainesville, Fla. (R. F. Severson, Florida Chromatography Discussion Group, Route 4, Box 25-E, Lake City 32055)

14–16. Symposium on **Computer and Information Science**, 4th intern., Miami Beach, Fla. (COINS-72, Center for Informatics Research, 339 Larsen Hall, Univ. of Florida, Gainesville 32601)

14–19. American Acad. of **Optometry**, New York, N.Y. (C. C. Koch, AAO, 214–215 Foshay Tower, Minneapolis, Minn. 55402)

15–16. **Cerebral Function** Symp., 4th annual, San Juan, Puerto Rico. (L. Smith, Cortical Function Lab., Porter Memorial Hospital, 2525 S. Downing St., Denver, Colo. 80210)

17–21. **Gerontological** Soc., San Juan, Puerto Rico. (E. Kaskowitz, GS, Suite 520, 1 Dupont Circle, Washington, D.C. 20036)

18–20. **Research into Tertiary Science**, Society for Research into Higher Edu-

cation, Assoc. for Programmed Learning and Education Technology, Assoc. for Science Education, Chemical Soc., and Inst. of Physics, London, England. (D. E. Billing, Thames Polytechnic, Wellington St., London, S.E.18 6PF)

18–22. **Relativistic Astrophysics,** 6th Texas symp., New York, N.Y. (A. G. W. Cameron, Belfer Graduate School of Science, Yeshiva Univ., New York 10033)

26–30. Society for **General Systems Research,** Washington, D.C. (R. F. Ericson, 12613 Bunting Lane, Bowie, Md. 20715)

26–30. Western Soc. of **Naturalists,** Arcata, Calif. (D. H. Montgomery, Dept. of Biological Sciences, California Polytechnic State College, San Luis Obispo 93401)

26–30. Society of **Systematic Zoology,** Washington, D.C. (J. A. Peters, Natl. Museum of Natural History, Washington, D.C. 20650)

26–31. American Assoc. for the **Advancement of Science,** 139th, Washington, D.C. (Meetings Office, AAAS, 1444 N St., NW, Washington, D.C. 20005)

26–31. **Animal Behavior** Soc., Washington, D.C. (N. M. Jessop, Dept. of Biology, California Western Campus, U.S. Intern. Univ., San Diego)

26–31. **Metric** Assoc., Washington, D.C. (R. W. Mattoon, Chemical Physics, Dept. 408, Abbott Labs., North Chicago, Ill. 60064)

27–29. Society for the **History of Technology,** Washington, D.C. (M. Kranzberg, Crawford Hall, Case Western Reserve Univ., Cleveland, Ohio 44106)

27–29. American **Philosophical** Assoc., Eastern Div., Boston, Mass. (N. E. Bowie, Hamilton College, Clinton, N.Y. 13323)

27–29. American **Physical** Soc., Los Angeles, Calif. (W. W. Havens, Jr., APS, 335 E. 45 St., New York, N.Y. 10017)

27–30. **Archaeological** Inst. of America, Philadelphia, Pa. (E. A. Whitehead, AIA, 260 W. Broadway, New York 10013)

28–30. American **Economic** Assoc., Toronto, Ont., Canada. (R. Fels, 1313 21 Ave. S., Nashville, Tenn. 37212)

28–30. **History of Science** Soc., Washington, D.C. (R. H. Stuewer, Div. of General Education, Boston Univ., Boston, Mass. 02215)

January

3–5. **Solid State Physics** Conf., 10th annual, Inst. of Physics, Manchester, England. (Meetings Officer, Inst. of Physics, 47 Belgrave Sq. London, SW1X 8QX, England)

8–10. American Inst. of **Aeronautics & Astronautics,** Washington, D.C. (J. J. Harford, AIAA, 1290 Ave. of the Americas, New York 10019)

9–12. American **Astronomical** Soc., Las Cruces, N.M. (H. M. Gurin, AAS, 211 FitzRandolph Rd., Princeton, N.J. 08540)

9–13. National Soc. of **Professional Engineers,** Salt Lake City, Utah. (P. H. Robbins, NSPE, 2029 K St., NW, Washington, D.C. 20006)

14–19. **Protein Phosphorylation in Control Mechanisms,** Miami, Fla. (W. J. Whelan, Dept. of Biochemistry, School of Medicine, Univ. of Miami, P.O. Box 875, Biscayne Annex, Miami 33152)

15–16. **Regional Environmental Management** Conf., San Diego, Calif. [L. E. Coate, REMC, County of San Diego, Environmental Development Agency, Integrated Regional Environmental Management (IREM) Project, 1600 Pacific Hwy., San Diego 92101]

15–17. **Lunar Dynamics and Observational Coordinate Systems,** Houston, Tex. (J. D. Mulholland, Lunar Science Inst., 3303 NASA Rd. 1, Houston 77058)

15–18. American **Crystallographic** Assoc., Gainesville, Fla. (Mrs. E. E. Snider, ACA, 335 E. 45 St., New York 10017)

15–19. **Geophysics of the Earth and the Oceans,** 2nd intern. conf., Australian Inst. of Physics and Australian Soc. of Exploration Geophysicists, Sydney. (B. D. Johnson, School of Earth Sciences, Macquarie Univ., North Ryde, New South Wales 2113, Australia)

22–26. **Nuclear Power Plant Control and Instrumentation,** Intern. Atomic Energy Agency, Prague, Czechoslovakia. (J. H. Kane, Office of Information Services, U.S. Atomic Energy Commission, Washington, D.C. 20545)

24–28. American College of **Psychiatrists,** New Orleans, La. (P. A. Martin, 16300 N. Park Dr., Southfield, Mich. 48075)

25–29. American **Mathematical** Soc., Dallas, Tex. (G. L. Walker, AMS, P.O. Box 6248, Providence, R.I. 02904)

26. **Bibliographical** Soc. of America, New York, N.Y. (Miss C. Hover, Box 397, Grand Central Sta., New York 10017)

27–29. **Mathematical** Assoc. of America, Dallas, Tex. (H. Alder, Dept. of Mathematics, Univ. of California, Davis 95616)

28–1. American Soc. of **Heating, Refrigeration, and Air-Conditioning Engineers,** Chicago, Ill. (A. T. G. Boggs III, ASHRAE, 345 E. 47 St., New York 10017)

28–2. **Power Engineering** Soc., Inst. of Electrical and Electronics Engineers, New York, N.Y. (J. W. Bean, IEEE-PES, 345 E. 47 St., New York 10017)

28–3. American **Library** Assoc., Washington, D.C. (R. Wedgeworth, ALA, 50 E. Huron St., Chicago, Ill. 60611)

28–6. North American Conf. on **Fertility and Sterility,** U.S. Intern. Foundation for Studies in Reproduction, Acapulco, Mexico. (Mrs. F. Royce, 112-44 69th Ave., Forest Hills, N.Y. 11375)

29–1. American Assoc. of **Physics Teachers,** Albany, N.Y. (W. V. Johnson, AAPT, 1785 Massachusetts Ave., NW, Washington, D.C. 20036)

31–2. Western **Spectroscopy** Assoc., Pacific Grove, Calif. (G. R. Haugen, L-404, Univ. of California, Lawrence Livermore Lab., Livermore 94550)

February

7–8. **Organic Matter in Water Supplies: Occurrence, Significance, and Control,** 15th water quality conf., Champaign, Ill. (V. L. Snoeyink, Dept. of Civil Engineering, Univ. of Illinois at Urbana-Champaign, Urbana 61801)

8–9. **Geodesy/Solid Earth and Ocean Physics** Research, 2nd conf., American Geophysical Union, Columbus, Ohio. (A. F. Spilhaus, Jr., AGU, 1707 L St., NW, Washington, D.C. 20036)

8–9. Association for **Hospital Medical Education**, Chicago, Ill. (T. G. Kummer, AHME, 1911 Jefferson Davis Hwy., Arlington, Va. 22202)

9–16. American Soc. of **Clinical Pathologists**, Honolulu, Hawaii. (G. F. Stevenson, ASCP, 2100 W. Harrison St., Chicago, Ill. 60612)

10–11. **Medical Education**, 69th annual congr., American Medical Assoc., Chicago, Ill. (C. H. W. Ruhe, AMA Council on Medical Education, 535 N. Dearborn St., Chicago 60610)

10–14. American Acad. of **Allergy**, Washington, D.C. (J. O. Kelley, AAA, 225 E. Michigan St., Milwaukee, Wis. 53202)

10–15. Society for **Range Management**, Boise, Idaho. (F. T. Colbert, SRM, 2120 S. Birch St., Denver, Colo. 80222)

12–14. **Energy: Demand, Conservation and Institutional Problems**, National Science Foundation RANN Program and Massachusetts Inst. of Technology, Cambridge, Mass. (M. R. Bateman, Industrial Liaison Office, Massachusetts Inst. of Technology, Cambridge 02139)

14–16. **Solid-State Circuits**, intern. conf., Inst. of Electrical and Electronics Engineers, Inc., Philadelphia, Pa. (L. Winner, 152 W. 42 St., New York 10036)

14–18. American College of **Cardiology**, San Francisco, Calif. (W. D. Nelligan, ACC, 9650 Rockville Pike, Bethesda, Md. 20014)

16–17. Symposium on **Immunopharmacology**, New York Heart Assoc., New York, N.Y. (I. Saulpaugh, NYHA, 2 E. 64 St., New York 10021)

18–24. **Effects of Low-Frequency Magnetic and Electric Fields on Biological Communication Processes**, Natl. Science Foundation, Neuroelectric Soc., and Intern. Inst. for Medical Electronics and Biological Engineering, Snowmass-at-Aspen, Colo. (A. Sances, Jr., NS, 8700 W. Wisconsin Ave., Milwaukee, Wis. 53226)

19–22. International Symp. on **Hydrometallurgy**, Chicago, Ill. (D. J. I. Evans, Research and Development Div., Sherritt Gordon Mines Ltd., Fort Saskatchewan, Alta., Canada)

20. National Assoc. of **Medical Examiners**, Las Vegas, Nev. (P. Hudson, P.O. Box 2488, Chapel Hill, N.C. 27514)

20–23. American Acad. of **Forensic Sciences**, Las Vegas, Nev. (J. T. Weston, 44 Medical Dr., Salt Lake City, Utah, 84113)

21–24. Society of **Professors of Education**, Chicago, Ill. (R. E. Bayles, School of Education, Atlanta Univ., Atlanta, Ga. 30314)

21–6. American **Medical** Assoc. and **Weizmann Inst. of Science**, Tel Aviv, Israel. (Israel Scientific Conf., Dept. of Intern. Medicine, AMA, 535 N. Dearborn St., Chicago, Ill. 60610)

24–27. American Assoc. of **Pathologists and Bacteriologists**, Washington, D.C. (A. J. French, Univ. of Michigan Medical Center, Ann Arbor 48104)

24–3. International Acad. of **Pathology**, U.S.–Canadian Div., Washington, D.C. (L. D. Stoddard, Dept. of Pathology, Medical College of Georgia, Augusta 30902)

25. Oregon **Acad. of Science**, Salem. (H. D. Reese, Dept. of Chemistry, Oregon State Univ., Corvallis 97331)

25–1. American Inst. of **Mining, Metallurgical and Petroleum Engineers**, Chicago, Ill. (J. B. Alford, AIMMPE, 345 E. 47 St., New York 10017)

25–3. Continuing Education for **Excellence in Medicine and Surgery**, American Soc. of Contemporary Medicine and Surgery, Miami Beach, Fla. (Miss V. Kendall, Suite 1629, ASCMS, 30 N. Michigan Ave., Chicago, Ill. 60602)

26–1. American **Educational Research** Assoc., New Orleans, La. (R. A. Dershimer, AERA, 1126 16th St., NW, Washington, D.C. 20036)

27–2. **Biophysical** Soc., Columbus, Ohio. (M. O. Dayhoff, Natl. Biomedical Research Foundation, Georgetown Univ. Medical Center, 3900 Reservoir Rd., NW, Washington, D.C. 20007)

28–3. American Assoc. of **Petroleum Geologists**, Rocky Mountain Div., Salt Lake City, Utah. (Miss K. Watson, AAPG, 1444 S. Boulder, Tulsa, Okla. 74101)

28–4. American **Psychological** Assoc., Div. of Psychotherapy, Freeport, Grand Bahama Island. (V. Rosenthal, 815 Indian Rd., Glenview, Ill. 60025)

March

1–2. **Fracture and Flaws**, 13th annual symp., American Soc. of Mechanical Engineers and American Soc. for Metals, Albuquerque, N.M. (D. Buchanan, Organization 9310K, Sandia Labs., Albuquerque 87115)

2–3. International **Geobotany** Conf., Knoxville, Tenn. (C. Amundsen, Graduate Program in Ecology, Univ. of Tennessee, Knoxville 37916)

3–9. American **Concrete** Inst., annual, Atlantic City, N.J. (ACI, Box 4754 Redford Sta., Detroit, Mich. 48219)

5–7. **Particle Accelerator** Conf., 5th, San Francisco, Calif. (E. J. Lofgren, Lawrence Radiation Lab., Univ. of California, Berkeley 94720)

5–7. National Federation of **Science Abstracting and Indexing Services**, Philadelphia, Pa. (S. Kennan, NFSAIS, 2102 Arch St., Philadelphia 19103)

5–9. **Medical Data Processing** Symp., Inst. for Research and Automation, Toulouse, France. (E. E. Van Brunt, Permanente Medical Group, 3779 Piedmont Ave., Oakland, Calif. 94611)

6–10. **Lymphology**, 4th intern. congr., Tucson, Ariz. (C. L. Witte, Dept. of Surgery, Univ. of Arizona College of Medicine, Tucson 85721)

8–11. Southern **Anthropological** Soc. (9th annual) and American **Ethnological** Soc., Wrightsville Beach, N.C. (T. Fitzgerald, Dept. of Sociology and Anthropology, Univ. of North Carolina at Greensboro, Greensboro 27412)

9–10. Pennsylvania **Acad. of Science**, Carlisle. (G. C. Shoffstall, Jr., 214 Whitmore Lab., Pennsylvania State Univ., University Park 16802)

11–16. American Soc. of **Photogrammetry**, Washington, D.C. (L. P. Jacobs, 105 N. Virginia Ave., Falls Church, Va. 22046)

12–13. **Drugs, Hormones and the Kidney**, 4th annual nephrology conf., American Heart Assoc., Inc., Philadelphia, Pa. (Dept. of Councils, AHA, 44 E. 23 St., New York 10010)

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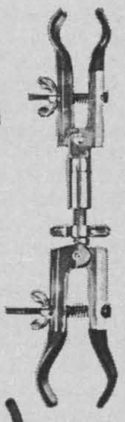

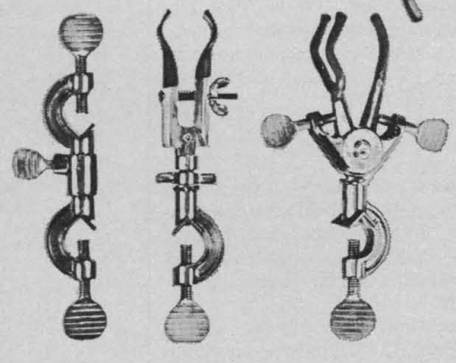

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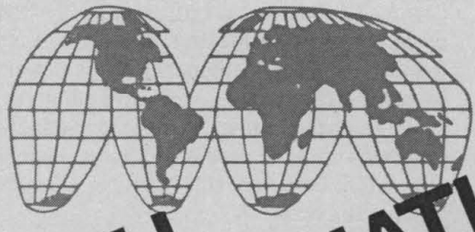

SEVENTH MILES INTERNATIONAL SYMPOSIUM:

ROLE OF IMMUNOLOGICAL FACTORS IN VIRAL AND ONCOGENIC PROCESSES

Roland F. Beers, Jr., M.D., Ph.D., Chairman
to be held in two Sections

WESTERN HEMISPHERE SECTION:
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Johns Hopkins Medical Institutions
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EASTERN HEMISPHERE SECTION:
June 6-7, 1973
Hotel Inter-Continental
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C. J. O'Donovan, M.D., Symposium Coordinator

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12–15. American Soc. for **Neurochemistry**, 4th, Columbus, Ohio. (L. A. Horrocks, Dept. of Physiological Chemistry, Ohio State Univ., 1645 Neil Ave., Columbus 43210)

12–15. Conference on **Prevention and Control of Oil Spills**, American Petroleum Inst., Environmental Protection Agency, U.S. Coast Guard, Washington, D.C. (J. R. Gould, Suite 700, 1629 K St., NW, Washington, D.C. 20006)

12–16. Symposium on **Applications of Nuclear Data in Science and Technology**, Intern. Atomic Energy Agency, Paris, France. (J. H. Kane, Office of Information Services, U.S. Atomic Energy Commission, Washington, D.C. 20545)

13–16. **Optical** Soc. of America, Denver, Colo. (M. E. Warga, OSA, 2100 Pennsylvania Ave., NW, Washington, D.C.)

14–16. American Assoc. of **Petroleum Geologists**, Southwest Div., Fort Worth, Tex. (K. Watson, AAPG, 1444 S. Boulder, Box 979, Tulsa, Okla. 74101)

15–16. **Advanced Analytical Concepts for the Clinical Laboratory**, 5th annual, Oak Ridge, Tenn. (C. D. Scott, Oak Ridge Natl. Lab., P.O. Box X, Oak Ridge 37830)

15–16. Symposium on **Drugs and the Unborn Child**, New National Foundation–March of Dimes, New York, N.Y. (M. New, Dept. of Pediatrics, Div. of Pediatric Endocrinology, New York Hospital–Cornell Medical Center, 525 E. 68 St., New York 10021)

15–16. **Estuaries of the Pacific Northwest**, 3rd technical conf., Corvallis, Ore. (L. S. Slotta, Ocean Engineering Programs, School of Engineering, Oregon State Univ., Corvallis 97331)

15–17. Association for **Children with Learning Disabilities**, 10th intern. conf., Detroit, Mich. (K. M. Tillotson, ACLD, 2200 Brownsville Rd., Pittsburgh, Pa. 15210)

15–17. Symposium on **Reproductive Biology, Mating Behavior and Captive Breeding of Felids**, World Wildlife Safari and Inst. for the Study and Conservation of Endangered Species, Winston, Ore. (R. L. Eaton, P.O. Box AL, Winston 97496)

16. Mississippi **Acad. of Sciences**, Biloxi. (D. L. Dodgen, University Medical Center, Jackson, Miss. 39216)

18–21. **Wildlife Management** Inst., Washington, D.C. (L. R. Jahn, WMI, 709 Wire Bldg., Washington, D.C. 20005)

18–22. Society of **Toxicology**, New York, N.Y. (R. A. Scale, ST, Esso Research and Engineering Co., P.O. Box 45, Linden, N.J. 07036)

18–23. **Deafness**, 4th intern. conf., World Federation of the Deaf and Assoc. of the Deaf and Mute in Israel, Tel Aviv, Israel. (A. Reich, Organizing Committee, P.O. Box 16271, Tel Aviv)

19–23. **Characterization of Corrosion Products**, Natl. Assoc. of Corrosion Engineers, Anaheim, Calif. (W. D. France, Jr., General Motors Research Labs., General Motors Technical Center, Warren, Mich. 48090)

22–23. **Information Sciences and Systems**, 7th conf., Princeton, N.J. (T. Pavlidis, Dept. of Electrical Engineering, School of Engineering/Applied Science, Engineering Quadrangle, Princeton 08540)

23–25. **Future Status of Earth Resources in Society**, Natl. Assoc. of Geology Teachers, Central Section, Chicago, Ill. (M. K. Sood, Dept. of Earth Sciences, Northeastern Illinois Univ., Bryn Mawr at St. Louis Ave., Chicago 60625)

26–28. **Engineering Aspects of Magnetohydrodynamics**, Stanford, Calif. (M. Mitchner, Dept. of Mechanical Engineering, Stanford Univ., Stanford 94305)

26–29. Institute of **Electrical and Electronics Engineers**, New York, N.Y. (D. G. Fink, IEEE, 345 E. 47 St., New York 10017)

26–30. Symposium on **New Developments in Radiopharmaceuticals and Labeled Compounds**, Intern. Atomic Energy Agency, Copenhagen, Denmark. (J. H. Kane, Office of Information Services, U.S. Atomic Energy Commission, Washington, D.C. 20545)

27–29. **Reduction of Pollutants in Herterogeneous Combustion Processes**, Combustion Inst., Central States Section, Champaign, Ill. (R. A. Strehlow, 105 Transportation Bldg. Univ. of Illinois, Urbana 61801)

27–29. National Assoc. for **Research in Science Teaching**, Detroit, Mich. (R. W. Lefler, Dept. of Physics, Purdue Univ., Lafayette, Ind. 47907)

29–30. **Rural Health**, American Medical Assoc., Dallas, Tex. (B. L. Bible, AMA, 535 N. Dearborn St., Chicago 60610)

29–31. American **Philosophical** Assoc., Pacific Div., Seattle, Wash. (N. E. Bowie, Hamilton College, Clinton, N.Y. 13323)

29–31. Northwest **Scientific** Assoc., Walla Walla, Wash. (G. H. Deitschman, U.S. Forest Service, P.O. Box 469, Moscow, Idaho 83843)

29–1. Society for **Research in Child Development**, Philadelphia, Pa. (M. K. Harlow, 22 N. Charter St., Madison, Wis. 53706)

30–3. National **Science Teachers** Assoc., Detroit, Mich. (R. H. Carleton, NSTA, 1201 16th St., NW, Washington, D.C. 20036)

31. New Jersey **Academy of Science**, West Long Branch (M. L. Branin, Box 61, Cranbury, N.J. 08512)

31–6. American **Pharmaceutical** Assoc., Chicago, Ill. (W. S. Apple, APA, 2215 Constitution Ave., NW, Washington, D.C. 20037)

April

2–7. American College of **Radiology**, San Francisco, Calif. (W. C. Stronach, ACR, 20 N. Wacker Dr., Chicago, Ill. 60606)

3–5. **Reliability Physics** Symp., Inst. of Electrical and Electronics Engineers, Las Vegas, Nev. (H. Lauffenburger, IIT Research Inst., 10 W. 35 St., Chicago, Ill. 60616)

3–13. **Education of Teachers for Integrated Science**, Committee on Teaching of Science, International Council of Scientific Unions, College Park, Md. (M. Dietz, Science Teaching Center, Univ. of Maryland, College Park 20742)

4–7. American **Fertility** Soc., San Francisco, Calif. (W. C. Stronach, AFS, 1801 Ninth Ave. S., Birmingham, Ala. 35205)

5–7. Alabama **Acad. of Science**, Hunts-

ville. (T. Denton, Biology Dept., Samford Univ., Birmingham, Ala. 35209)

5–7. Michigan **Acad. of Science, Arts and Letters,** Ann Arbor. (T. G. Overmire, MASAL, 2117 Washtenaw Ave., Ann Arbor 48104)

5–7. West Virginia **Acad. of Science,** Fairmont. (E. A. Bartholomew, West Virginia Univ., Morgantown 26506)

5–7. National Council of **Teachers of Mathematics,** Charleston, S.C. (F. A. Kirby, Union County Public Schools, P.O. Box 629, Union, S.C.)

5–9. **Combustion Engines,** 10th intern. congr., American Soc. of Mechanical Engineers, Washington, D.C. (Meetings Officer, ASME, United Engineering Center, 345 E. 47 St., New York 10017)

6–8. American **Psychosomatic** Soc., 30th annual, Denver, Colo. (M. T. Singer, 265 Nassau Rd., Roosevelt, N.Y. 11575)

7–12. American College of **Allergists,** Atlanta, Ga. (E. Bauers, 2100 Dain Tower, Minneapolis, Minn. 55402)

8–11. American Assoc. of **Dental Schools,** Washington, D.C. (B. F. Miller, III, AADS, 211 E. Chicago Ave., Chicago, Ill. 60611)

8–13. American **Chemical** Soc., 165th natl., Dallas, Tex. (Meetings Manager, ACS, 1155 16th St., NW, Washington, D.C. 20036)

8–14. **Turbulent Diffusion in Environmental Pollution,** 2nd symp., American Geophysical Union, Charlottesville, Va. (A. F. Spilhaus, Jr., American Geophysical Union, 1707 L St., NW, Washington, D.C. 20036)

9–11. **Frontiers in Education,** Education Group of the Inst. of Electrical and Electronics Engineers, West Lafayette, Ind. (Meetings Officer, IEEE, 345 E. 47 St., New York 10017)

9–11. **Interaction of Particle Beams with Surfaces,** 7th thin films conf., Lancaster, England. (Meetings Officer, Inst. of Physics, 47 Belgrave Sq., London SW1X 8QX)

9–11. Amercian **Vacuum** Soc., New Mexico chapter, Albuquerque. (R. L. Gerlach, Sandia Labs., Albuquerque)

9–12. American Assoc. of **Anatomists,** New York, N.Y. (J. E. Pauly, Dept. of Anatomy, Univ. of Arkansas School of Medicine, Little Rock 72201)

9–12. **Cancer Detection and Prevention,** 2nd intern. symp., Intern. Union against Cancer and Intern. Agency for Research on Cancer of the World Health Organization, Bologna, Italy. (2nd Intern. Symp. on CDP, Istituto di Oncologia "F. Addarii," Viale Ercolani 4/2, 40138 Bologna)

9–12. American Acad. of **Pediatrics,** Boston, Mass. (R. G. Frazier, AAP, 1801 Hinman Ave., Evanston, Ill. 60201)

10–12. **Vibration Problems in Industry,** intern. symp., United Kingdom Atomic Energy Authority, Keswick in Cumberland, England. (J. R. Wakefield, UKAEA, Windscale, Seascale, Cumberland, England, CA20 1PF)

10–13. **Acoustical** Soc. of America, Boston, Mass. (B. H. Goodfriend, ASA, 335 E. 45 St., New York 10017)

11–13. American Assoc. for **Cancer Research,** Inc., 64th annual, Atlantic City, N.J. (H. J. Creech, AACR, Inst. for Cancer Research, Fox Chase, Philadelphia, Pa. 19111)

12–14. Society for **Applied Anthro-**

pology, 33rd annual, Tucson, Ariz. (T. E. Downing, Bureau of Ethnic Research, Univ. of Arizona, Tucson 85721)

12–14. American Assoc. of **Physical Anthropologists**, Dallas, Tex. (E. I. Fry, Dept. of Anthropology, Box 339, Southern Methodist Univ., Dallas 75222)

12–14. Association of **Southeastern Biologists**, Bowling Green, Ky. (M. L. Gilbert, Biology Dept., Florida Southern College, Lakeland, 33802)

12–15. International Assoc. for **Dental Research**, North American Div., Washington, D.C. (A. R. Frechette, IADR, 211 E. Chicago Ave., Chicago, Ill. 60611)

13. Utah **Acad. of Sciences, Arts and Letters**, Logan. (H. Buehanan, Dept. of Botany, Weber State College, Ogden 84403)

13–14. **Socio-Economics of Health Care**, American Medical Assoc., Chicago, Ill. (J. Rowland, Div. of Medical Practice, AMA, 535 N. Dearborn St., Chicago 60610)

15–18. Association of **American Geographers**, Atlanta, Ga. (J. W. Nystrom, AAG, 1710 16th St., NW, Washington, D.C. 20009)

15–19. **Industrial Aspects of Biochemistry**, Federation of European Biochemical Socs., Dublin, Ireland. (B. Masterson, FEBS Meeting Secretariat, IMA Conf. Centre, 10, Fitzwilliam Pl., Dublin 2)

15–20. American Soc. of **Biological Chemists**, Atlantic City, N.J. (R. A. Harte, ASBC, 9650 Rockville Pike, Bethesda, Md. 20014)

15–20. Federation of American Socs. for **Experimental Biology**, Atlantic City, N.J. (A. Nixon, FASEB, 9650 Rockville Pike, Bethesda, Md. 20014)

15–20. American **Physiological** Soc., Atlantic City, N.J. (R. G. Daggs, APS, 9650 Rockville Pike, Bethesda, Md. 20014)

16–18. **Liquid State—Van der Waals Centenary**, Kent, England. (Meetings Officer, Inst. of Physics, 47 Belgrave Sq., London SW1X 8QX England)

16–18. **Nonlinear Elasticity**, Madison, Wis. (G. G. Moran, Mathematics Research Center, Univ. of Wisconsin, 610 Walnut St., Madison 53706)

16–20. American Soc. for **Experimental Pathology**, Atlantic City, N.J. (G. B. Mider, ASEP, 9650 Rockville Pike, Bethesda, Md. 20014)

16–20. American **Geophysical** Union, 54th annual, Washington, D.C. (A. F. Spilhaus, Jr., AGU, 1707 L St., NW, Washington, D.C. 20036)

16–20. American Assoc. of **Immunologists**, Atlantic City, N.J. (H. Metzger, AAI, 9650 Rockville Pike, Bethesda, Md. 20014)

16–20. American Inst. of **Nutrition**, Atlantic City, N.J. (AIN, 9650 Rockville Pike, Bethesda, Md. 20014)

16–20. American Soc. for **Pharmacology and Experimental Therapeutics**, Atlantic City, N.J. (E. B. Cook, ASPET, 9650 Rockville Pike, Bethesda, Md. 20014)

18–20. **Great Lakes Research**, 16th conf., Intern. Assoc. for Great Lakes Research, Columbus, Ohio 43210. (C. E. Herdendorf, Center for Lake Erie Area Research, College of Biological Sciences, Ohio State Univ., 484 W. 12 Ave., Columbus 43210)

19–21. Louisiana **Acad. of Sciences**,

Monroe. (B. F. Dowden, Dept. of Biological Sciences, Louisiana State Univ., Shreveport 71105)

19–21. Southern Soc. for **Philosophy and Psychology**, Knoxville, Tenn. (M. Loeb, Dept. of Psychology, Univ. of Louisville, Louisville, Ky.)

20–21. Illinois State **Acad. of Science**, Urbana. (N. R. Brewer, ISAS, 5757 S. Drexel Ave., Chicago)

22–26. American **Radium** Soc., Colorado Springs, Colo. (F. N. Rutledge, 4828 Caroline St., Houston, Tex. 77004)

22–27. Council for **Exceptional Children**, 51st annual intern. conv., Dallas, Tex. (P. W. Stavros, CEC, 1411 S. Jefferson Davis Hgy., Arlington, Va. 22202)

23–25. **Instrument** Soc. of America, 19th analysis instrumentation symp., 14th chemical and petroleum instrumentation symp., Process Measurement and Control Div. symp., St. Louis, Mo. (J. L. Kern, Monsanto Co., 800 N. Lindbergh St., St. Louis 63166)

23–28. American Acad. of **Neurology**, Boston, Mass. (S. A. Nelson, AAN, 4005 W. 65 St., Minneapolis, Minn. 55435)

23–30. American Soc. for **Clinical Investigation**, Atlantic City, N.J. (P. Calabresi, Roger Williams General Hospital, Providence, R.I. 02908)

24–27. International **Magnetics** Conf., Magnetic Soc. of the Inst. of Electrical and Electronics Engineers, Washington, D.C. (D. H. Looney, Bell Labs., Whippany Rd., Whippany, N.J. 07981)

25–26. American **Geriatrics** Soc., Beverly Hills, Calif. (E. Henderson, 10 Columbus Circle, New York 10019)

25–27. The **Ocean, Nuclear Energy, and Man**, American Nuclear Soc. and Marine Technology Soc., Palm Beach Shores (Singer Island), Fla. (M. J. Ohanian, Dept. of Nuclear Engineering, Univ. of Florida, Gainesville 32601)

25–28. International **Communication** Assoc., Montreal, P.Q., Canada. (M. Z. Sincoff, Center for Communication Studies, Ohio Univ., Athens 45201)

25–28. National Council of **Teachers of Mathematics**, Houston, Tex. (J. D. Gates, NCTM, 1201 16th St., NW, Washington, D.C.)

26. **Sigma Pi Sigma**, Washington, D.C. (D. W. J. Shea, State Univ. of New York, Stony Brook 11790)

26–27. **Scanning Electron Microscope** Symp., 6th annual, Chicago, Ill. (O. Johari, IIT Research Inst., 10 W. 35 St., Chicago 60616)

26–28. Louisiana **Acad. of Sciences**, Monroe. (B. F. Dowden, Dept. of Biological Sciences, Louisiana State Univ., Shreveport 71105)

26–28. Ohio **Acad. of Science**, Cleveland. (J. H. Melvin, OAS, 445 King Ave., Columbus 43201)

26–28. American **Philosophical** Assoc., Western Div., Chicago, Ill. (N. E. Bowie, Hamilton College, Clinton, N.Y. 13323)

26–28. **Population** Assoc. of America, New Orleans, La. (J. W. Brackett, PAA, P.O. Box 14182, Benjamin Franklin Sta., Washington, D.C. 20044)

27–28. Georgia **Acad. of Science**, Atlanta. (E. A. Stanley, Dept. of Geology, Univ. of Georgia, Athens 30601)

27–28. Iowa **Acad. of Science**, Grinnell.