

SCIENCE

13 September 1974

Vol. 185, No. 4155

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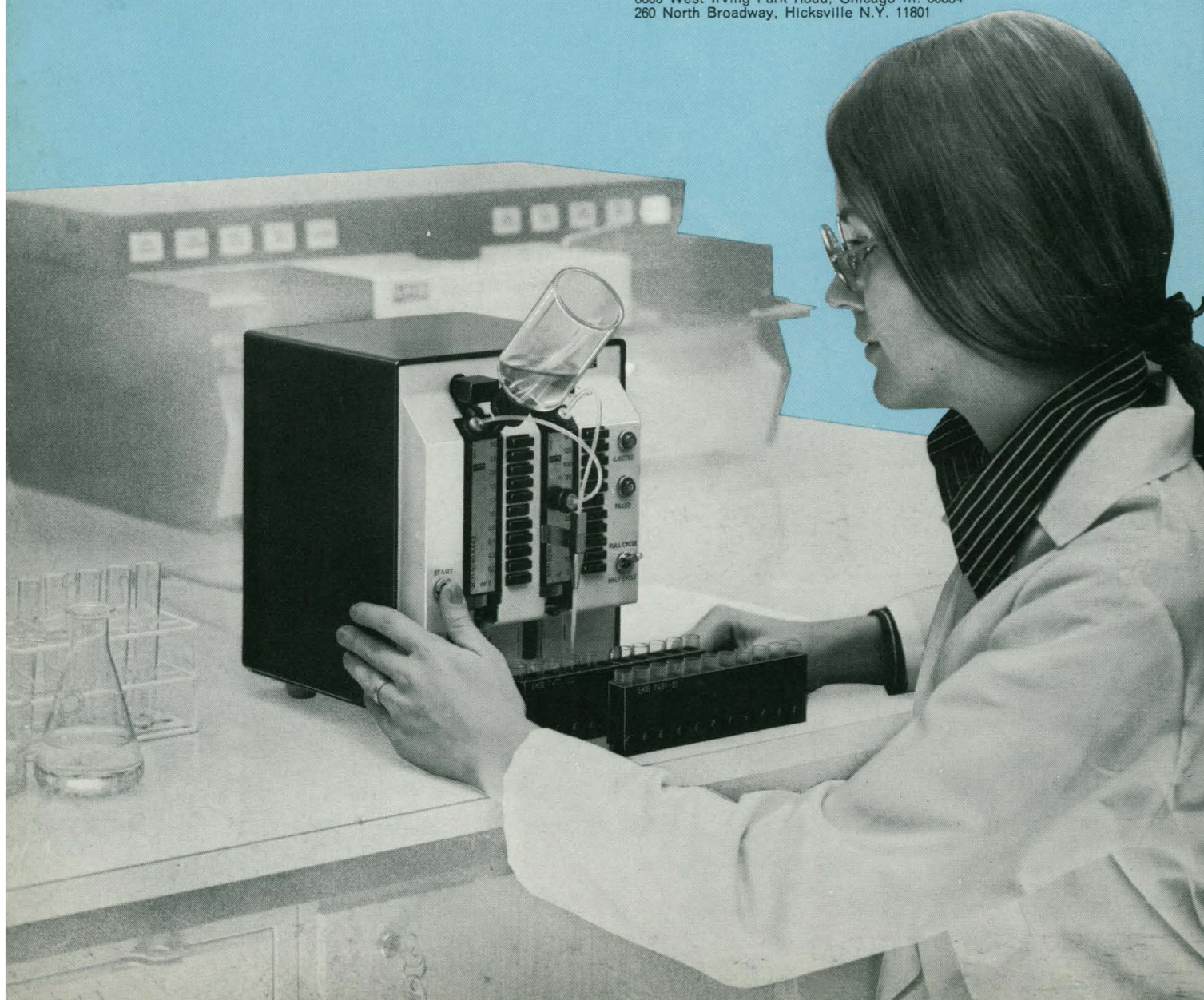
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Strait of Gibraltar where warm, salty Mediterranean water spills across a sill, intrudes into the cooler, fresher Atlantic water, and spreads west at a depth of 1200 meters. Sinking of salt from this warm core to the fresher water below occurs by a convective process called salt fingering. The rain catchment on Gibraltar is a reminder that water is separated from salt by solar energy but in the steady state must mix again as beneath the Mediterranean outflow. See page 941. [U.S. Navy]

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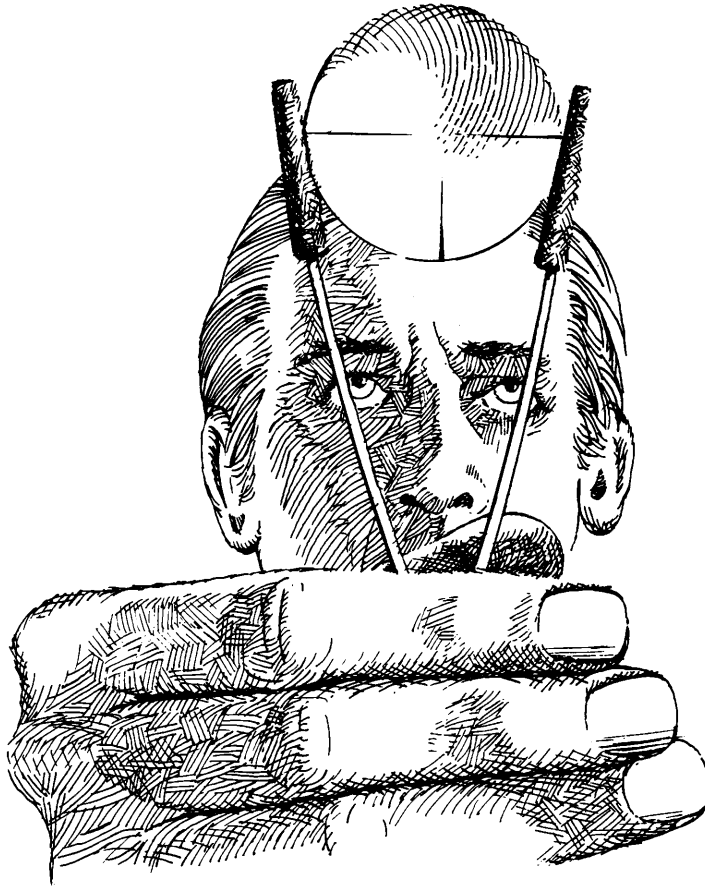
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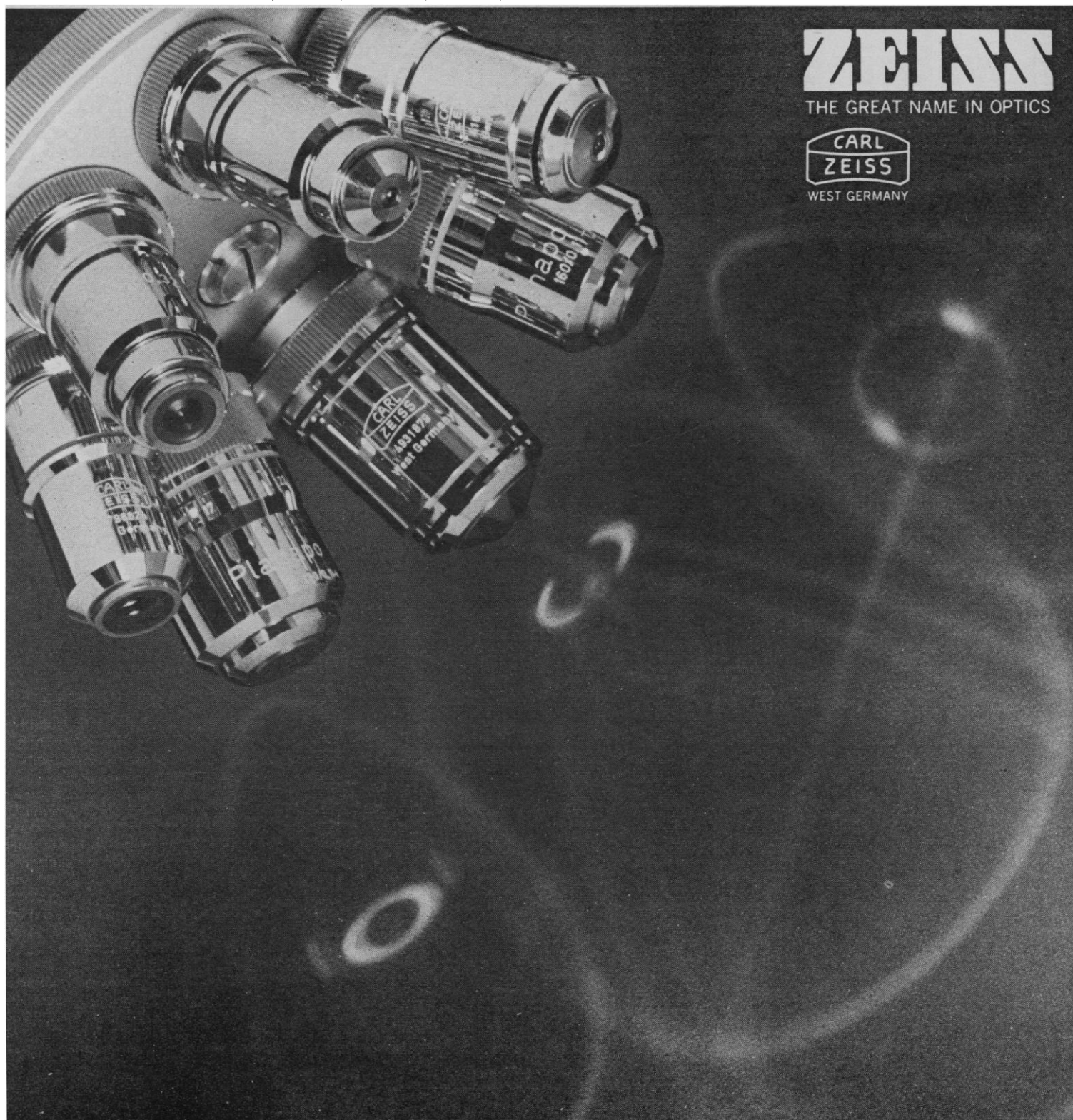
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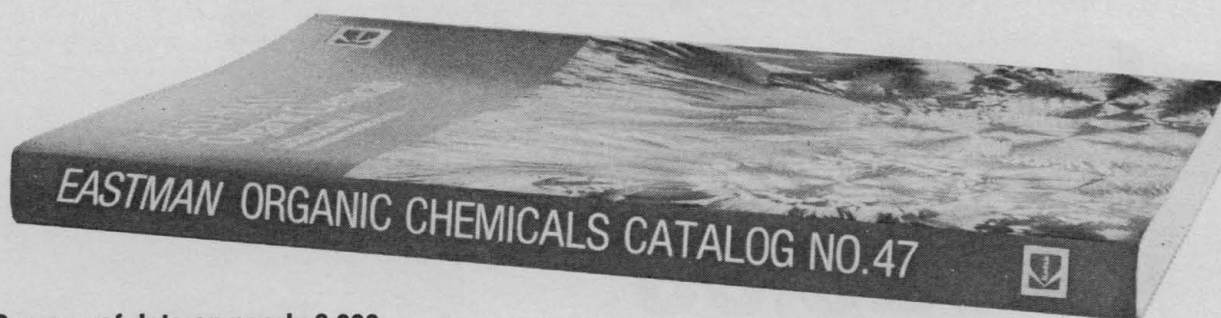
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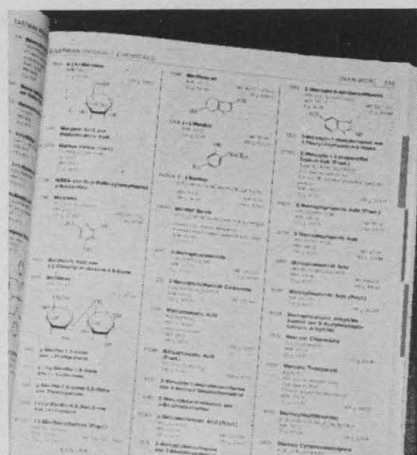
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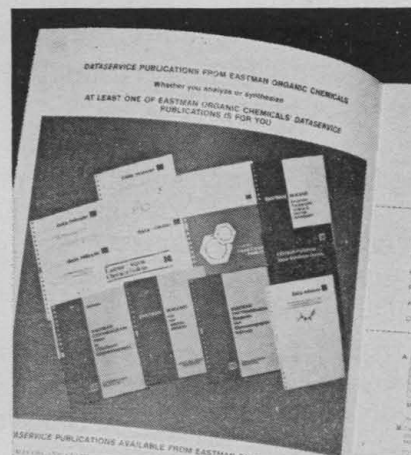
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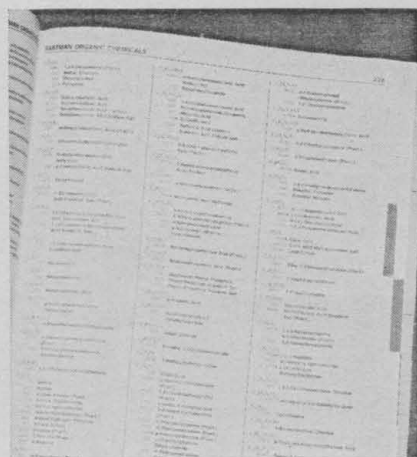
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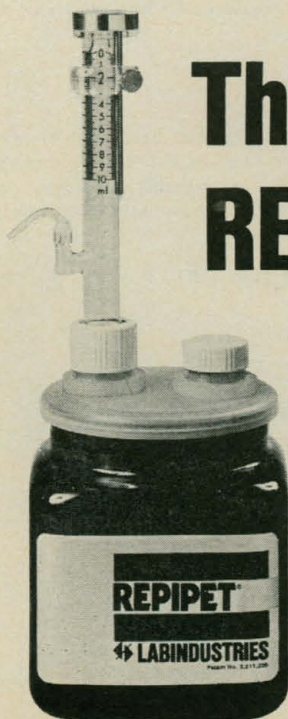
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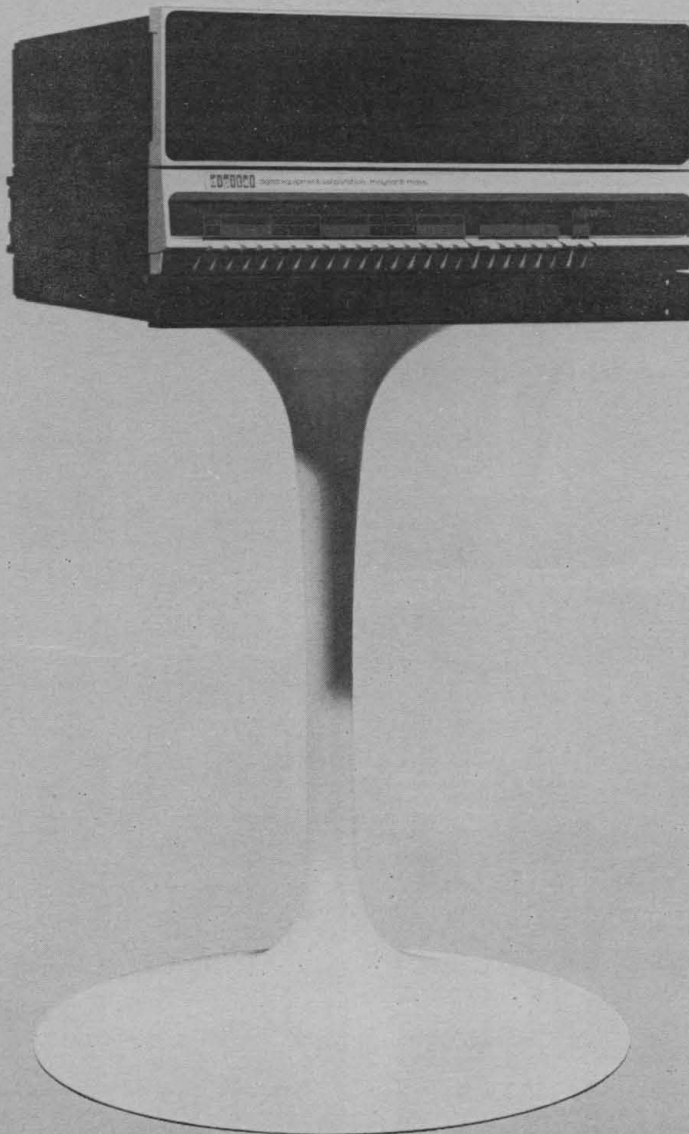
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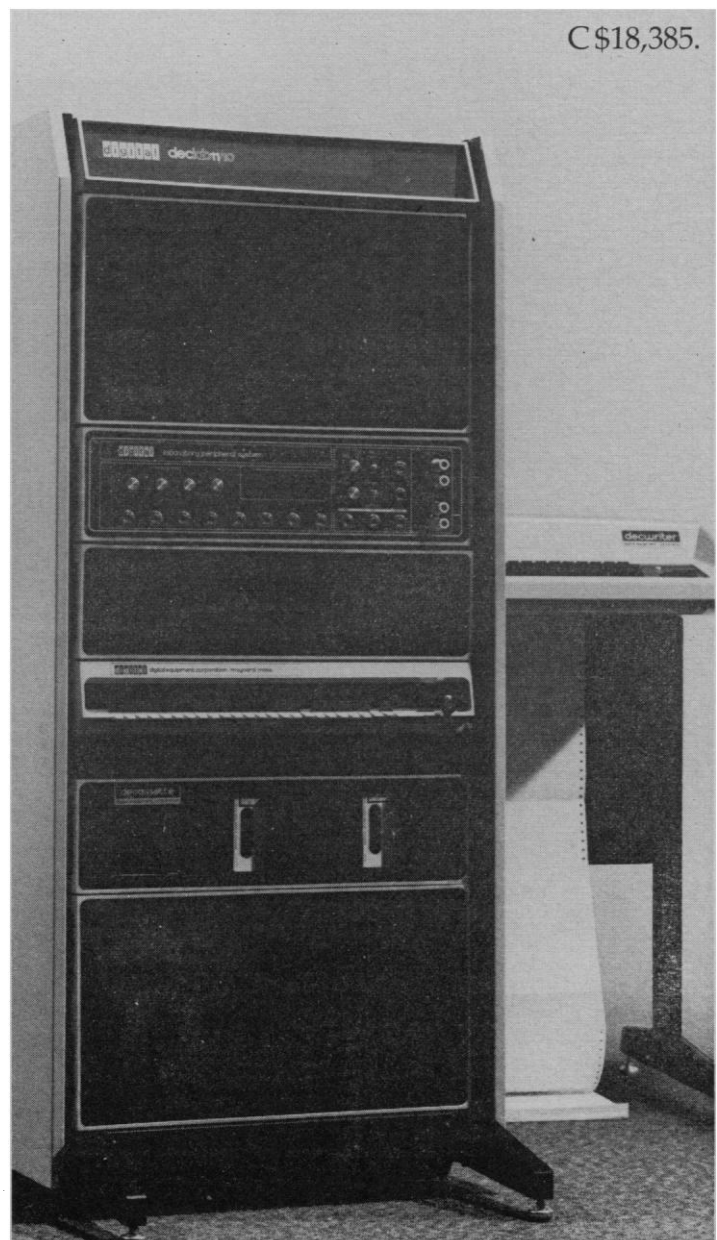
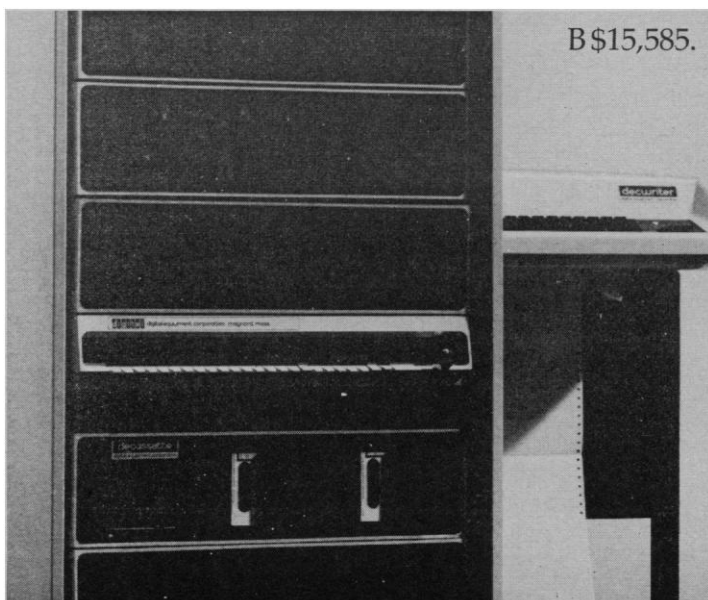
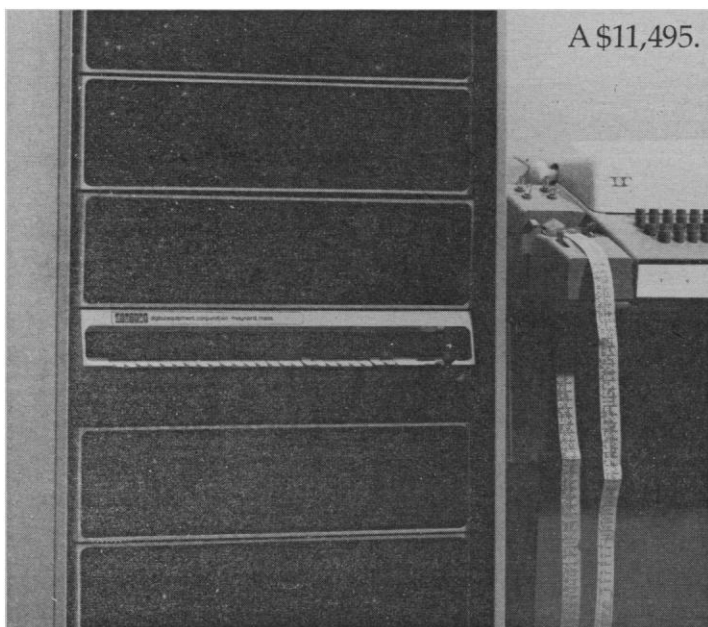
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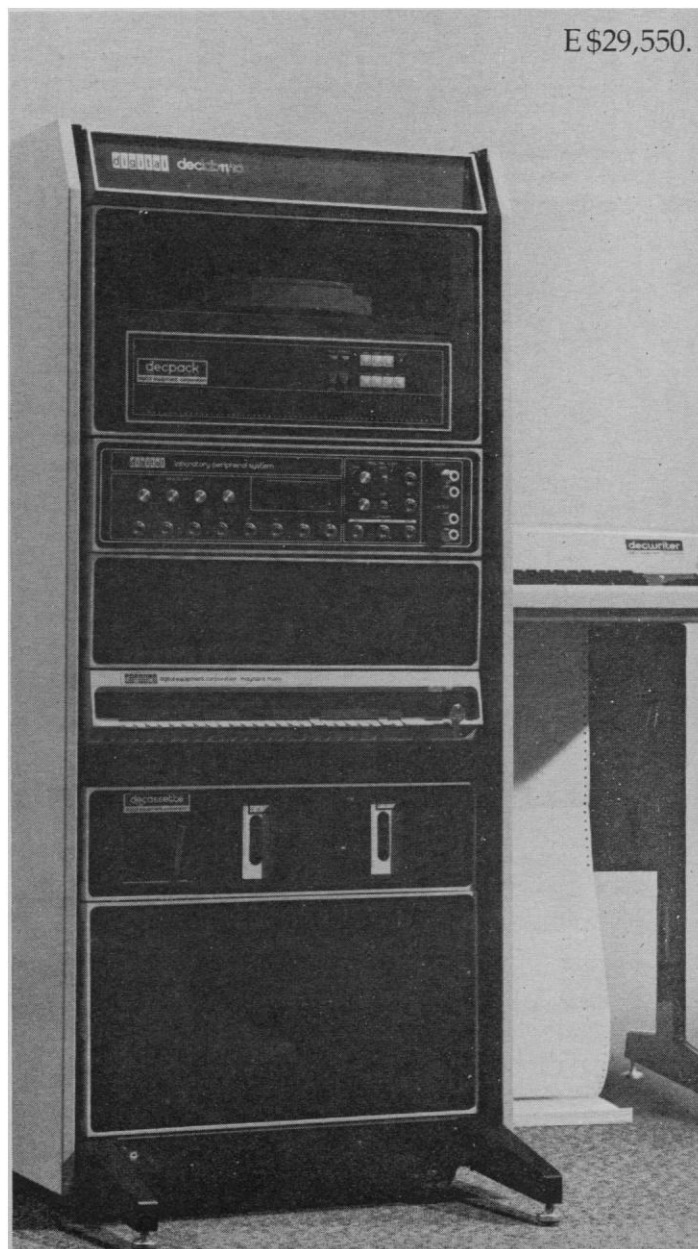
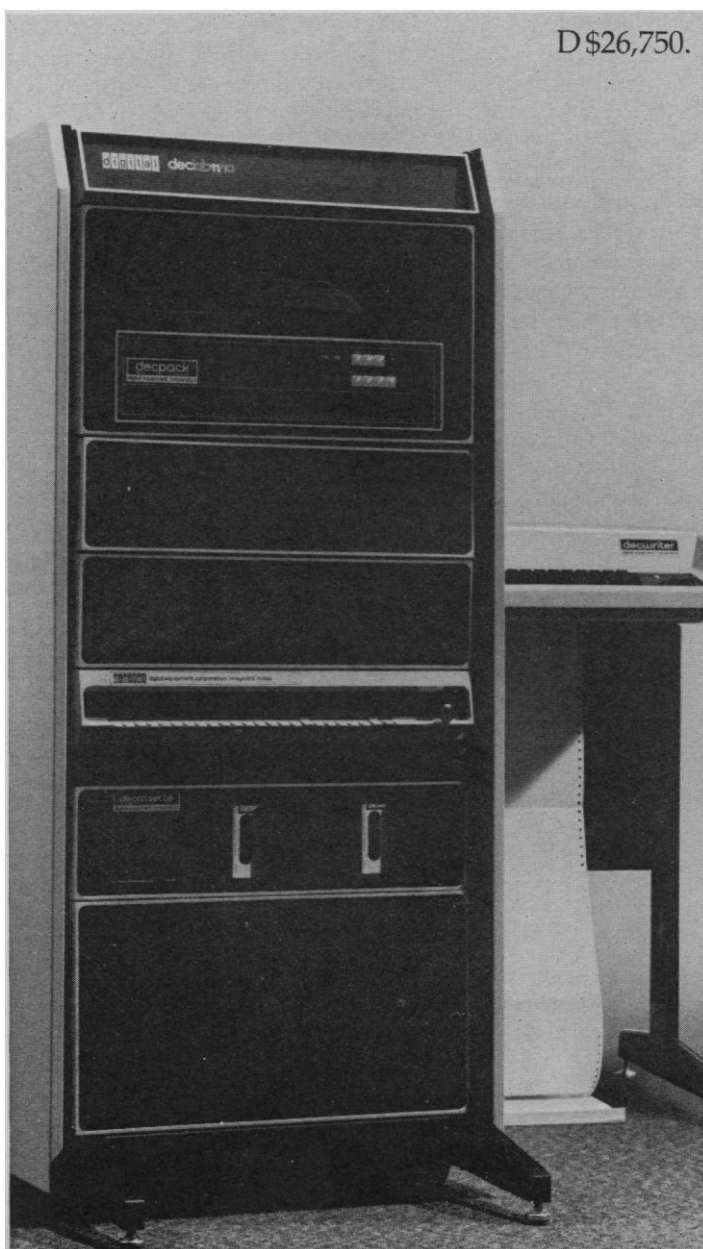
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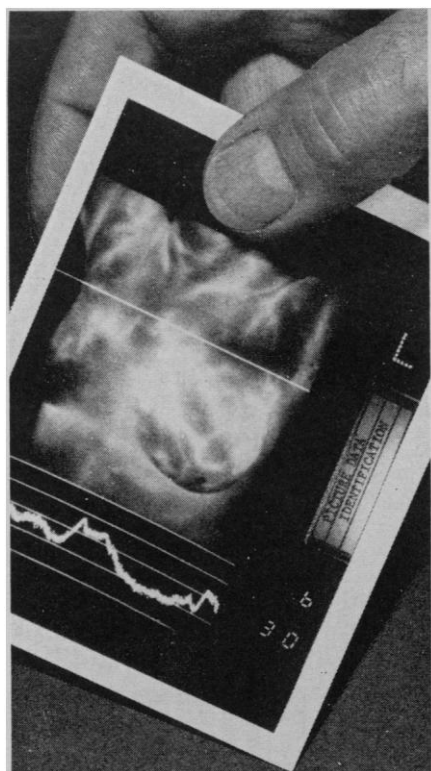
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LETTERS

Fetal Research

On 12 July 1974, President Nixon signed into law Public Law 93-348, the National Research Act of 1974. Title II of this Act authorizes the establishment of a National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research.

One of the first tasks of this commission is to determine the nature, extent, and purposes of research involving living fetuses, and to consider alternative means for reaching those purposes. The commission is given 4 months to complete this study and to make recommendations to the Secretary of the Department of Health, Education, and Welfare (HEW). Until regulations are issued governing fetal research, HEW "may not conduct or support research in the United States or abroad on a living human fetus, before or after the induced abortion of such fetus, unless such research is done for the purpose of assuring the survival of such fetus."

As Assistant Secretary for Health, I have therefore instructed the health agencies of HEW to discontinue any such research, in their own direct activities as well as in grant or contract operations. This moratorium will remain in effect until the Secretary of HEW determines that it should be lifted.

It is also the responsibility of HEW grantees and contractors to discontinue any studies which fall within the limitations outlined above and to advise the awarding unit of HEW as to how they propose to comply with the moratorium.

Questions about research projects which are subject to the moratorium should be addressed to the HEW awarding agency.

CHARLES C. EDWARDS
Department of Health, Education, and Welfare, Washington, D.C. 20201

Fishery Conservation

The article "Law of the Sea: Fisheries plight poses dilemma for United States," by Luther J. Carter (News and Comment, 26 July, p. 336) contains much useful information but, unfortunately, several errors.

For example, Carter states, "This

year . . . an 'over catch' [of yellowfin tuna in the eastern Pacific Ocean] already has occurred because the member nations [of the Inter-American Tropical Tuna Commission] failed to agree on the quota in time to notify the fishing fleet before the tuna season began." The 1974 season began on 1 January, but, because of a price dispute, few vessels began fishing until late January. On 17 March 1974 the member nations agreed on a quota of 175,000 short tons of yellowfin, and on the following day it was announced that the regulation would go into effect on that date. This was immediately relayed by radio to the vessels at sea by their managing owners. As of 27 August 1974, 154,496 tons of yellowfin have been taken, and it is anticipated that by the end of the year the catch will be very near the quota.

Carter stresses that "international cooperation is not merely desirable but essential in the management of highly migratory species," but then says, "Efforts to achieve this have been carried on, generally without much success, by a number of international fishery commissions. The imperiled status of the bluefin tuna in the Atlantic and the potential threat to the still apparently abundant yellowfin tuna fishery in the Pacific illustrates how much remains to be accomplished." The Inter-American Tropical Tuna Commission, whose eight member nations take most of the total catch of tunas in the eastern Pacific Ocean, provides an outstanding example of international cooperation to achieve fishery conservation. The regulations of the commission, which have been in effect each year since 1966, are the result of recommendations of its scientific staff that are based on studies as exhaustive as its budget permits. The population of yellowfin of the eastern Pacific, according to all available evidence, is being maintained at approximately the level which will permit the maximum average sustained yield (1). Thus the greatest "potential threat" to this population would be refusal of one or more important fishing nations to cooperate with the regulatory program.

The reference to increases in the quota for yellowfin in the eastern Pacific requires explanation. The quotas have been increased from less than 100,000 tons during 1966 and 1967 to 175,000 tons in 1974. These increases have not resulted from pressure by the U.S. fishing industry, as Carter implies. Rather, the staff of the commission has

recommended, on the basis of its scientific studies, gradual increases in the quota as the vessels have fished farther offshore and caught fish that were underutilized a few years ago. The staff zealously monitors the fishery to detect signs of overfishing; if such signs occurred, the staff would recommend stricter regulations.

The Inter-American Tropical Tuna Commission cannot be a perfect answer to the conservation of tunas in the eastern Pacific Ocean, as many aspects of the life histories and population dynamics of these fish are yet not well understood. However, international cooperation, based on scientific studies, is clearly the most rational way to prevent disastrous overfishing of these important food fish.

JAMES JOSEPH

Inter-American Tropical Tuna Commission, c/o Scripps Institution of Oceanography, La Jolla, California 92037

Reference

1. *Annual Report, 1973* (Inter-American Tropical Tuna Commission, La Jolla, Calif., 1973).

Keith Brouillard, head of the division of International Fisheries Analysis, National Marine Fisheries Service, was my authority for reporting that there already has been an "over catch" of yellowfin tuna this year. But Brouillard now concedes that it may well be true, as Joseph contends, that the total catch for the year will be within the established quota or will not exceed it significantly.—L.J.C.

Optical Brighteners and Social Responsibility

In response to Deborah Shapley's article (News and Comment, 12 October 1973, p. 145) about me and my activities in Sweden as an environmentalist and scientist, my colleagues Kilbey and Zetterberg (Letters, 1 March, p. 798) comment on optical brighteners, which are added to detergents, body soaps, paper, and so forth. It is suspected that these compounds cause genetic defects and it is well documented that brighteners have been the cause of allergies (1, 2). However, Kilbey and Zetterberg claim that they have not been able to repeat my experiments (2) indicating mutagenic effects of certain brighteners in yeast.

Kilbey and Zetterberg also say, "At

a meeting in Stockholm at which one of us reviewed the genetic activities of optical brighteners, Gillberg himself admitted that he is now unable to obtain positive results with these compounds." However, I also mentioned at that meeting that, after publishing my paper about brighteners in 1971, I discovered that only the original samples of brighteners that I had obtained from detergent producers induced mutations in yeast, while samples of the same brighteners obtained later did not induce mutations. This appears to indicate that the brightener producers either modified the brightener in question or that some kind of impurity now and then occurs in the brighteners that might induce mutations in yeast.

I also reported at the Stockholm meeting that I had discovered that the samples of brighteners that induced mutations in 1970 in several trials did not do so when tested 2 years later. I said that this might indicate that the factor in the brighteners that induced mutations in my early experiments was maybe not very stable and might have been inactivated because of the long storage period (at least 3 years from the time of production).

Kilbey and Zetterberg state, "If we startle the public too many times with sensational claims that are later retracted, we run a real risk of losing our most valuable ally if and when a real crisis comes." I agree completely with Kilbey and Zetterberg. However, I have not made any sensational claims about brighteners; the only thing I say in my paper (2) is that I consider it of importance to carry on with genetic studies of brighteners against the background of my results. Research has now begun in other laboratories that should have been undertaken before the brighteners were released on the market. The benefits of a product must of course always be weighed against the risks it may create. In such a situation I prefer not to give the product the benefit of the doubt if there are some questions raised. Questions have been raised about these compounds, and I believe that it is my social responsibility to tell my fellow citizens about them.

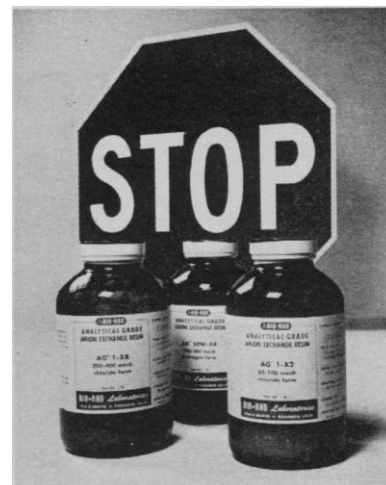
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References

1. P. E. Osmundsen, *Br. J. Dermatol.* **81**, 799 (1969); A. J. Pinol *et al.*, *Med. Cutanea* **5**, 249 (1971).
2. B. O. Gillberg and J. Aman, *Mutat. Res.* **13**, 149 (1971).

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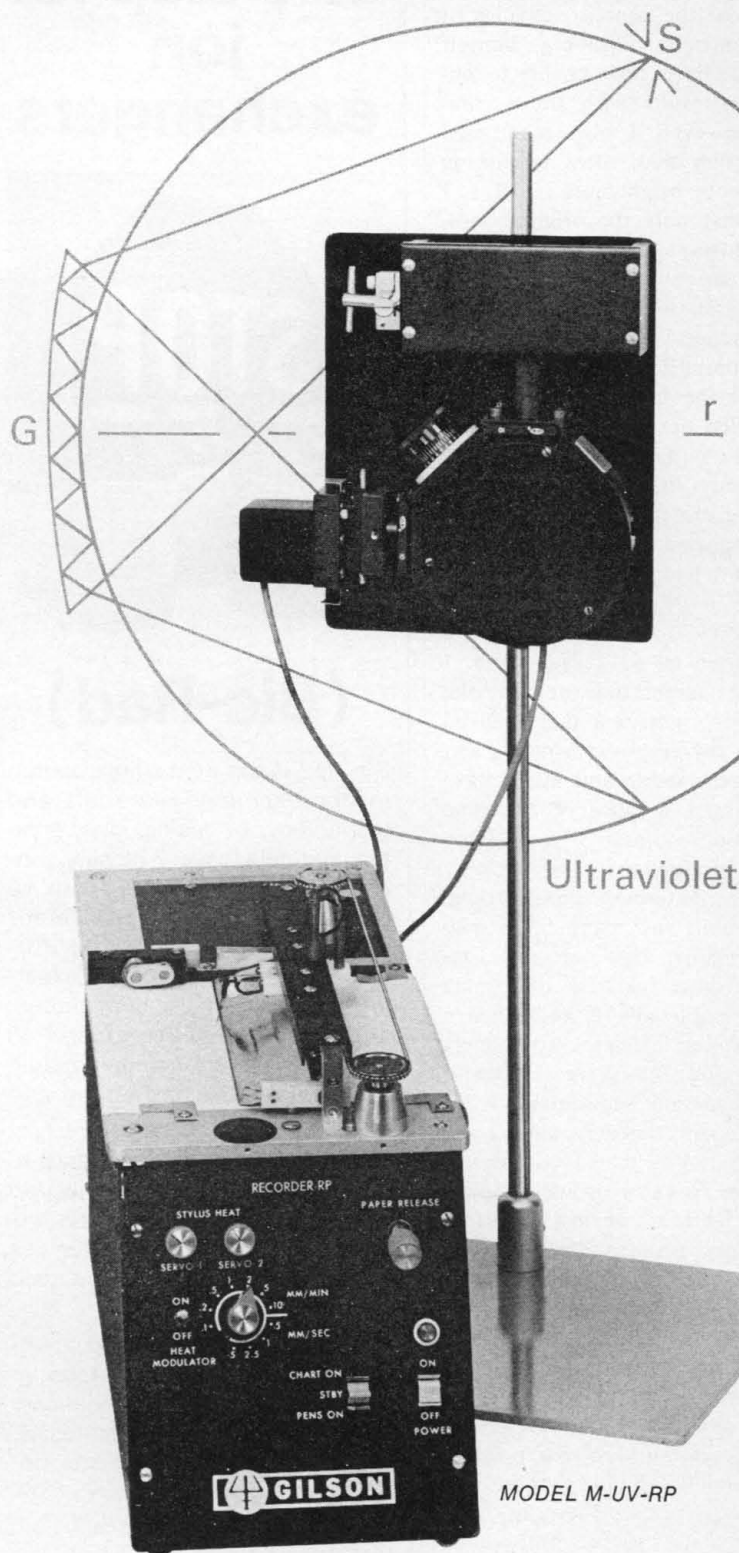
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The Problem of Urban Dogs

A dog is a protector, a playmate, and, for many, a shield against isolation. Dogs exercise a therapeutic effect not only on many emotionally disturbed people, but also on ordinary neurotics like you and me. But some facts about our urban dog population are cause for concern.

There are about 40 million owned dogs; 46 percent of all American households have at least one dog. Our most serious urban dog problems are *unwanted* pets that owners acquire and then find no longer satisfactory and *uncontrolled* pets that owners allow to roam free. Thus, since canine overpopulation per se is not the real issue, low-cost spay programs are irrelevant to solving our urban dog problems—except for the indigent or impoverished pet owner. The most terrible aspect of our pet population is the free-roaming dog. The costs of capturing and killing these dogs, plus the costs of leash law enforcement, animal shelter services, and other related public and private activities, come to about \$450 million annually. And the mere dollars-and-cents costs are only secondary.

Free-roaming dogs are a serious problem in almost every American community. Some of these dogs are owned, and some are feral (domestic animal gone wild). Their numbers depend partly on the size of the owned dog population, but primarily on dog owners' attitudes toward confinement and breeding of their pets. Free-roaming dogs constitute an ecological and public health menace by (i) spreading disease, (ii) biting, (iii) causing road accidents, (iv) creating nuisances and pollution, (v) causing property damage, and (vi) destroying livestock and wildlife.

More than 40 diseases in the United States can be transmitted from dogs to man. Among the better known are rabies, roundworms, hookworms, tapeworms, ringworm, and fleas. Besides this public health threat, free-roaming dogs also transmit disease to other dogs.

Bites are the major cause of pet-related human casualties. More than 1 million dog bites are reported annually—about one bite per 170 people—and at least as many bites go unreported. About 60 percent of dog bites are in children younger than 16 (41 percent in children younger than 11). And there are increasing reports of a new menace—the free-roaming dog pack. In addition, a growing preference for larger dogs means more severe bites.

Pet fecal littering on public and private property is unesthetic and a nuisance as well as a public health hazard. For example, the 500,000 owned dogs in New York City deposit about 150,000 pounds of feces and 90,000 gallons of urine each day on the streets. The raiding of garbage cans impedes efficient refuse collection and encourages rats. Are canine excrement and excessive barking any less polluting than chemicals or jet plane noise?

There are several dozen ways to cope with the problem of free-roaming dogs. Which measures are to be applied—and by whom and at whose expense—are questions best answered by each community according to its circumstances. But only through a multifaceted attack will relief be found. Such an endeavor must include at least three things: public education, leash law enforcement, and canine birth control. And these efforts must focus on one ultimate goal: reducing the number of "casual" owners—those unwilling or unable to provide appropriate care and restraint or confinement of their dogs.

The traditional American view of the pet dog as a benign companion is undergoing a change. Dogs are posing a threat to neighbors and to general community welfare. Dog owners had better "get it together." They must cease being irresponsible, inconsiderate, and inhumane toward their pets and fellow citizens.—BRUCE MAX FELDMANN, *Director, Pet Clinic, University of California, Berkeley 94720*

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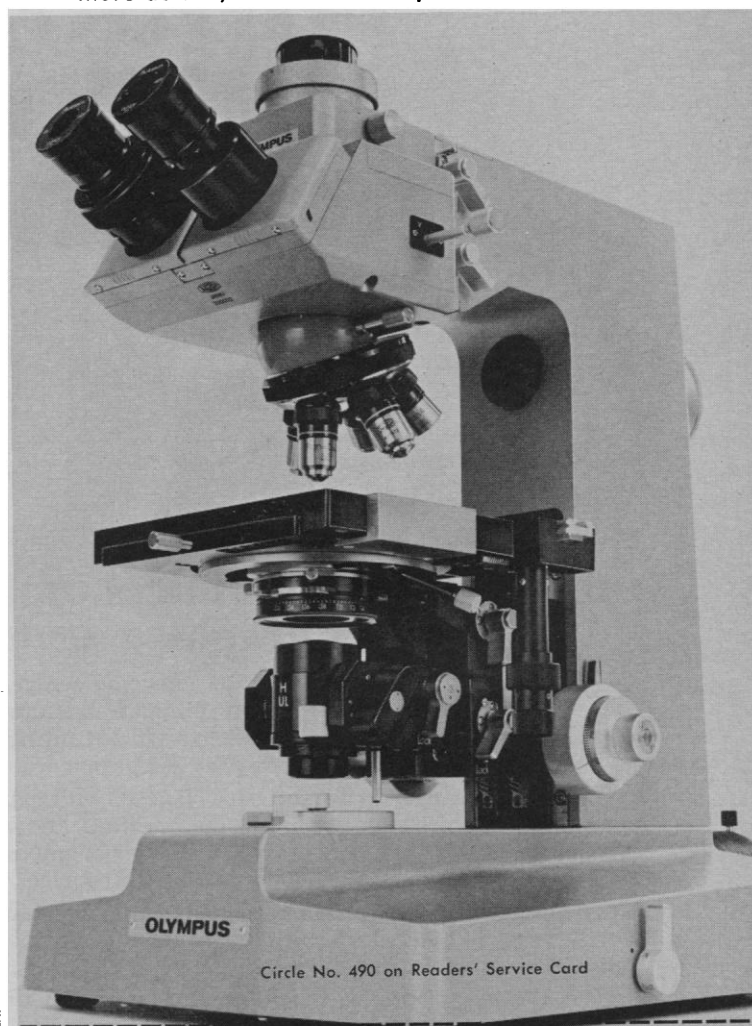
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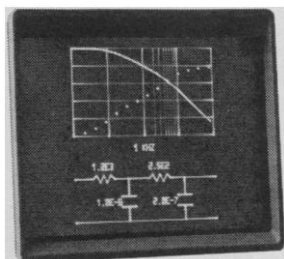
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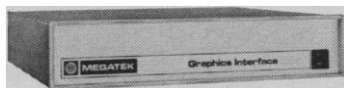
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Forthcoming Events

October

13-17. **Corrosion Problems in Energy Conversion and Generation Symp.**, Electrochemical Soc., New York, N.Y. (C. S. Tedmon, Jr., Room 3A48, Bldg. K-1, Research and Development Center, General Electric Co., P.O. Box 8, Schenectady, N.Y. 12301)

13-17. **Electrochemical Soc.**, 146th annual, New York, N.Y. (V. H. Branneky, P.O. Box 2071, Princeton, N.J. 08540)

13-17. **American Soc. for Information Science**, Atlanta, Ga. (J. I. Smith, ASIS, 1155 16th St., NW, Washington, D.C. 20036)

13-18. **Pacific Dermatologic Assoc.**, Las Vegas, Nev. (F. Beardsley, 180 Mark Twain Ave., Reno, Nev. 89502)

14-17. **American Chemical Soc.**, 106th Rubber Div. mtg., Philadelphia, Pa. (H. W. Day, DuPont Co., 140 Federal St., Boston, Mass. 02110)

14-17. **American Acad. of Family Physicians**, Los Angeles, Calif. (R. Tusken, 1740 W. 92 St., Kansas City, Mo. 64114)

14-17. **Association of American Medical Colleges**, 85th annual, Chicago, Ill. (AAMC, Suite 200, 1 Dupont Circle, NW, Washington, D.C. 10036)

14-17. **Association of Official Analytical Chemists**, 88th annual, Washington, D.C. (L. G. Ensminger, AOAC, Box 540, Benjamin Franklin Sta., Washington, D.C. 20044)

14-18. **American Ornithologists' Union**, Norman, Okla. (G. E. Watson, Div. of Birds, Museum of Natural History, Smithsonian Inst., Washington, D.C. 20560)

14-18. **Conference on the Precipitation Scavenging of Atmospheric Aerosols and Gases**, U.S. Atomic Energy Commission, Champaign, Ill. (R. C. Semonin, Atmospheric Sciences Section, Illinois State Water Survey, Box 232, Urbana 61801)

14-19. **Association of Engineering Geologists**, Denver, Colo. (W. P. Rogers, AEG, Box 15124, Denver 80215)

14-19. **Psychology Soc.**, Paris, France. (P. C. Haber, 100 Beekman St., New York 10038)

15. **Oak Ridge Associated Universities**, Oak Ridge, Tenn. (W. G. Pollard, ORAU, P.O. Box 117, Oak Ridge 37830)

15-17. **Conference on the Atmosphere of Venus**, Goddard Inst. for Space Studies, New York, N.Y. (J. E. Hansen, 2880 Broadway, New York 10025)

15-17. **Biological Safety Conf.**, 17th, Research Triangle Park, N.C. (L. A. Taylor, Becton, Dickinson and Co. Research Center, P.O. Box 12016, Research Triangle Park 27709)

15-17. **Human Factors Soc.**, Huntsville, Ala. (M. G. Knowles, HFS, P.O. Box 1369, Santa Monica, Calif. 90406)

15-18. **American Chemical Soc.**, 10th western regional mtg., San Francisco, Calif. (P. C. Condit, Patent Dept., Chevron Research Co., 576 Standard Ave., Richmond, Calif. 94802)

15-18. **Society for Experimental Stress Analysis**, New Haven, Conn. (B. E. Rossi, SESA, 21 Bridge Sq., Westport, Conn. 06880)

15-18. **Optical Soc. of America**, Hous-

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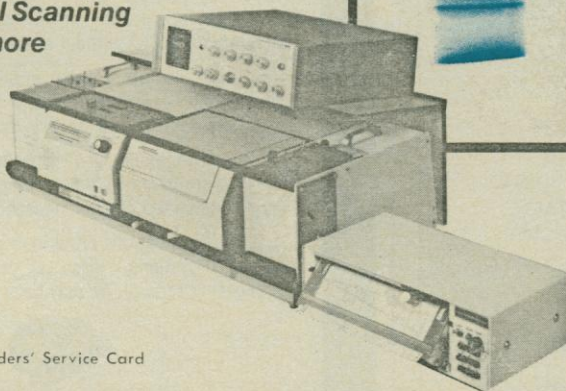
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15-19. American Assoc. of **Stratigraphic Palynologists**, 7th annual mtg., Calgary, Alberta, Canada. (L. V. Hills, Dept. of Geology, Univ. of Calgary, Calgary, T2N 0Z7)

16-18. **Biological Resources of the Chihuahuan Desert Region**, United States and Mexico, intern. symp., Texas Parks and Wildlife Dept., Alpine. (D. H. Riskind, Resource Management Section, Texas Parks and Wildlife Dept., John H. Reagan Bldg., Austin 78701)

16-18. **American Cancer Soc.**, New York, N.Y. (L. W. Adams, 219 E. 42 St., New York 10017)

16-18. **National Council of International Health**, Reston, Va. (J. S. Cowen, P.O. Box 4909, Chicago, Ill. 60680)

16-18. **Operations Research Soc. of America**, jointly with the Inst. of **Management Sciences**, San Juan, Puerto Rico. (A. Riesco, P.O. Box 2342, Mayaguez, P.R. 00708)

16-19. **American Soc. of Human Genetics**, Portland, Ore. (W. E. Nance, Dept. of Medical Genetics, Indiana Univ. Medical Center, Indianapolis 46202)

16-20. **Irish Otolaryngological Soc.**, Cork. (G. D. L. Smyth, Eye and Ear Clinic, Falls Rd., Belfast 4, U.K.)

17-19. **Central Neuropsychiatric Assoc.**, Ann Arbor, Mich. (D. W. Sprague, 1417 Marlowe Ave., Lakewood, Ohio 44107)

17-19. **American Assoc. for the Surgery of Trauma**, Hot Springs, Va. (J. A. Boswick, Jr., Univ. of Colorado Medical Center, 4200 E. Ninth Ave., Denver, Colo. 80220)

17-19. **National Council of Teachers of Mathematics**, Southeastern section, Memphis, Tenn. (NCTM, 1906 Association Dr., Reston, Va. 22091)

18-20. **National Council of Teachers of Mathematics**, North central section, Minneapolis, Minn. (NCTM, 1906 Association Dr., Reston, Va. 22091)

19. **New Mexico Acad. of Science**, Las Vegas. (L. M. Shields, Environmental Health Div., New Mexico Highlands Univ., Las Vegas 87701)

19-22. **American Coke and Coal Chemicals Inst.**, White Sulphur Springs, W.Va. (L. C. Ferguson, ACCCI, 1010 16th St., NW, Washington, D.C. 20036)

19-24. **American Acad. of Pediatrics**, San Francisco, Calif. (R. G. Frazier, 1801 Hinman Ave., Evanston, Ill. 60204)

20-23. **Society for Neuroscience**, 4th annual mtg., St. Louis, Mo. (SN, Room 200A, Lee Bldg., 9650 Rockville Pike, Bethesda, Md. 20014)

20-24. **American Assoc. of Cereal Chemists**, Montreal, P.Q., Canada. (R. J. Tarleton, AACC, 3340 Pilot Knob Rd., St. Paul, Minn. 55121)

20-24. **American Public Health Assoc.**, 102nd annual mtg., New Orleans, La. (J. R. Kimmey, APHA, 1015 18th St., NW, Washington, D.C. 20036)

20-26. **International Cancer Congr.**, 11th, Intern. Union against Cancer, Florence, Italy. (P. A. Gardner, IUAC, Div. of Medical Sciences, Natl. Research Council, 2101 Constitution Ave., NW, Washington, D.C. 20418)

21-23. **Conference on Electrical Insula-**

SCIENCE, VOL. 185

tion and Dielectric Phenomena, Natl. Acad. of Sciences, Downingtown, Pa. (N. T. Grisamore, NAS, 2101 Constitution Ave., NW, Washington, D.C. 20418)

21-23. International Assoc. for the Study of the Liver, Acapulco, Mexico. (N. Nygstrup, Dept. of Medicine, Rigshospitalet, Copenhagen, Denmark)

21-23. Use of Small Accelerators for Teaching and Research, 3rd conf., Atomic Energy Commission, Denton, Tex. (J. L. Duggan, Dept. of Physics, North Texas State Univ., Denton 76203)

21-24. American Soc. for Metals, Detroit, Mich. (A. R. Putnam, ASM, Metals Park, Ohio 44073)

21-24. Symposium on Population Exposures, Health Physics Soc., Knoxville, Tenn. (J. E. Turner, Oak Ridge Natl. Lab., P.O. Box X, Oak Ridge, Tenn. 37830)

21-25. American Soc. of Civil Engineers, Kansas City, Mo. (E. Zwoyer, ASCE, 345 E. 47 St., New York 10017)

21-25. American Dietetic Assoc., Philadelphia, Pa. (R. M. Crum, ADA, 620 N. Michigan Ave., Chicago, Ill. 60611)

21-25. American Assoc. for Laboratory Animal Science, 25th, Cincinnati, Ohio. (J. J. Garvey, AALAS, Suite 208, 2317 W. Jefferson St., Joliet, Ill. 60435)

21-25. American College of Surgeons, 60th annual clinical congr., Miami Beach, Fla. (E. W. Gerrish, ACS, 55 E. Erie St., Chicago, Ill. 60611)

21-25. Thermodynamics of Nuclear Materials, Intern. Atomic Energy Agency, Vienna, Austria. (G. Seiler, IAEA, Karntner Ring 11, P.O. Box 950, A-1011 Vienna)

22-24. National Coal Assoc., Louisville, Ky. (NCA, 1130 17th St., NW, Washington, D.C. 20036)

22-24. Linear Electric Machines Conf., Power Div., Institution of Electrical Engineers, London, England. (IEE Conf. Dept., Savoy Pl., London, WC2R 0BL)

23-25. American Chemical Soc., 26th southeastern regional mtg., Norfolk, Va. (M. A. Kise, R & D Virginia Chemicals, Portsmouth, Va. 27303)

23-25. Society for Industrial and Applied Mathematics, Washington, D.C. (SIAM, 33 S. 17 St., Philadelphia, Pa. 19103)

23-26. American Ceramic Soc., 27th Pacific Coast regional mtg., Los Angeles, Calif. (F. P. Reid, ACS, 65 Ceramic Dr., Columbus, Ohio 43214)

23-26. Chemical Evolution of the Giant Planets, College Park, Md. (C. Ponnamperuma, Lab. of Chemical Evolution, Dept. of Chemistry, Univ. of Maryland, College Park 20742)

23-26. National Council for Geographic Education, 60th annual, Chicago, Ill. (W. W. Elam, NCGE, 115 N. Marion St., Oak Park, Ill. 60301)

24-27. American Acad. of Child Psychiatry, San Francisco, Calif. (AAP, 1800 R St., NW, Washington, D.C. 20009)

24-27. Society for Psychophysiological Research, Salt Lake City, Utah. (E. Donchin, Dept. of Psychology, Univ. of Illinois, Champaign 61820)

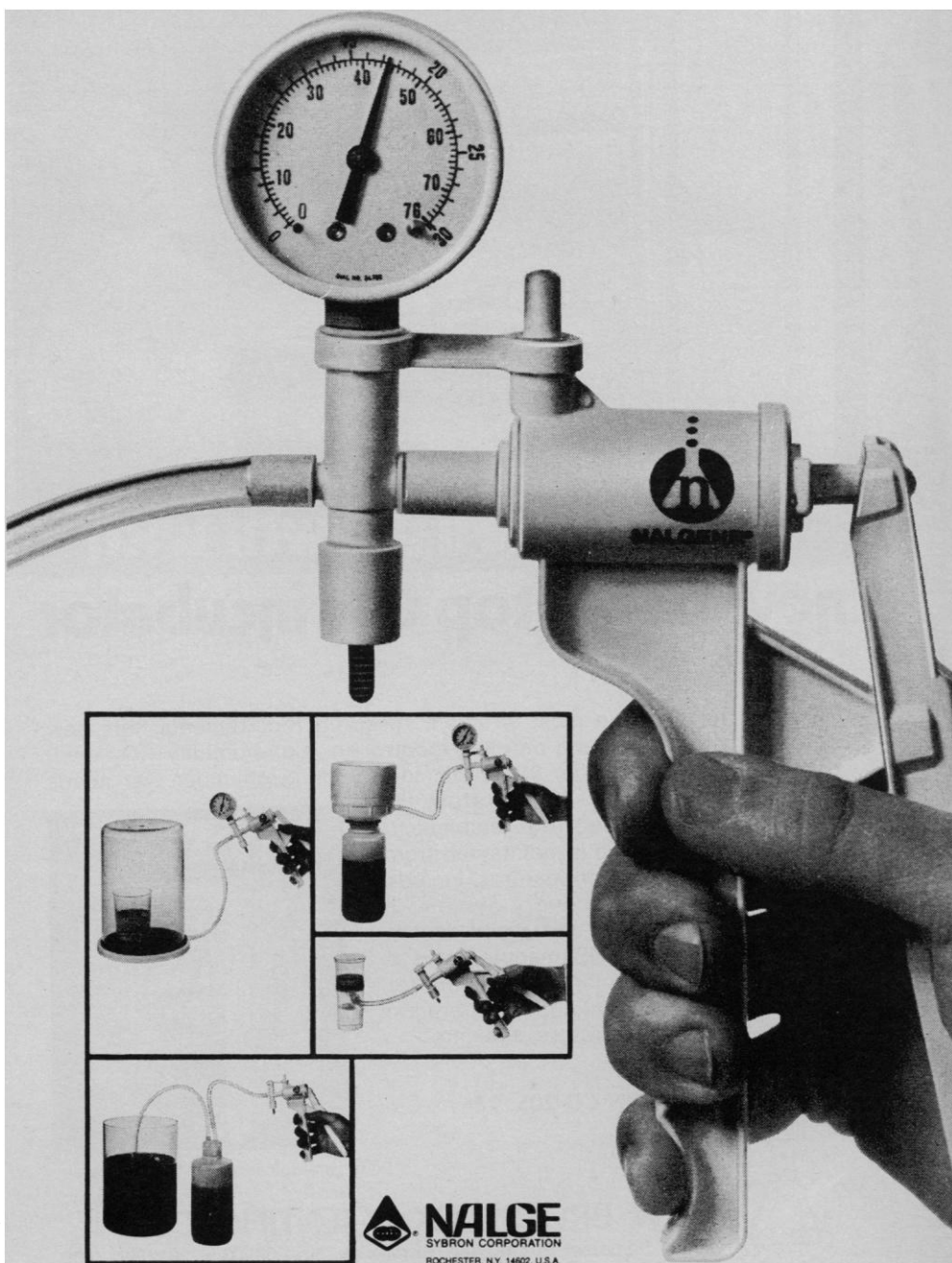
24-27. Society for the Scientific Study of Religion, Washington, D.C. (W. V. D'Antonion, SSSR, Box U68A, Univ. of Connecticut, Storrs 06268)

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25. American Pharmaceutical Assoc., 14th annual, Industrial Pharmacy Section, Cherry Hill, N.J. (A. J. Scarpone, Lederle Labs., Pearl River, N.Y. 10965)

25-26. Society of Nuclear Medicine, northern and southern California chapters, San Francisco, Calif. (C. Plumhof, 711D St., San Rafael, Calif. 94901)

25-26. Transplantation of Pancreatic Islets and the Histocompatibility of Endocrine Tissues, American Diabetes Assoc., Minneapolis, Minn. (E. M. Frost, ADA, 1 W. 48 St., New York 10020)

25-27. History of Science Soc., Norwalk, Conn. (R. H. Stuewer, School of Physics and Astronomy, Univ. of Minnesota, Minneapolis 55455)

26-1. American Concrete Inst., Atlanta, Ga. (ACI, P.O. Box 19150, Detroit, Mich. 48219)

27. Utah Acad. of Sciences, Arts and Letters, Salt Lake City. (H. Buchanan, Dept. of Botany, Weber State College, Ogden, Utah 84403)

27-29. Symposium on Unusual and Under-utilized Drug Information Resources, 10th, Drug Information Assoc., Williamsburg, Va. (F. Salter, VADICS Center, Virginia Commonwealth Univ., Medical College of Virginia, Richmond 23298)

27-31. International Symp. on Information Theory, Inst. of Electrical and Electronics Engineers, Notre Dame, Ind. (J. L.

Massey, Dept. of Electrical Engineering, Univ. of Notre Dame, Notre Dame 46556)

27-1. American Soc. of Maxillofacial Surgeons, Houston, Tex. (R. Rankow, 108 E. 78 St., New York 10017)

27-1. American Nuclear Soc., Washington, D.C. (J. T. Ramey, Joint Committee on Atomic Energy, H-403, Washington, D.C. 20510)

27-1. American Soc. of Plastic and Reconstructive Surgeons, Houston, Tex. (D. F. Waley, Suite 812, 29 E. Madison St., Chicago, Ill. 60602)

27-2. International Congr. of Psychosomatic Obstetrics and Gynecology, 4th, Tel Aviv, Israel. (Organizing Committee, ICPOG, Asaf Harofe Hospital, Zrifin, Israel)

28-29. International Patterns of Engineering Management—A Constructive Analysis, American Soc. of Mechanical Engineers, Mexico City, D.F., Mexico. (M. J. Williams, General Engineering Div., ASME, 345 E. 47 St., New York 10017)

28-30. Association of Life Insurance Medical Directors of America, Philadelphia, Pa. (H. S. Kost, John Hancock Mutual Life Insurance Co., 200 Berkeley St., Boston, Mass. 02117)

28-31. Instrument Soc. of America, New York, N.Y. (H. S. Kindler, ISA, 400 Stanwix St., Pittsburgh, Pa. 15222)

28-31. Produce Marketing Assoc., Dallas, Tex. (R. L. Carey, PMA, P.O. Box 674, Newark, N.J. 19711)

28-1. International Colloquium on Comets, 25th, Intern. Astronomical Union, Greenbelt, Md. (B. Donn, IAU Colloquium No. 25, Goddard Space Flight Center, Greenbelt 20771)

28-1. Gerontological Soc., Portland, Ore. (E. Kaskowitz, GS, Suite 520, 1 Dupont Circle, Washington, D.C. 20036)

31-2. Indiana Acad. of Science, Greencastle. (J. J. Nisbet, Dept. of Biology, Ball State Univ., Muncie, Ind. 47306)

31-2. Communication and Control in Social Processes, American Soc. for Cybernetics, Philadelphia, Pa. (ASC, Suite 530, 1130 17th St., NW, Washington, D.C. 20036)

31-4. American Soc. of Bariatric Physicians, Las Vegas, Nev. (W. L. Asher, Suite 307, 333 W. Hampden Ave., Englewood, Colo. 80110)

November

1-2. Virginia Assoc. of Biological Education, Petersburg. (T. H. Turney, Hampden-Sydney College, Hampden-Sydney, Va. 23943)

1-2. American College of Physicians, Arizona regional, Phoenix. (A. B. Taylor, 520 W. Lawrence Rd., Phoenix 85013)

1-3. Medical Soc. of the District of Columbia, White Sulphur Springs, W.Va. (F. P. Feraraccio, MSDC, 2007 Eye St., NW, Washington, D.C. 20006)

1-3. Philosophy of Science Assoc., Notre Dame, Ind. (P. D. Asquith, Philosophy Dept., Michigan State Univ., East Lansing 48824)

1-4. Sigma Xi, the Scientific Research Soc. of North America, Fredericksburg, Va. (T. T. Holme, Sigma Xi, 345 Whitney Ave., New Haven, Conn. 06511)

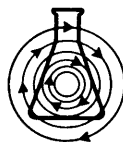
3-6. Medical Soc. of Virginia, Williams-



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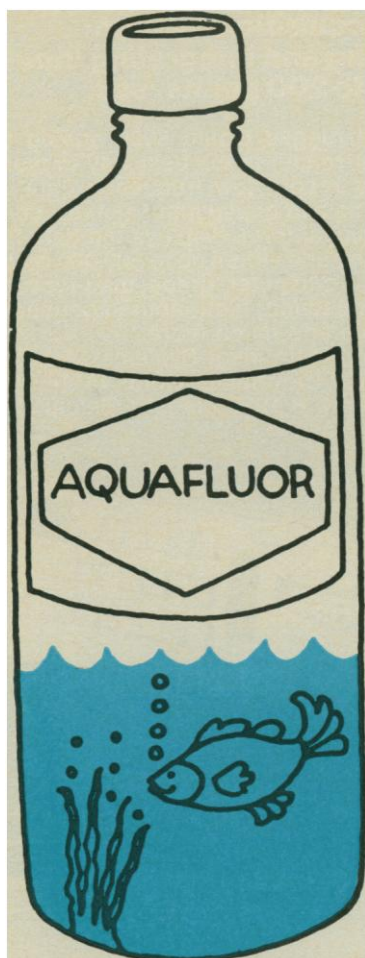


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burg. (R. I. Howard, 4205 Dover Rd., Richmond, Va. 23221)

3-7. American College of Chest Physicians, New Orleans, La. (A. Soffer, ACCP, 112 E. Chestnut St., Chicago Ill. 60611)

3-7. American Medical Tennis Assoc., Las Vegas, Nev. (B. Drake, P.O. Box 183, Alton, Ill. 62002)

3-8. European Dialysis and Transplant Assoc., Tel Aviv, Israel. (Kenes Organizers of Congress, Ltd., P.O. Box 16271, Tel Aviv)

3-9. International Federation of Fertility Soc., 8th world congr., Rio de Janeiro, Brazil. (G. I. M. Sawyer, University College Hospital, London, WC1, England)

4-5. International Symp. on Diagnosis and Treatment of Septicemia, Madrid, Spain. (Scientific Secretary, B. Murillo, 38, bajo, Madrid-8)

4-6. International Conf. on Toxic Dinoflagellate Blooms, Massachusetts Science and Technology Foundation, MIT Sea Grant Program, Boston, Mass. (MSTF, Door 10, Lakeside Office Park, Wakefield, Mass. 01880)

4-7. Advances in Chromatography, intern. symp., 99th, Houston, Tex. (A. Zlatkis, Chemistry Dept., Univ. of Houston, Houston 77044)

4-7. American Physical Soc., 16th Plasma Physics Div., Albuquerque, N.M. (W. W. Havens, Jr., 335 E. 45 St., New York 10017)

4-7. Systems Engineering Education in Developing Nations Symp., Intern. Federation on Automatic Control, New Delhi, India. (B. D. Swaroop, IFAC Symp., Inst. of Engineers (India), 8 Gokhale Rd., Calcutta, 700 020, India)

4-7. American Assoc. of Zoo Veterinarians, Atlanta, Ga. (L. G. Simmons, River-view Park, Omaha, Neb. 68108)

5-7. International Conf. on Energy Storage, Compression, and Switching, Istituto Elettrotecnico Nazionale Galileo Ferraris, Torino, Italy. (M. Canavese, IENGf, Corso Massimo d'Azeglio, 42, Torino 10125)

5-8. Acoustical Soc. of America, St. Louis, Mo. (B. H. Goodfriend, ASA, 335 E. 45 St., New York 10017)

5-8. International Health Evaluation Assoc., 4th, San Francisco, Calif. (IHEA, c/o Oldfield, 475 Massachusetts Ave., Lexington, Mass. 02173)

5-8. American Speech and Hearing Assoc., Las Vegas, Nev. (K. O. Johnson, ASHA, 9030 Old Georgetown Rd., Washington, D.C. 20014)

5-10. American Soc. of Clinical Hypnosis, New Orleans, La. (F. D. Nowlin, ASCH, 800 Washington Ave., SE, Minneapolis, Minn. 55414)

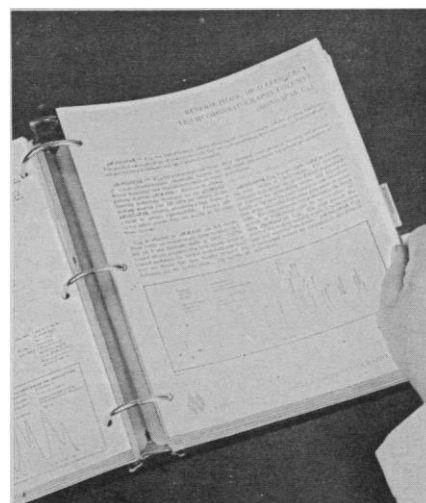
6-8. International Audio-Tutorial Congr., 6th annual, San Francisco, Calif. (J. Hinton, Cabrillo College, 6500 Soquel Dr., Aptos, Calif. 95003)

6-8. Designing to Survive Disaster Symp., Chicago, Ill. (M. E. Nelson, IIT Research Inst., 10 W. 35 St., Chicago 60616)

6-8. Systems Engineering, 2nd conf., American Inst. of Industrial Engineers, Minneapolis, Minn. (J. F. Wolbrink, AIIE Inc., 25 Technology Park/Atlanta, Norcross, Ga. 30071)

6-9. American Soc. of Cytology, 22nd annual, New York, N.Y. (W. R. Lang, Health Sciences Center, Suite 1006, 130

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South 9 St., Philadelphia, Pa. 19107)

6-9. **Medical Soc. of the United States and Mexico**, 22nd annual, Guadalajara, Jal, Mexico. (V. E. Bryant, MSUSM, Suite 207, 333 W. Thomas Rd., Phoenix, Ariz. 85013)

6-10. **American Acad. of Neurological Surgery**, Bermuda. (R. H. Patterson, Jr., 525 E. 68 St., New York 10021)

7-8. **Association of Anesthetists of Great Britain and Ireland**, London, England. (Association of Anesthetists, Room 475, Tavistock House South, Tavistock Sq., London, WC1H 9JP)

7-8. **American Bankers Assoc.**, Milwaukee, Wis. (W. R. Moroney, ABA, 1120 Connecticut Ave., NW, Washington, D.C. 20036)

7-8. **American Chemical Soc.**, 10th midwestern regional, Iowa City, Iowa. (D. J. Pietrzyk, Dept. of Chemistry, Univ. of Iowa, Iowa City 52240)

7-8. **Canadian Conf. on Communications and Power**, Inst. of Electrical and Electronics Engineers, Montreal. (D. Mukhedkar, Ecole Polytechnique, 2500 Ave. Marie-Guyard, Montreal H3T 1P8, Canada)

7-8. **Fiber Structure as Related to End-Use Performance Symp.**, Fiber Soc., Princeton, N.J. (L. Rebenfeld, FS, Textile Research Inst., P.O. Box 625, Princeton 08540)

7-8. **National Conf. on Legal Aspects of Computer Use in Health Care Delivery**, American Soc. of Law and Medicine and Blue Shield of Massachusetts, Boston. (R. N. Freed, ASLM, 454 Brookline Ave., Boston 02215)

7-9. **Cancer Chemotherapy: Important Advances and Recent Developments**, 19th annual clinical conf., Univ. of Texas M. D. Anderson Hospital and Tumor Inst., Houston. (J. Brandenberger, Information Coordinator, Univ. of Texas M. D. Anderson Hospital and Tumor Inst., Houston 77025)

7-9. **School Science and Mathematics Assoc.**, Cincinnati, Ohio. (D. M. Shafer, Lewis House, P.O. Box 1614, Indiana Univ. of Pennsylvania, Indiana 15701)

7-10. **Association of Clinical Scientists**, Philadelphia Pa. (F. W. Sunderman, Jr., Univ. of Connecticut Medical School, P.O. Box G., Farmington, Conn. 06032)

7-10. **Society for Computer Medicine**, 4th natl., New Orleans, La. (M. A. Jenkin, 20560 Linden Rd., Excelsior, Minn. 55331)

7-10. **World Congr. on Dyslexia**, 25th, Orton Soc. in cooperation with Mayo Clinic, Rochester, Minn. (Registration Chairman, P.O. Box 1136, Rochester, Minn. 55901)

8-10. **American Medical Curling Assoc.**, Wilmette, Ill. (J. D. Cardy, 3180 Colonial Dr., Milwaukee, Wis. 53202)

9. **American College of Dentists**, Washington, D.C. (R. J. Nelsen, ACD, Suite 304, 7316 Wisconsin Ave., Bethesda, Md. 20014)

10-14. **American Assoc. of Colleges of Pharmacy**, New Orleans, La. (C. W. Bliven, AACP, Suite 800, 8121 Georgia Ave., Silver Spring, Md. 20910)

10-14. **American Dental Assoc.**, Washington, D.C. (C. G. Watson, ADA, 211 E. Chicago Ave., Chicago, Ill. 60611)

10-14. **Society of Exploration Geophysicists**, Dallas, Tex. (H. R. Breck,

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10-14. American Soc. of Mechanical Engineers, Philadelphia, Pa. (ASME, United Engineering Center, 345 E. 47 St., New York 10017)

10-15. American Soc. of Agronomy, Chicago, Ill. (M. Stelly, ASA, 677 S. Segoe Rd., Madison, Wis. 53711)

10-15. Product Safety: Research and Development to Prevent Product-Related Injuries Conf., Engineering Foundation, Pacific Grove, Calif. (EF, 345 E. 47 St., New York 10017)

10-16. National Assembly of Mexican Surgeons, 21st, Mexico City. (Hospital Juarez, Plaza de San Pablo No. 13, Mexico 1, D.F.)

11-13. Association for Computing Machinery, San Diego, Calif. (J. F. Cunningham, ACM, 1133 Ave. of the Americas, New York 10036)

11-13. Ultrasonics Symp., Inst. of Electrical and Electronics Engineers, Milwaukee, Wis. (M. Levy, Univ. of Wisconsin, Milwaukee 53201)

11-15. Conference on Plasma Physics and Controlled Nuclear Fusion Research, 5th, Intern. Atomic Energy Agency, Tokyo, Japan. (J. H. Kane, Div. of Technical Information, Atomic Energy Commission, Washington, D.C. 20545)

12-14. Conference on Aerospace and Aeronautical Meteorology, American Meteorological Soc. and American Inst. of Aeronautics and Astronautics, El Paso, Tex. (AIAA, 1290 Ave. of the Americas, New York 10019)

12-14. Mid-Atlantic Industrial Waste Conf., 7th, Philadelphia, Pa. (M. D. Lagrega, Inst. of Environmental Studies, Drexel Univ., Philadelphia 19104)

12-14. Society of Plastics Engineers, Detroit, Mich. (SPE, 656 W. Putnam Ave., Greenwich, Conn. 06830)

12-14. Los Angeles Reactive Pollutant Program Symp., Coordinating Research Council, Santa Barbara, Calif. (T. Redington, CRC, 30 Rockefeller Pl., New York 10020)

12-14. Symposium on Science and Research in the Zoological Garden, 100th, Philadelphia, Pa. (R. L. Snyder, Philadelphia Zoological Garden, 34th St. and Girard Ave., Philadelphia 19104)

13. American College of Physicians, New Jersey regional mtg., Piscataway. (H. E. Nussbaum, 120 Millburn Ave., Millburn, N.J. 07041)

14. American Geographical Soc., New York, N.Y. (R. B. McNee, AGS, Broadway at W. 156 St., New York 10032)

14-16. Science Teachers Assoc. of Ontario, Toronto, Canada. (STAO, Univ. of Waterloo, Waterloo, Ont., Canada)

16-17. Oklahoma Acad. of Science, Durant. (J. F. Lovell, Dept. of Biological Sciences, Southwestern State College, Weatherford, Okla. 73096)

16-17. American Assoc. of Electromyography and Electrodagnosis, San Francisco, Calif. (W. C. Wiederholt, AAEE, 7010 Via Valverde, La Jolla, Calif. 92037)

16-17. National Conf. on Methods of Venereal Disease Prevention, Chicago, Ill. (J. Lama, Mid-West Assoc. for the Study of Human Sexuality, 100 E. Ohio St., Chicago 60611)

17-20. Southern Medical Assoc., Atlan-

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ta, Ga. (R. F. Butts, 2601 Highland Ave., Birmingham, Ala. 35205)

17-21. International **Food-Drugs from the Sea** Conf., Marine Technology Soc., Mayaguez, P.R. (G. Greene, D-590, Oceanographic Liaison, Abbott Labs., North Chicago, Ill. 60064)

17-21. Academy of **Psychosomatic Medicine**, Scottsdale, Ariz. (K. Shannon, APM, 813 River Rd., Shreveport, La. 71105)

17-22. American Acad. for **Cerebral Palsy**, Denver, Colo. (J. E. Bryan, AACCP, 1255 New Hampshire Ave., NW, Washington, D.C. 20009)

17-22. American Soc. of **Mechanical Engineers**, New York, N.Y. (R. B. Finch, ASME, 345 E. 47 St., New York 10017)

17-22. American Acad. of **Physical Medicine and Rehabilitation**, San Francisco, Calif. (C. C. Herold, AAPMR, 30 N. Michigan Ave., Chicago, Ill. 60602)

18-19. International Symp. on the **Supply of Natural Uranium**, Deutsches Atomforum e.V. and the Specialist Group on Fuel Elements of the Nuclear Technology Soc., Mainz, West Germany. (Deutsches Atomforum e.V., Haus X, Allianzplatz, 53 Bonn 1, FRG)

18-20. **Geochemical Soc.**, Miami Beach, Fla. (E. E. Angino, Dept. of Geology, Univ. of Kansas, Lawrence 66044)

18-20. **Geological Soc. of America**, Miami Beach, Fla. (E. B. Eckel, GSA, 3300 Penrose Pl., Boulder, Colo. 80301)

18-20. **Paleontological Soc.**, Miami, Fla. (W. O. Addicott, U.S. Geological Survey, 345 Middlefield Rd., Menlo Park, Calif. 94025)

18-20. International **Semiconductor Laser** Conf., 4th, Inst. of Electrical and Electronics Engineers, Atlanta, Ga. (IEEE, 345 E. 47 St., New York 10017)

18-21. National **Fire Protection Assoc.**, Seattle, Wash. (A. B. Sears, Jr., 470 Atlanta Ave., Boston, Mass. 02210)

18-21. American **Heart Assoc.**, 47th annual, Dallas, Tex. (A. Salerno, Public Relations Div., AHA, 44 E. 23 St., New York 10010)

18-22. American **Chemical Soc.**, Atlantic City, N.J. (J. G. Grasselli, Standard Oil Co., 4440 Warrensville Center Rd., Cleveland, Ohio 44128)

18-22. Symposium on **Isotope Ratios as Pollutant Source and Behaviour Indicators**, Food and Agriculture Organization, and Intern. Atomic Energy Agency, Vienna, Austria. (J. H. Kane, Office of Information Services, Atomic Energy Commission, Washington, D.C. 20545)

18-22. International **Lead** Conf., 5th, Lead Development Assoc., Paris, France. (LDA, 34 Berkeley Sq., London W.1, England)

18-22. American **Water Resources Assoc.**, 10th, San Juan, P.R. (AWRA, 206 E. University Ave., Urbana, Ill. 61801)

19-21. **Quality Control and Nondestructive Testing in Welding**, intern. conf., London, England. (J. G. Young, Standards and Quality Control, Welding Inst., Abington Hall, Abington, Cambridge, CB1 6AL, England)

19-23. **Education in the Health Sciences**, 2nd intern. conf., Montreux, Switzerland. (Secretary, 80 Jan van Nassaustraat, Box 9058, The Hague, Netherlands)

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20-23. **Neuroelectric Soc.**, 7th annual conf., New Orleans, La. (J. G. Llauro, Wing D-12N, VA Centers, Wood, Wis. 53193)

20-23. **Western Surgical Assoc.**, San Francisco, Calif. (W. P. Mikkelsen, 1127 Wilshire Boulevard, Los Angeles, Calif. 90017)

20-24. **American Anthropological Assoc.**, Mexico City. (E. J. Lehman, AAA, 1703 New Hampshire Ave., NW, Washington, D.C. 20009)

20-24. **American Assoc. of Psychiatric Services for Children**, New York, N.Y. (R. Greene, AAPSC, 1701 18th St., NW, Washington, D.C. 20009)

20-25. **Symposium on Fetal Antigen Expression in Cancer**, Isawa, Japan. (E. Alpert, Harvard Medical School Massachusetts General Hospital, Boston, Mass. 02114)

21. **Pipeline Hydrogen—The Fuel for the Nuclear Age**, 33rd annual, Inst. of Gas Technology, Chicago, Ill. (H. R. Linden, IGT, 3424 S. State St., IIT Center, Chicago 60616)

21-22. **American Bankers Assoc.**, Western regional, Scottsdale, Ariz. (W. R. Moroney, ABA, 1120 Connecticut Ave., NW, Washington, D.C. 20036)

21-22. **Symposium on Nutrition and Aging**, New York, N.Y. (Director, Inst. of Human Nutrition, Columbia Univ., 511 W. 166 St., New York 10032)

21-23. **American Soc. for Cell Biology**, San Diego, Calif. (N. L. R. Bucher, Huntington Labs., Massachusetts General Hospital, Boston 02114)

21-25. **American Assoc. of Gynecological Laparoscopists**, Anaheim, Calif. (J. M. Phillips, 11239 S. Lakewood Blvd., Downey, Calif. 90241)

22-23. **Tennessee Acad. of Science**, Inc., Memphis. (J. D. Caponetti, Dept. of Botany, Univ. of Tennessee, Knoxville 37916)

25-27. **National Conf. on Advances in Cancer Management**, American Cancer Soc. and Natl. Cancer Inst., New York, N.Y. (S. L. Arje, ACS, 219 E. 42 St., New York 10017)

25-27. **American Physical Soc.**, Fluid Dynamics Div., Pasadena, Calif. (W. W. Havens, Jr., 335 E. 45 St., New York 10017)

26-30. **World Safety and Accident Prevention Congr.**, Makati, Rizal, Philippines. (Safety Organization of the Philippines, Inc., P.O. Box 1, Pasay City)

27-3. **Radiological Soc. of North America**, Chicago, Ill. (H. L. Baker, Jr., 200 First St., SW, Rochester, Minn. 55901)

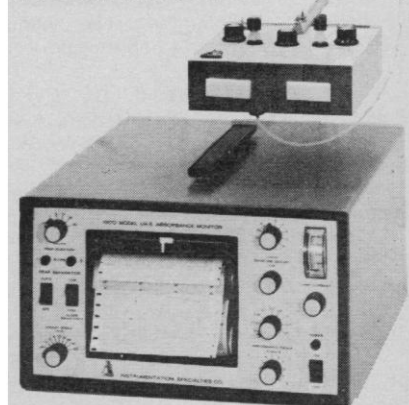
28-30. **National Council for Geographic Education**, Chicago, Ill. (W. W. Elam, NCGE, 115 N. Marion St., Oak Park, Ill. 60301)

28-30. **National Council of Teachers of English**, 64th annual, New Orleans, La. (NCTE, Advertising Dept., 1111 Kenyon Rd., Urbana, Ill. 61801)

30-1. **National Federation of Catholic Physicians Guilds**, Portland, Ore. (R. H. Herzog, NCFPG, 2825 N. Mayfair Rd., Milwaukee, Wis. 53222)

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