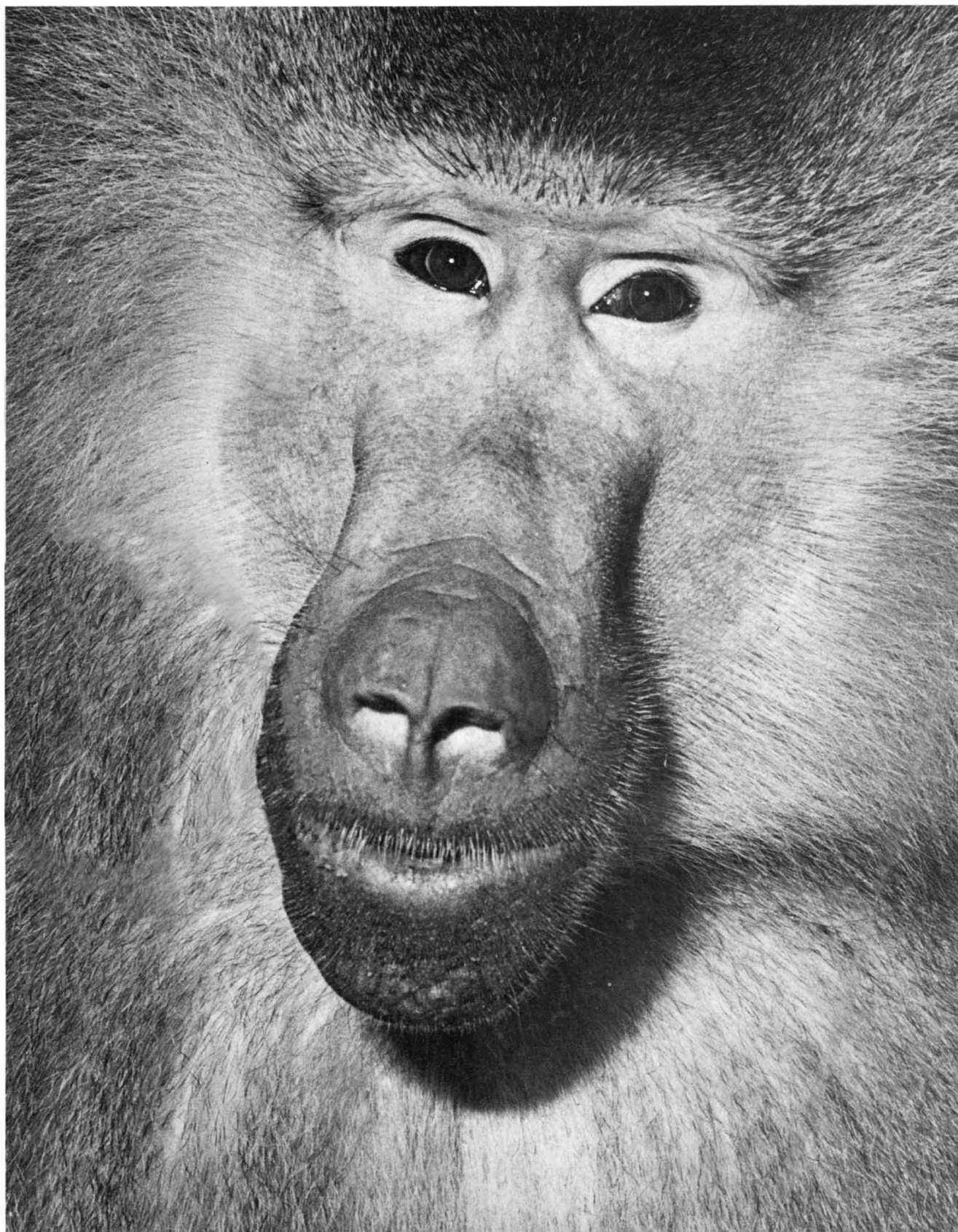


SCIENCE

9 November 1973

Vol. 182, No. 4112

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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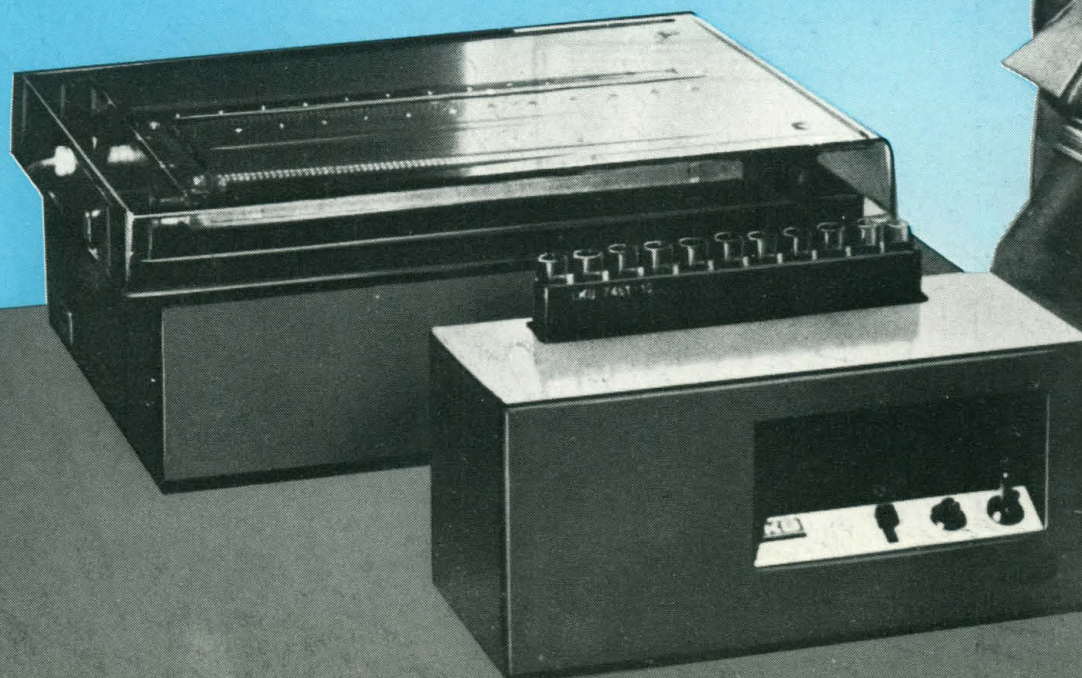
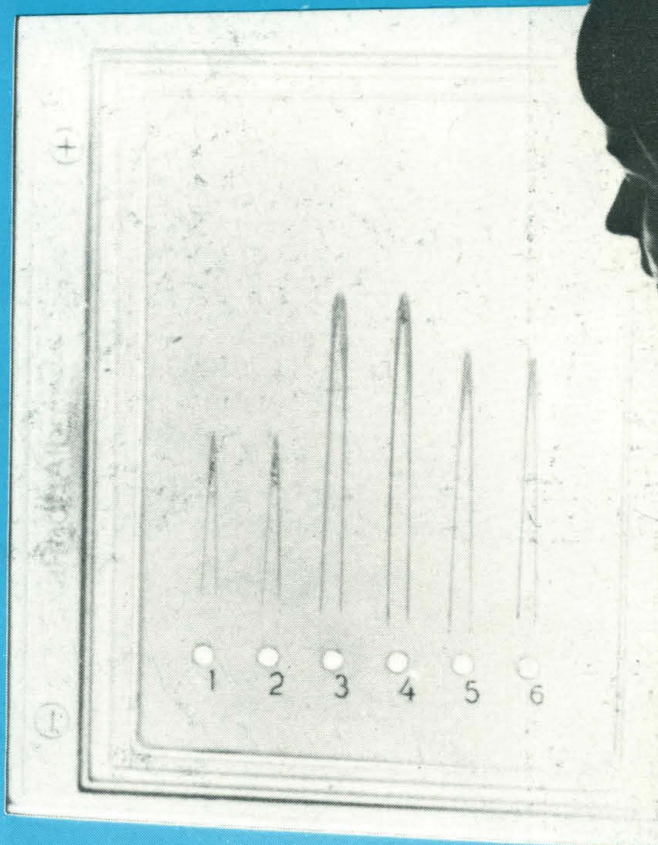
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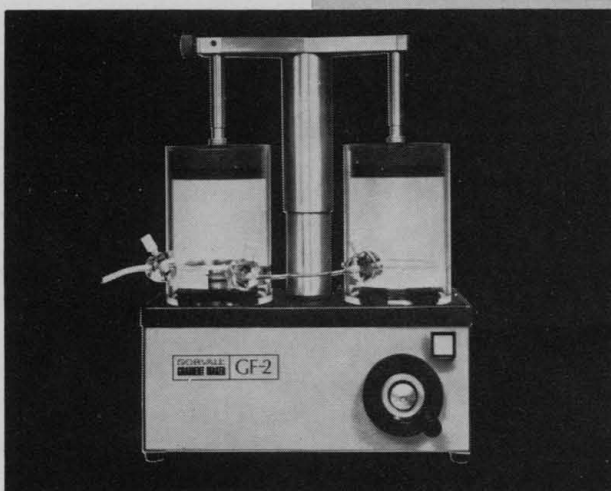
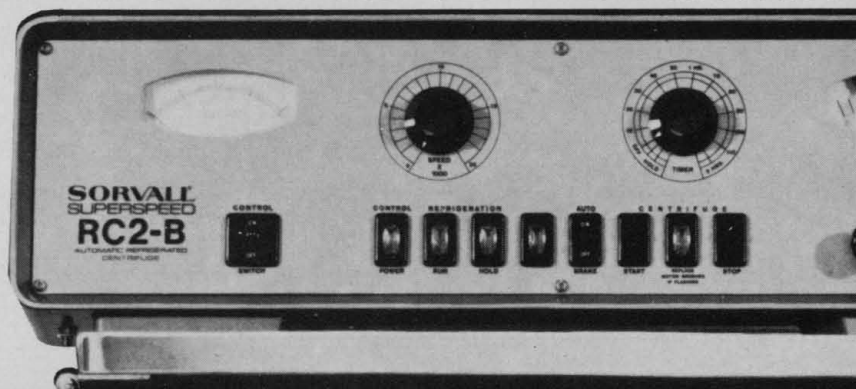
Young male hamadryas baboon (*Papio hamadryas*) who uses a tool to get food when a bonded female brings the tool to him. Such cooperation is rare among nonhuman primates. See page 594 [Leland LaFrance, Brookfield Zoo, Brookfield, Illinois]

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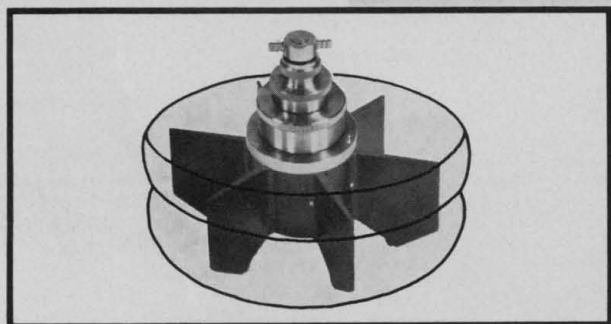
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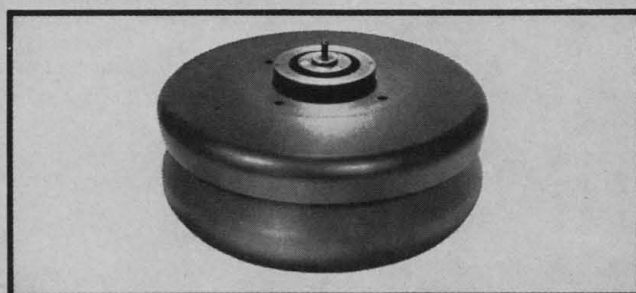


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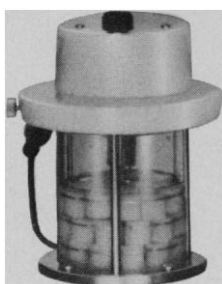
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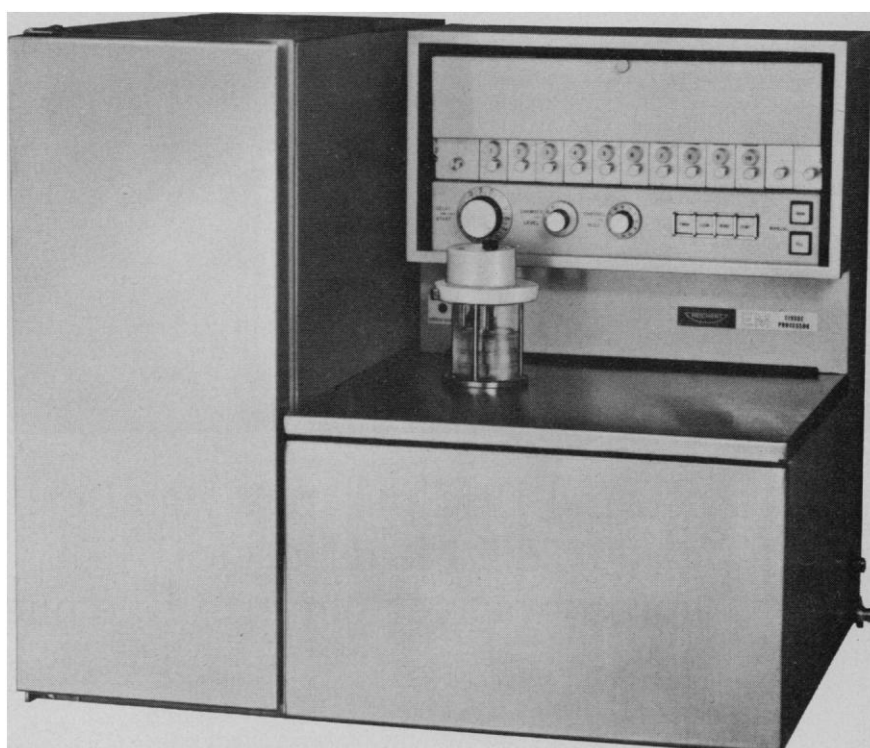
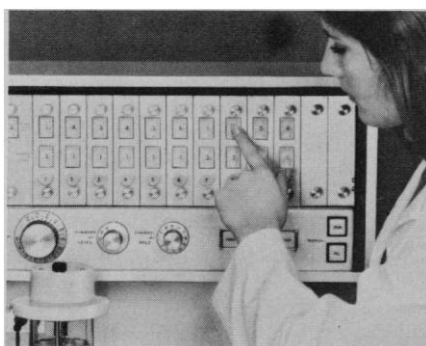


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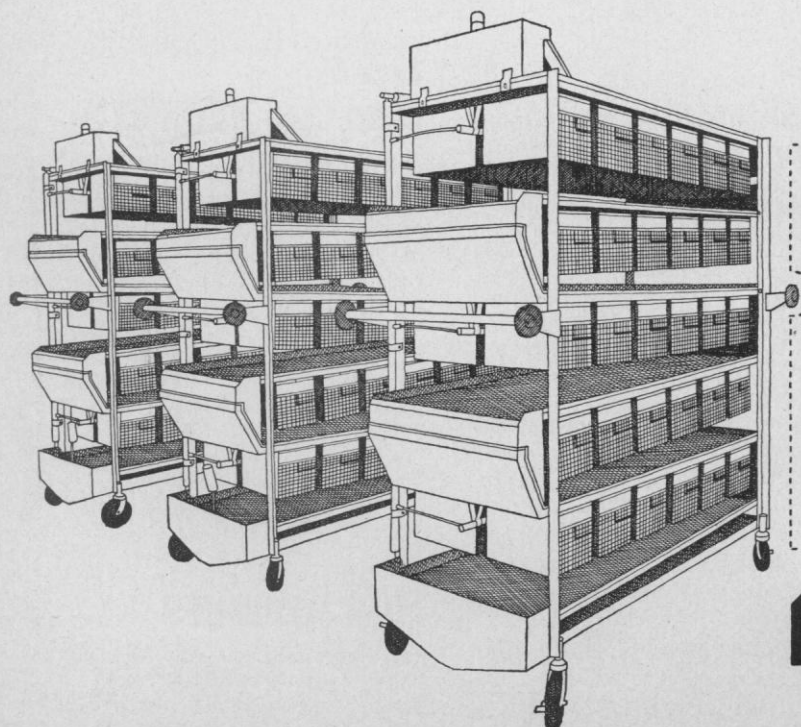
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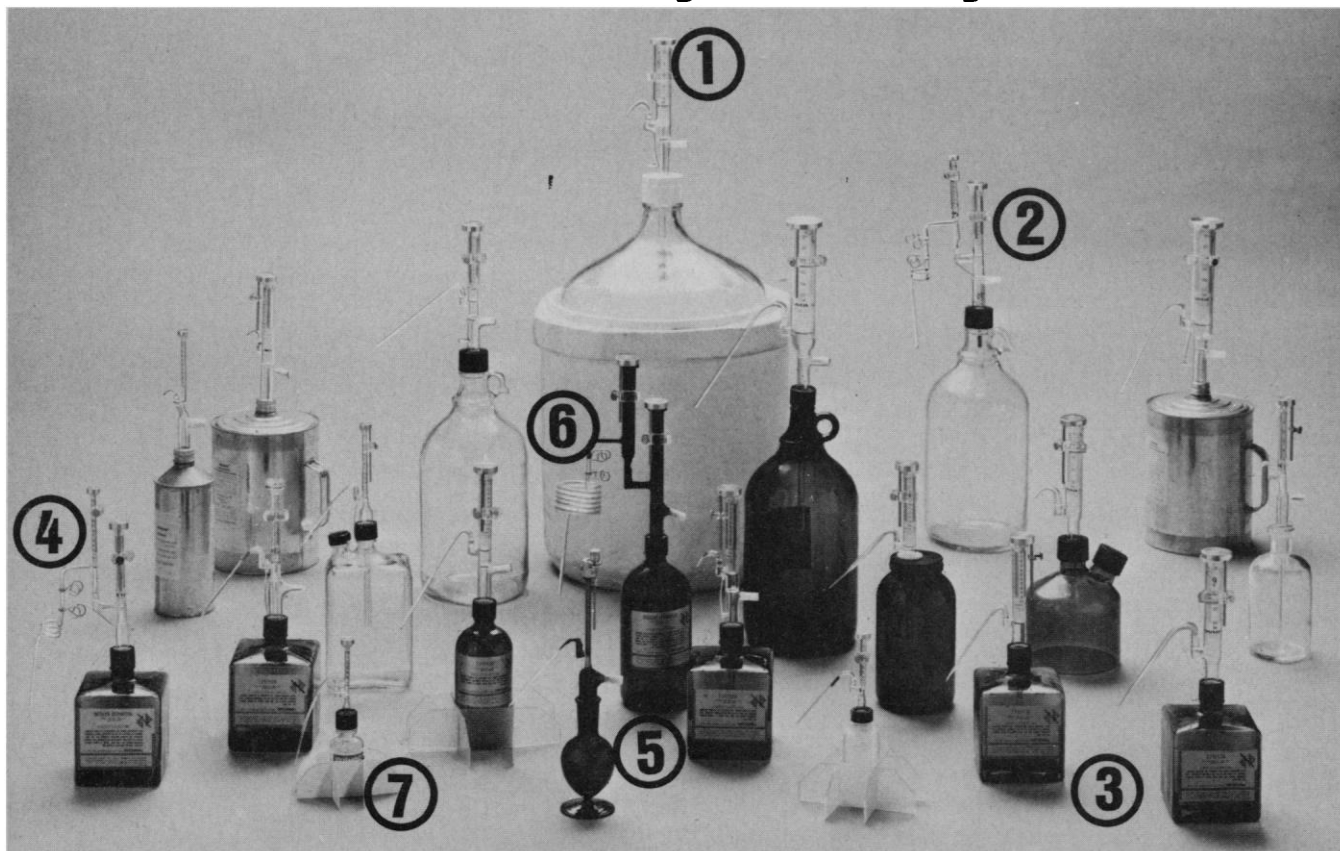
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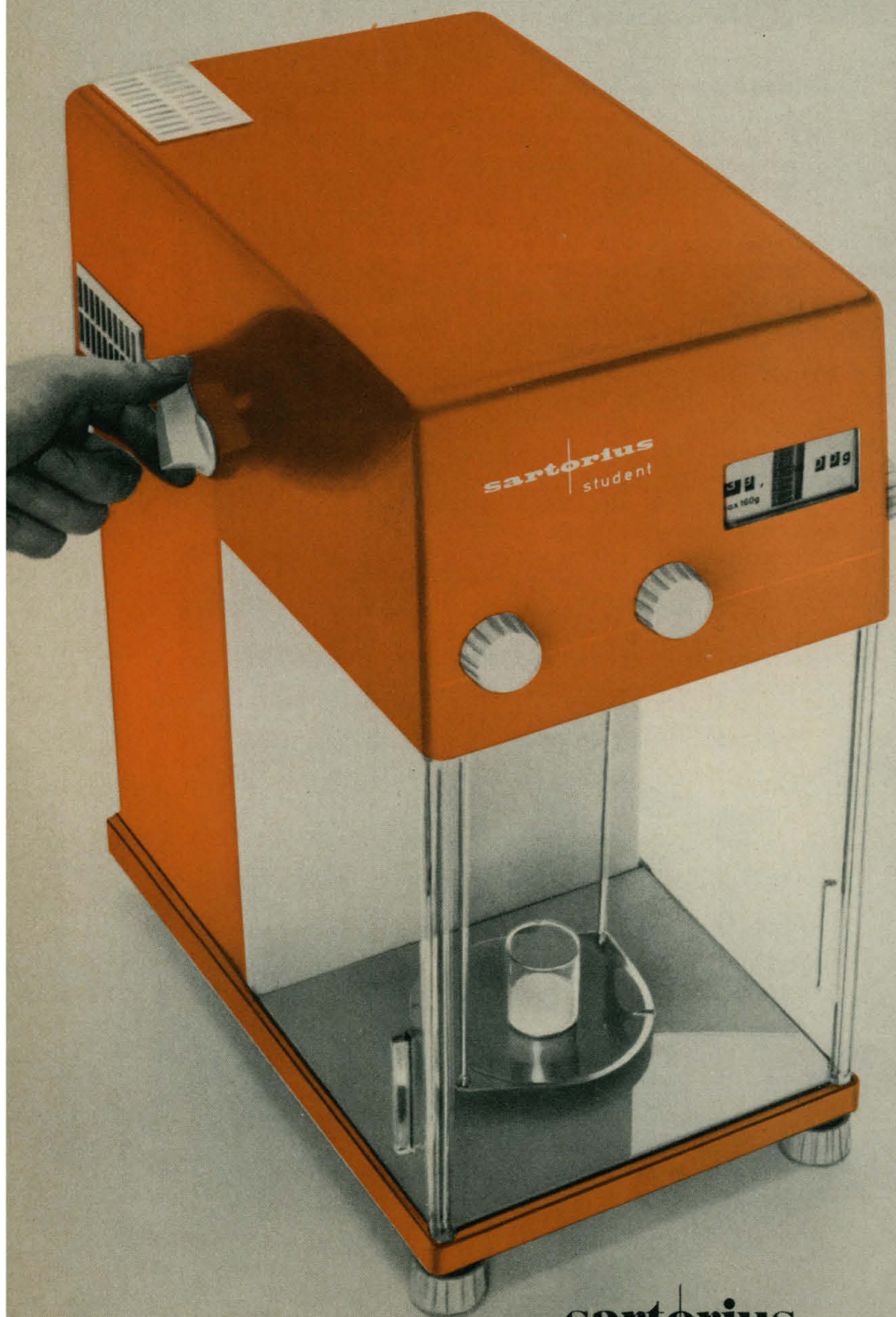
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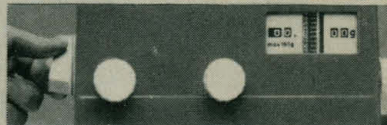
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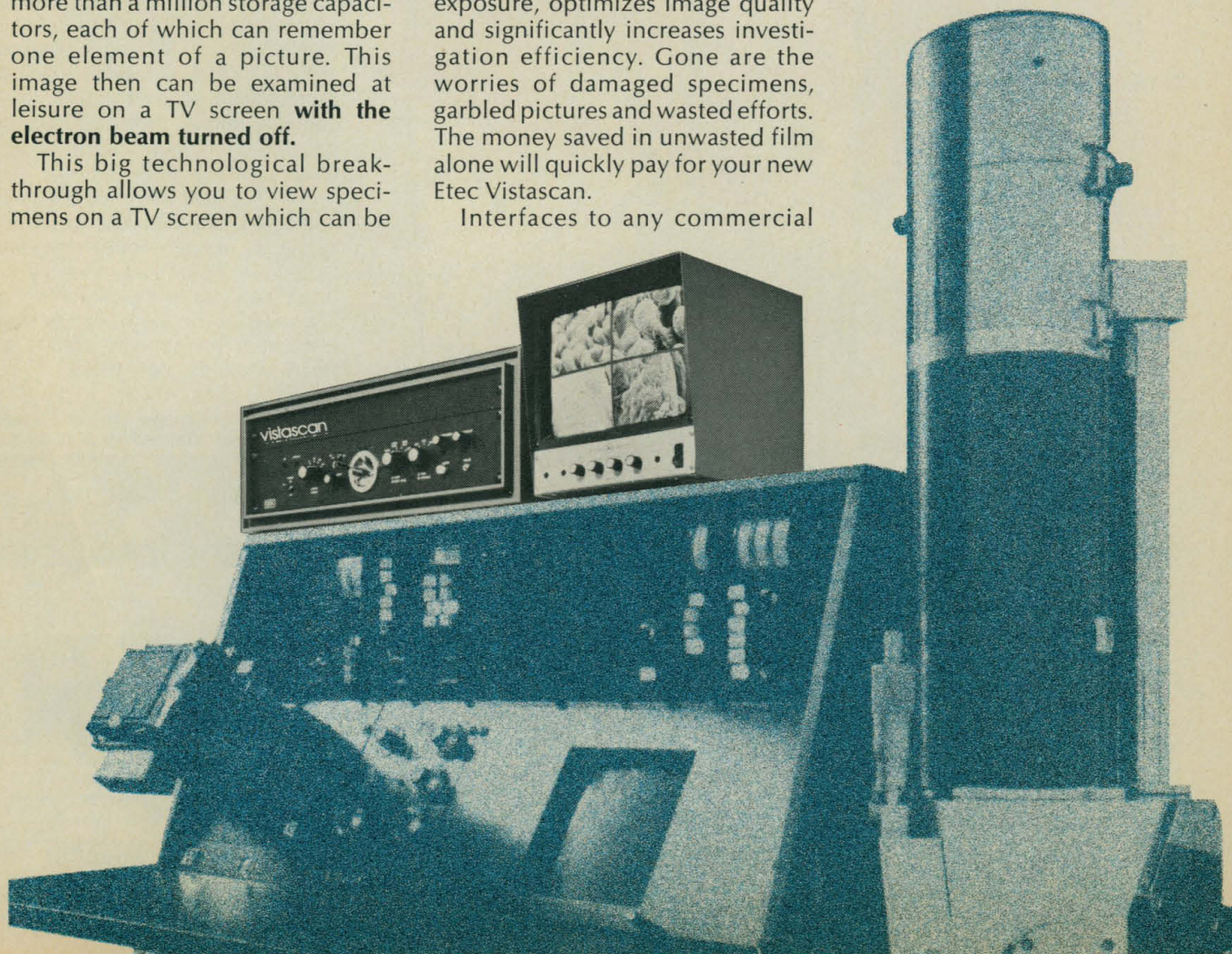
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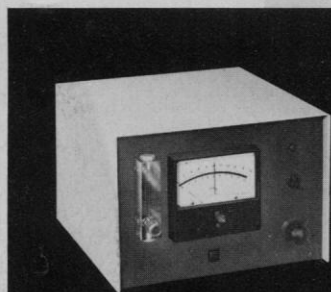
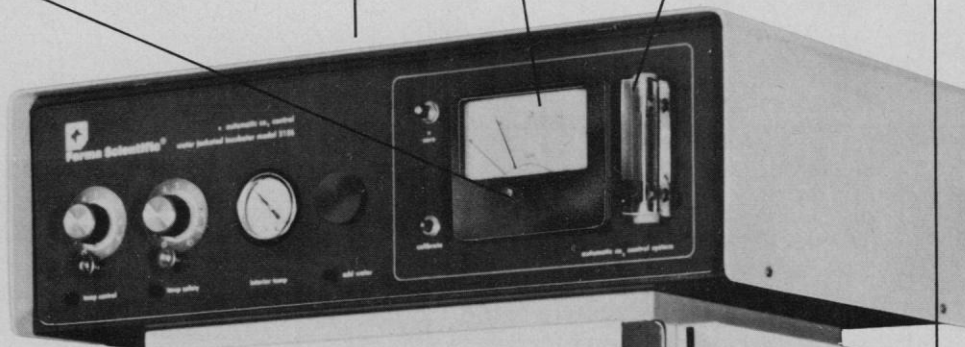
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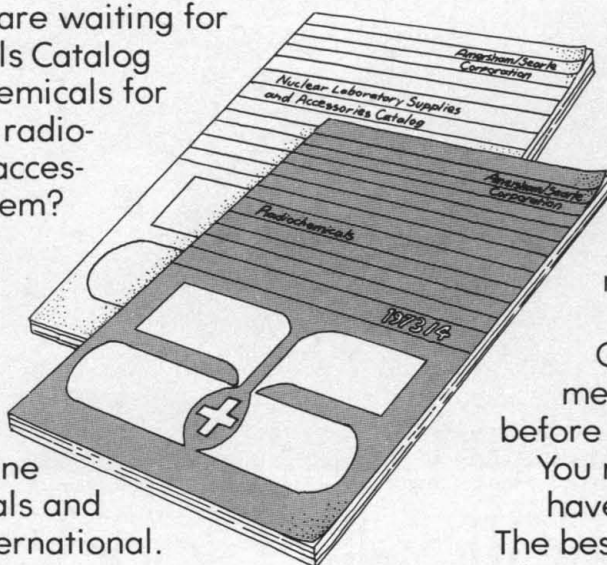


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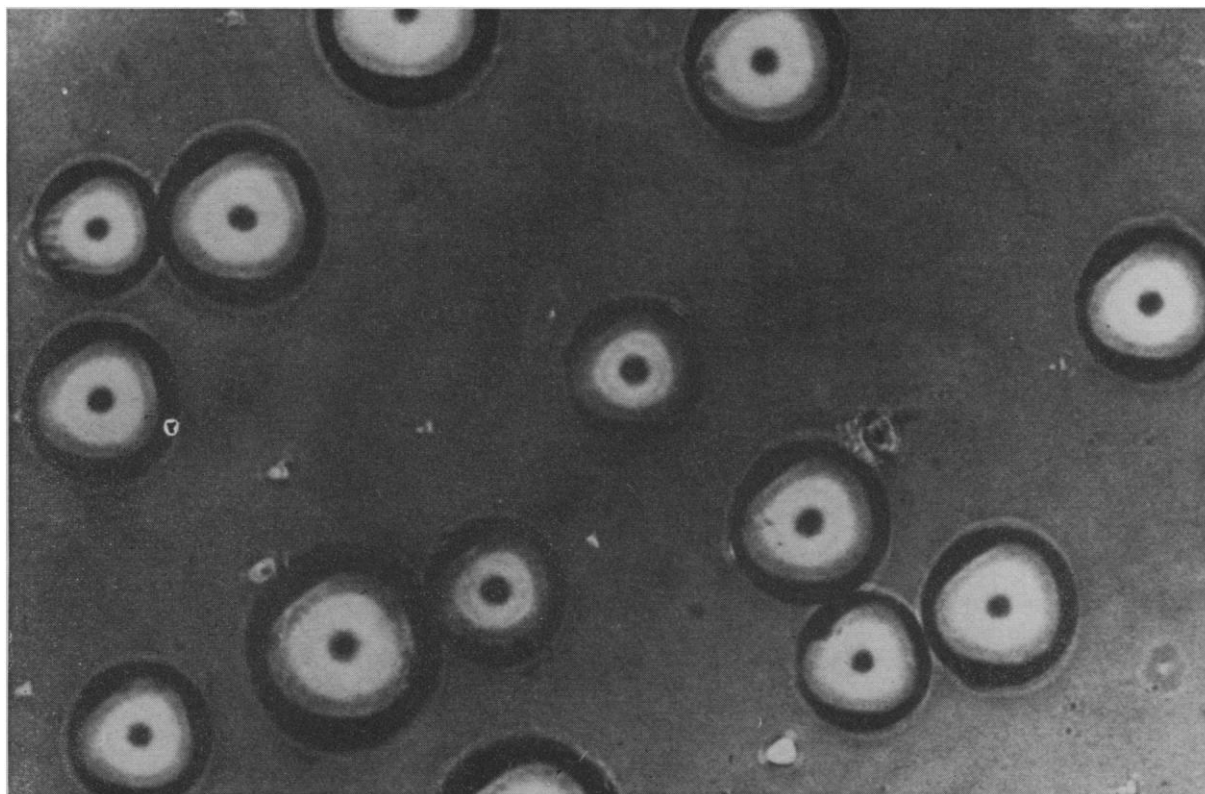
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The enzyme mixture is named after its most unique member, *Collagenase*. Worthington supplies Collagenase in several degrees of purity ranging from crude to highly-purified; researchers have generally found that the less purified material is more effective in releasing intact cells from tissues. The effectiveness, however, seemed to differ with different tissues, and it did not always match the quantitative differences noted in our assay labs.

A program was therefore initiated by Worthington aimed at correlating effectiveness of samples on specific tissues with results of our own biochemical assays. We enlisted the support of several dozen prominent researchers; they evaluated more than a hundred samples of regular production and specially prepared lots of Collagenase in their own studies.

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The increasing use of Collagenase in cell isolation is encouraging. Credit for the program's success is due to the many researchers who cooperated so openly with their time and talent.

Your comments and interest are welcome. Additional information on this application of Collagenase and a copy of our current catalog are available on request.



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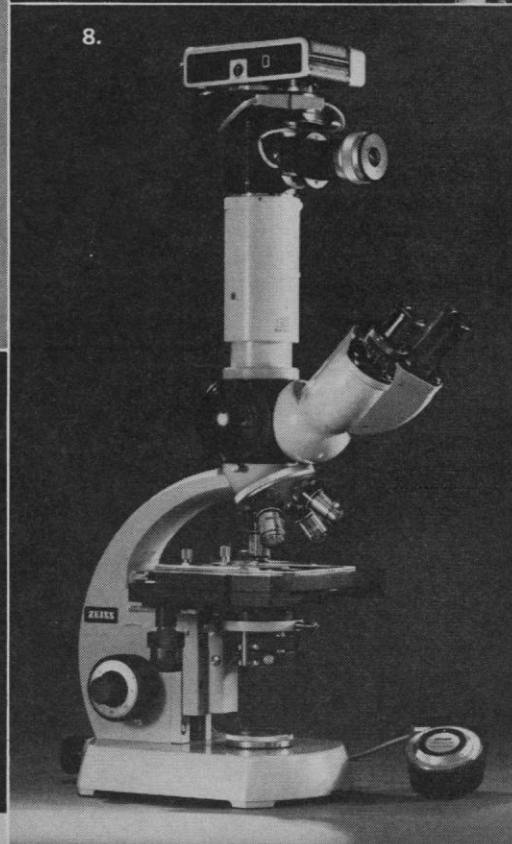
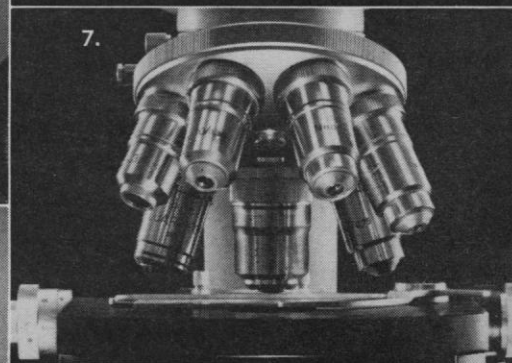
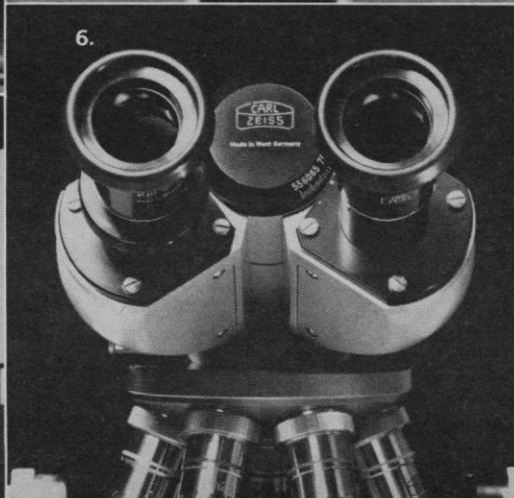
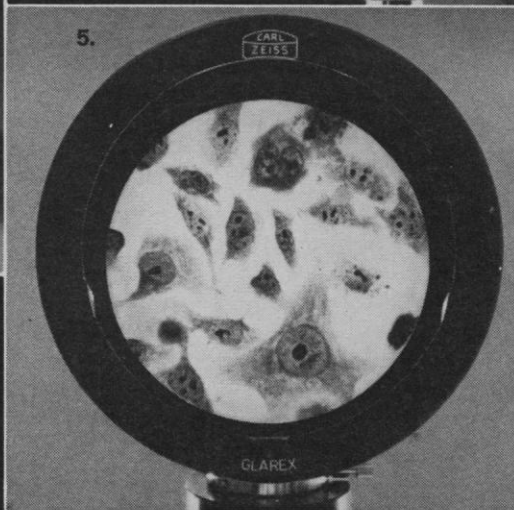
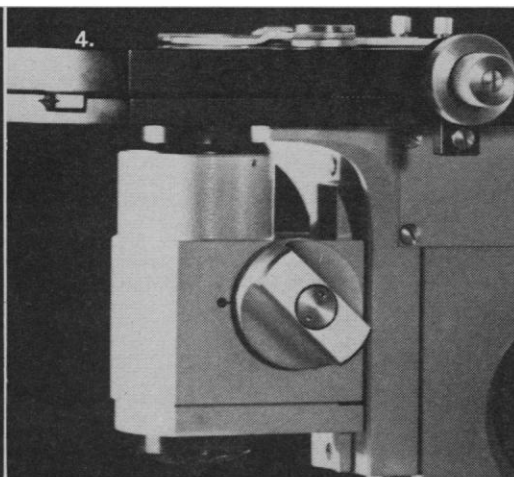
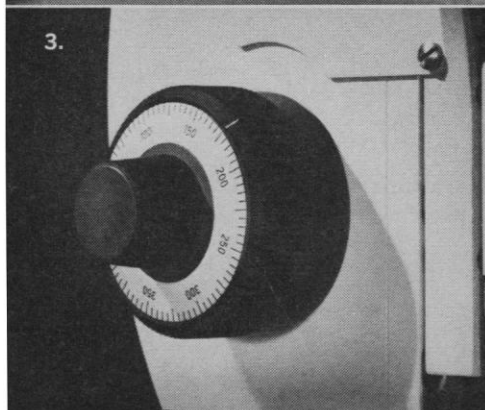
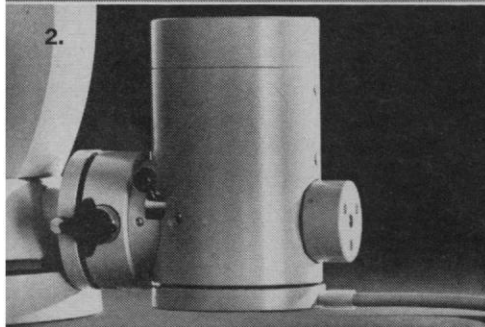
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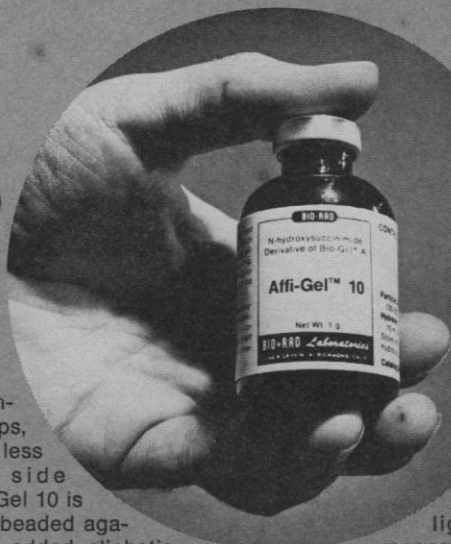
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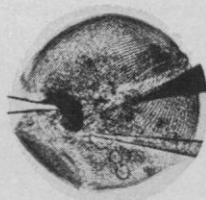
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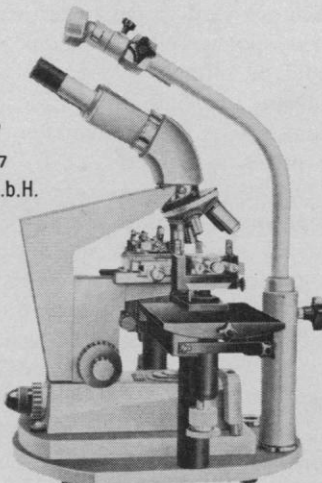
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letter raises the general question of whether to identify commercial sources in a scientific publication.

The pitfall of inter-, and even intra-strain, differences is well-known and is one example of the variation between products that can influence reproduction of experimental results. While open to persuasion, I am presently of the view that specifying the commercial source of any product is inappropriate unless the product is uniquely successful for a particular application. Scientists are creatures of habit, and there is often no other reason for the use of a particular brand or source of supply. Requests for commercial endorsement that are thinly veiled as appeals for experimental reproducibility do a disservice to the generally amicable working relationship between scientists and those who supply them with the tools of their trade.

Science has thus far escaped the plight of the medical profession, where brand names have nearly universally replaced generic names to the detriment of both the practitioner and the patient. Editorial guidance from many journals about the identification of sources of supply is often lacking, and scientists should be cautious in their references to products by company or brand name lest they unwittingly offer endorsements which, in other spheres, would bring due remuneration. The propriety of such a practice in scientific publications is open to question.

Happily, communication between investigators is not entirely defunct, and specific information can readily be obtained by direct inquiry.

D. W. BULLOCK

Department of Obstetrics and Gynecology, Albany Medical College of Union University, Albany, New York 12208

Health Records

About this time of year, Cornell University Health Services, like other college and university health services, begin to receive request forms for medical and mental health records for present or past Cornell students who are applying for places in various graduate school programs. Such request forms are always accompanied by a permission form signed by the applicant authorizing release of such information.

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Not all graduate schools require such information before acceptance. Surprisingly, the ones that do are mostly those relating to health professions (medical schools, nursing schools) which should, above all others, know better. It is obvious that the responses to such inquiries may be used as one of the criteria for admission.

It is our view that release of clinical information as a potential criterion for admission is an unnecessary and unethical breach of confidentiality. The fact that the applicant has signed permission for the release is, in practical terms, irrelevant, as he is in no position to refuse to sign the release.

I urge all graduate schools to discontinue this practice and all undergraduate health services to refuse to provide such information before the applicant is accepted.

In the first place, it is certain that in almost every case there is nothing in a health history that will effectively predict performance in graduate school. In those few cases where a health problem might affect performance, the matter should be obvious on the basis of other observations. Indeed, if a student can complete his course work as an undergraduate in a satisfactory manner, this is the very best criterion of his potential to perform in graduate school.

Furthermore, we have found that some students have purposely not sought needed medical or mental health care in our university health services because they have felt that such care would become part of their records and might jeopardize their acceptance by graduate schools. I am sure other undergraduate schools have the same experience.

Like other physicians, whether in individual or in institutional practice, we maintain a policy of strict confidentiality in our delivery of health care to our patients, students or nonstudents. Any corruption of this policy is contrary to the best interests of patients, including students, and contrary, in the long run, to the interests of the graduate schools.

Once the student has been accepted and has given his permission for release of information, it is then in the best interests of all concerned that clinical information be made readily available to those responsible for his health care.

ALLYN B. LEY

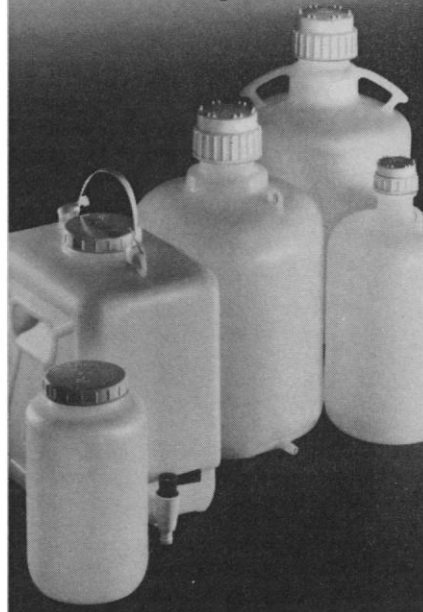
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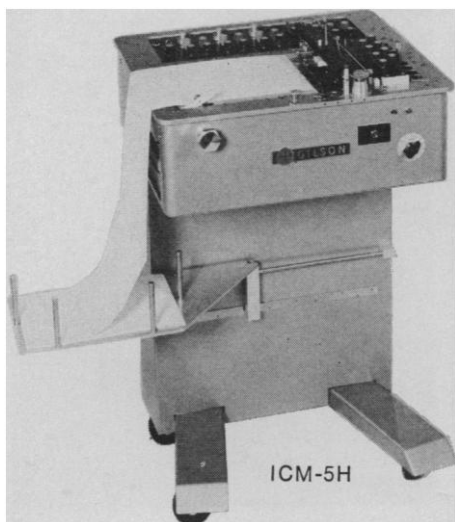
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The Central Role of Chemistry

Most natural scientists would readily agree that research in their various fields owes much to tools and insights derived from chemistry. However, fewer realize the full extent of its contributions. For example, biological and medical scientists, while heavily engaged in applying chemistry to their problems, are not aware of its crucial roles in solid-state physics. Lack of awareness extends to an even larger sphere—the pervasiveness of chemistry in efforts to meet societal needs. True, we have all noted applications such as plastics or pharmaceuticals, but we have not had the opportunity to see a comprehensive summary of the great number of ways in which our daily lives are conditioned by products and knowledge that have come out of research laboratories.

Of all the sciences, chemistry has been about the most ineffective in its public relations. This has not been owing to some defect in the character of chemists or their leadership, but rather to special circumstances. Chemistry does not frequently give rise to "spectaculars." Moreover, most chemists work for industry, and companies usually prefer to maintain a low profile.

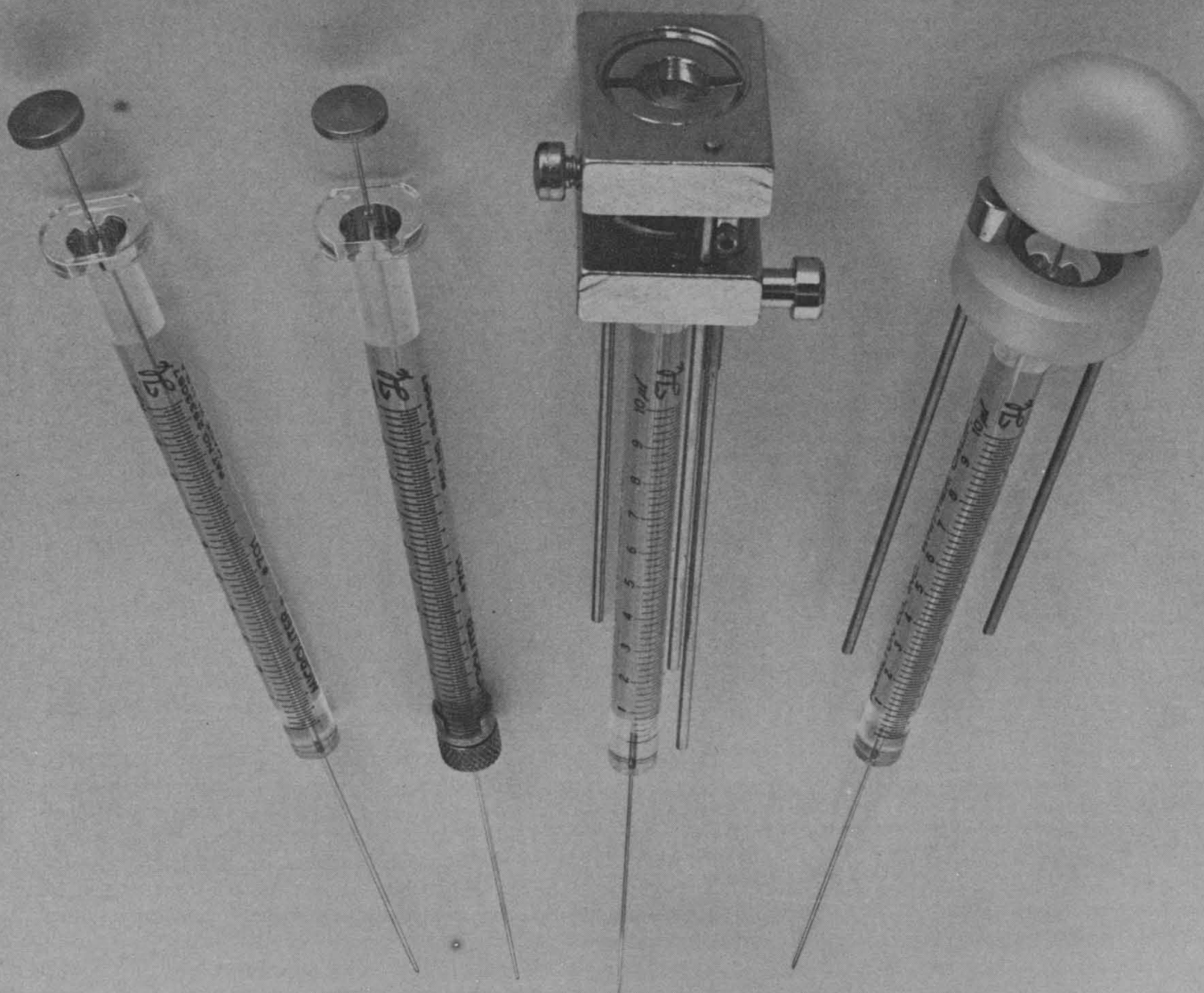
A recently issued, 600-page report entitled *Chemistry in the Economy** maintains the tradition of a low-key approach, but it does set forth an admirable summary of the role of the science in meeting human needs for food, clothing, shelter, health, energy, communications, transportation, and so forth.

The heart of the report is a series of chapters dealing with such topics as food processing, textile fibers, and electronic equipment. Each of these chapters was prepared by a panel of experts drawn mainly from industry. In each case, an historical approach is taken, with key innovators identified. Major products and processes are explained with sufficient detail to be informative, while not excessively technical. At no point does the report talk down to the reader, yet a university student in freshman chemistry could understand it.

As with most such reports in the various disciplines, it is not entirely clear why the report was written or who was the intended audience. No matter. The report should be read by all academic chemists and their students. The quality of the substantive material is such that it could be used as part of a course. Most chemistry graduates are employed by industry. They and their professors would function more effectively if all understood more clearly what the students were preparing themselves for. In addition, scientists in general who read the report would broaden and enrich their comprehension of the science behind their daily lives.

The report has a particular timeliness. It has been issued at a moment when we must begin to prepare for major changes in the shape of our economy. Our present standard of living is heavily dependent on petroleum hydrocarbons, both for energy and chemical feed stocks. Our economy is also based on the use of a wide variety of other raw materials—many of them imported. The coming years will bring global shortages and high prices, and we will be under strong pressure to make do with domestic resources of energy and materials. Changes in processes and the creation of vast new chemical complexes will be necessary to meet the evolving realities. As the enormous extent of the changes and of society's dependence on science become more apparent, chemistry will emerge as the star performer.—PHILIP H. ABELSON

* *Chemistry in the Economy* (American Chemical Society, Washington, D.C., 1973). Price: \$6.50.



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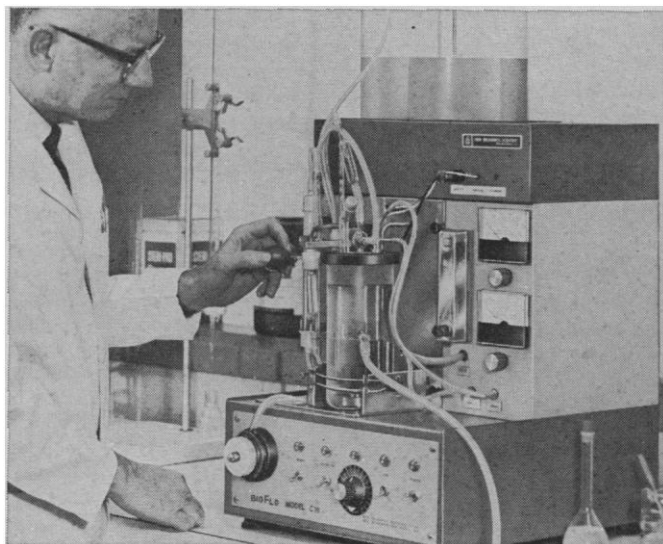
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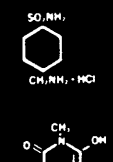
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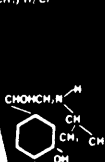
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SCIENCE, VOL. 182

27-30. **Animal Behavior Soc.**, Houston, Tex. (N. M. Jessop, Dept. of Biology, U.S. International Univ., San Diego, Calif. 92106)

27-30. **Biometric Soc.**, Eastern North American region, New York, N.Y. (F. B. Cady, Biometric Unit, 337 Warren Hall, Cornell Univ., Ithaca, N.Y. 14850)

27-30. **Institute of Mathematical Statistics**, New York, N.Y. (L. Katz, Statistical Lab., Michigan State Univ., East Lansing 48823)

27-30. **Western Society of Naturalists**, San Diego, Calif. (D. H. Montgomery, Dept. of Biological Sciences, California Polytechnic State Univ., San Luis Obispo 93401)

27-30. **Society of Protozoologists**, Houston, Tex. (D. M. Hammond, Dept. of Zoology, Utah State Univ., Logan 84321)

27-30. **American Statistical Assoc.**, New York, N.Y. (J. W. Lehman, ASA, 806 15th St., NW, Washington, D.C. 20005)

27-30. **American Soc. of Zoologists**, Houston, Tex. (C. J. Goodnight, Dept. of Biology, Western Michigan Univ., Kalamazoo 49001)

28-29. **Industrial Relations Research Assoc.**, New York, N.Y. (D. B. Johnson, 7114 Social Science Bldg., Univ. of Wisconsin, Madison 53706)

28-30. **Archaeological Inst. of America**, St. Louis, Mo. (E. A. Whitehead, AIA, 260 West Broadway, New York 10013)

28-30. **American Economic Assoc.**, New York, N.Y. (R. Fels, 1313 21st Ave. S., Nashville, Tenn. 37212)

28-30. **History of Science Soc.**, San Francisco, Calif. (R. H. Stuewer, School of Physics and Astronomy, Univ. of Minnesota, Minneapolis 55455)

28-30. **Linguistic Soc. of America**, San Diego, Calif. (T. A. Sebeok, LSA, Room 800, 1717 Massachusetts Ave., NW, Washington, D.C. 20036)

January

2-4. **Solid State Physics**, 11th conf., Inst. of Physics, Manchester, England. (Meetings Officer, IP, 47 Belgrave Sq., London, SW1X 8QX, England)

7-8. **Application of Lasers to the Processing and Examination of Materials**, Inst. of Physics, Sussex, England. (Meetings Officer, IP, 47 Belgrave Sq., London, SW1X 8QX, England)

7-10. **Symposium on Beaufort Sea Coastal and Shelf Research**, Arctic Inst. of North America, San Francisco, Calif. (J. E. Sater, AINA, 1619 New Hampshire Ave., NW, Washington, D.C. 20009)

8-10. **Biological Clocks and Changes in the Earth's Rotation, Geophysical and Astronomical Consequences Conf.**, Newcastle upon Tyne, England. (W. F. Mavor, School of Physics, The University, Newcastle upon Tyne, NE1 7RU)

8-11. **American Meteorological Soc.**, 54th annual, Honolulu, Hawaii. (E. Mazur, AMS, 45 Beacon St., Boston, Mass. 02108)

8-11. **International Conf. on Radioactive Isotopes in Clinical Medicine and Research**, 11th, Badgastein, Austria. (R. Höfer, Nuclear Medicine Dept., 2nd Medical Univ. Clinic, A 1090 Wien, Garnison-gasse 13, Austria)

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| November 12, 8:00 p.m.: | The Origin of Life , CYRIL PONNAMPERUMA, <i>University of Maryland</i> |
| November 19, 8:00 p.m.: | The Procession of Life , KEITH THOMSON, <i>Yale University</i> |
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9-11. International Symp. on **Infectious Diseases in Children**, Mexico City, Mexico. (Hospital del Nino IMAN, Depto. de Enseñanza, Avda Insurgentes Sur 3700-C, Mexico 22, D.F.)

10-11. **Computer in Clinical Electrocardiography** Symp., Assoc. for the Advancement of Medical Instrumentation, Washington, D.C. (J. Skillin, 1500 Wilson Blvd., Arlington, Va. 22209)

13-17. **American Medical Tennis Assoc.**, Tampa, Fla. (B. Drake, AMTA, P.O. Box 183, Alton, Ill. 62002)

14-16. **Southwest Allergy Forum**, Scottsdale, Ariz. (E. G. Barnett, SAF, 550 W. Thomas Rd., Phoenix, Ariz. 85013)

14-18. **Biology and Chemistry of Eucaryotic Cell Surfaces** Conf., 6th, Intern. Union of Biochemistry, Miami, Fla. (Miami Winter Symposia, P.O. Box 906, Biscayne Annex, Miami 33152)

14-18. **International Soc. of Magnetic Resonance**, 5th, Bombay, India. (D. Fiat, Weizmann Inst. of Science, Rehovot, Israel)

14-25. **International Assoc. of Meteorology and Atmospheric Physics**, Melbourne, Australia. (G. B. Tucker, Commonwealth Meteorology Research Centre, P.O. Box 5089AA, Melbourne 3001)

15-17. **American Soc. for Surgery of the Hand**, Dallas, Tex. (J. A. Boswick, Jr., 4200 E. Ninth Ave., Denver, Colo. 80220)

15-19. **American Mathematical Soc.**, San Francisco, Calif. (E. Pitcher, Dept. of Mathematics, Lehigh Univ., Bethlehem, Pa. 18015)

15-19. **National Soc. of Professional Engineers**, Biloxi, Miss. (P. H. Robbins, NSPE, 2029 K St., NW, Washington, D.C. 20006)

17-18. **Symposium on Blood**, 22nd, Detroit, Mich. (E. F. Mammen, Dept. of Physiology, Wayne State Univ., School of Medicine, Gordon H. Scott Hall of Basic Medical Sciences, Detroit, Mich. 48201)

17-19. **International Conf. of Communications**, Inst. of Electrical and Electronics Engineers, Minneapolis, Minn. (M. S. Ulstad, ICC, P.O. Box 35366, Minneapolis 55435)

17-19. **Mathematical Assoc. of America**, San Francisco, Calif. (H. L. Alder, Dept. of Mathematics, Univ. of California, Davis 95616)

19-23. **American Acad. of Allergy**, Bal Harbour, Fla. (J. O. Kelley, AAA, 225 E. Michigan St., Milwaukee, Wis. 53202)

19-24. **American Acad. of Orthopaedic Surgeons**, Dallas, Tex. (C. V. Heck, AAOS, 430 N. Michigan Ave., Chicago, Ill. 60611)

20-23. **International Conf. on Metric Education**, Univ. of Southern Mississippi, Biloxi. (G. Tinnon, Southern Station, Box 56, Hattiesburg, Miss. 39401)

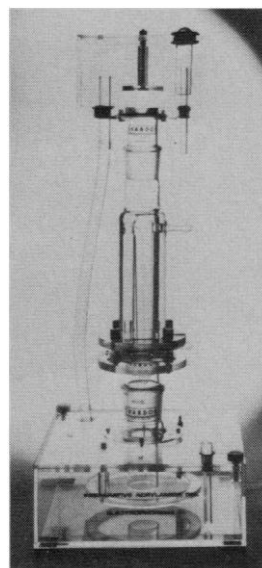
20-25. **Regional Hospital Conf. in Latin America**, 4th, Caracas, Venezuela. (Intern. Hospital Federation, Pan-American Office, 1 Farragut Square S, Washington, D.C. 20006)

20-26. **American Library Assoc.**, Chicago, Ill. (D. H. Clift, ALA, 50 East Huron St., Chicago 60611)

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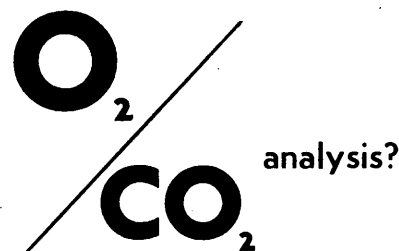
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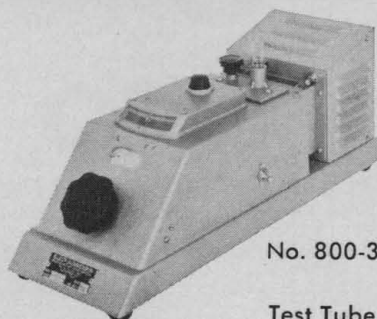
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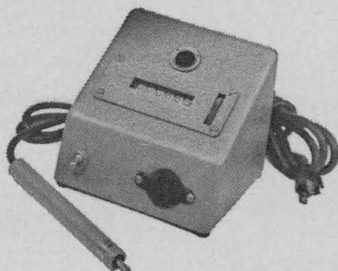


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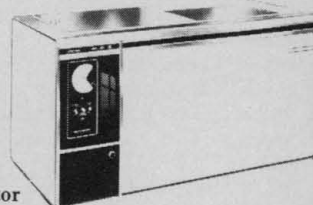
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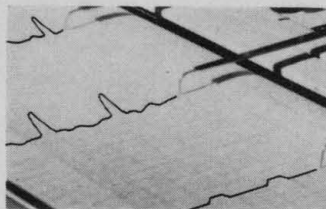
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SCIENCE, VOL. 182

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21-23. **International Conf. on Metric Education**, Biloxi-Gulfport, Miss. (G. Tinnon, Dept. of Confs. and Workshops, Southern Station, Box 56, Hattiesburg 39401)

21-25. **Nevada Acad. of Family Physicians**, Lake Tahoe. (R. Inskip, NAFFP, 601 Ralston St., Reno, Nev. 89503)

21-25. **Highway Research Board**, Washington, D.C. (W. N. Carey, 2101 Constitution Ave., NW, Washington, D.C. 20418)

23-27. **American College of Angiology**, Phoenix, Ariz. (A. Halpern, ACA, 381 Park Ave., S., New York 10016)

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

25-27. **Southern Radiological Conf.**, Point Clear, Ala. (M. Eskridge, P.O. Box 7544, Mobile, Ala. 36607)

25-3. **North American Conf. on Fertility and Sterility**, Caracas, Venezuela. (U.S. Intern. Foundation for Studies in Reproduction, Inc., 112-44 69th Ave., Forest Hills, N.Y. 11375)

27-1. **Institute of Electrical and Electronics Engineers, Power Engineering Soc.**, New York, N.Y. (J. W. Bean, Tech. IEEE, 345 E. 47 St., New York 10017)

28-30. **American Inst. of Aeronautics and Astronautics**, Washington, D.C. (J. J. Harford, AIAA, 1290 Avenue of the Americas, New York 10019)

28-30. **Conference on Structure-Property Relationships in Thick Film and Bulk Coatings**, Vacuum Metallurgy Div., American Vacuum Soc., Inc., San Francisco, Calif. (R. F. Bunshah, 6532 Boelter Hall, Univ. of California, Los Angeles 90024)

28-30. **Society of Thoracic Surgeons**, Los Angeles, Calif. (W. G. Purcell, STS, 111 E. Wacker Dr., Chicago, Ill. 60601)

28-1. **Asia and Oceania Congr. of Endocrinology**, 5th, Chandigarh, India. (G. K. Rastogi, Endocrinology Sect., Postgraduate Medical Inst., Chandigarh-11)

29-31. **Reliability and Maintainability Symp.**, American Soc. of Mechanical Engineers, Los Angeles, Calif. (P. Drumond, ASME, 345 E. 47 St., New York 10017)

29-1. **Association for Development of Computer-Based Instructional Systems**, Washington, D.C. (R. Pengov, Div. of Computing Services, Ohio State Univ. College of Medicine, 376 W. 10 Ave., Columbus, Ohio 43210)

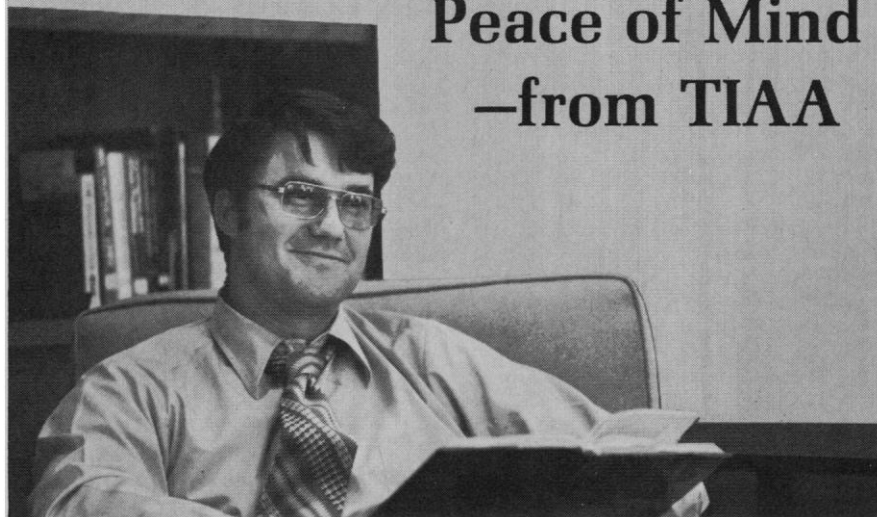
30-1. **Western Spectroscopy Assoc.**, 21st annual conf., Pacific Grove, Calif. (G. R. Haugen, L-404, Lawrence Livermore Lab., Univ. of California, Livermore 94550)

February

3-7. **American Soc. of Heating, Refrigerating and Air-Conditioning Engineers**, semiannual mtg., Los Angeles, Calif. (J. H. Cansdale, ASHRA-CE, United Engineering Center, 345 E. 47 St., New York 10017)

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4-7. American Assoc. of **Physics Teachers**, Chicago, Ill. (A. A. Strassenburg, AAPT, Drawer AW, Stony Brook, N.Y. 11790)

4-9. World Congr. of **Sports Medicine**, 19th, Melbourne, Australia. (A. H. Toyne, WCSM, 61 Collins St., Melbourne)

6-9. American Inst. of **Mining, Metallurgical and Petroleum Engineers**, 77th natl., Denver, Colo. (A. R. Scott, AIMMPE, 345 E. 47 St., New York 10017)

7-8. **Applied Vacuum Science and Technology Symp.**, Southeastern Regional Administrative Group, American Vacuum Soc., Tampa, Fla. (J. L. Provo, AVS, P.O. Box 11508, St. Petersburg, Fla. 33733)

7-9. **World Population Soc.**, sponsored by the Inst. for Global Dynamics, Washington, D.C. (C. M. Cargille, WPS Soc., American Univ., Washington, D.C. 20016)

10-16. American Soc. of **Contemporary Medicine and Surgery**, Miami Beach, Fla. (V. Kendall, Room 1506, 30 N. Michigan Ave., Chicago, Ill. 60602)

10-16. American Soc. of **Contemporary Ophthalmology**, Miami Beach, Fla. (V. Kendall, Room 1506, 30 N. Michigan Ave., Chicago, Ill. 60602)

11-14. American College of **Cardiology**, New York, N.Y. (W. D. Nelligan, ACC,

9650 Rockville Pike, Bethesda, Md. 20014)

11-14. Symposium on **Physical Exercise in Health and Disease**, Wellington Postgraduate Medical Soc., Inc., Wellington, New Zealand. (WPMS, Inc., Wellington Hospital, Wellington)

12-14. **Aerospace and Electronic Systems Conf.**, Inst. of Electrical and Electronic Engineers, Los Angeles, Calif. (Los Angeles Council Office, 3600 Wilshire Blvd., Los Angeles 90010)

12-14. **Computer Science Conf.**, Assoc. for Computing Machinery, Detroit, Mich. (S. J. Wolfson, CSC, Computer Sciences Section, Wayne State Univ., Detroit 48202)

12-14. International Inst. for **Sugar Beet Research**, 37th winter congr., Brussels, Belgium. (O. J. Kint, Baudouinstraat 150, Tienen, Belgium)

13-15. Society of **Photographic Scientists and Engineers**, Houston, Tex. (R. H. Wood, SPSE, 1330 Massachusetts Ave., NW, Washington, D.C. 20005)

13-15. International **Solid State Circuits Conf.**, Inst. of Electrical and Electronic Engineers, Philadelphia, Pa. (Office of Technical Activities Board, IEEE, 345 E. 47 St., New York 10017)

13-16. American Acad. of **Forensic Sciences**, Dallas, Tex. (H. L. Kimball, P.O. Box 302, New Hartford, Conn. 06057)

13-16. National Assoc. of **Medical Examiners**, Dallas, Tex. (W. G. Ecker, Laboratory, St. Francis Hospital, Wichita, Kan. 67214)

14-16. Society of **University Surgeons**,

St. Louis, Mo. (E. W. Fonkalsrud, Dept. of Surgery, Univ. of California Medical Center, Los Angeles 90024)

14-18. American **Group Psychotherapy Assoc.**, New York, N.Y. (M. Keefe, AGPA, 1865 Broadway, New York 10023)

15-20. **Biofeedback Research Soc.**, 5th annual mtg., Colorado Springs, Colo. (F. Butler, Dept. of Psychiatry, #202, Univ. of Colorado Medical Center, 4200 E. Ninth Ave., Denver 80220)

20-23. Society of **Professors of Education**, Chicago, Ill. (R. E. Bayles, School of Education, Atlanta Univ., Atlanta, Ga. 30314)

23-28. American Inst. of **Mining, Metallurgical and Petroleum Engineers**, Dallas, Tex. (J. B. Alford, AIMMPE, 345 E. 47 St., New York 10017)

24-26. Canadian **Ceramic Soc.**, Montreal, P.Q. (H. L. Taylor, Suite 110, 2175 Sheppard Ave., Willowdale, Ont., Canada)

24-28. **Medical Soc.** of the State of New York, New York. (H. I. Fineberg, 420 Lakeville Rd., Lake Success, N.Y. 11040)

24-1. American Association for the **Advancement of Science**, annual mtg., San Francisco, Calif. (E. Zeutschel, AAAS Meetings Office, 1515 Massachusetts Ave., NW, Washington, D.C. 20005)

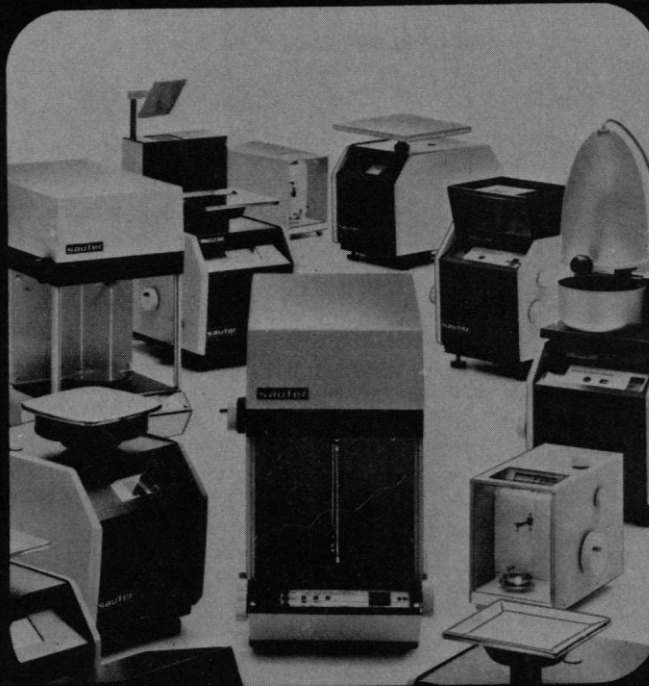
25-27. **Physical Electronics Conf.**, 34th annual, American Physical Soc., Murray Hill, N.J. (H. D. Hagstrum, Bell Labs., 600 Mountain Ave., Murray Hill 07974)

25-2. American **Nature Study Soc.**, San Francisco, Calif. (B. McKnight, Faculty of Education, State University College, New Paltz, N.Y. 12561)

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