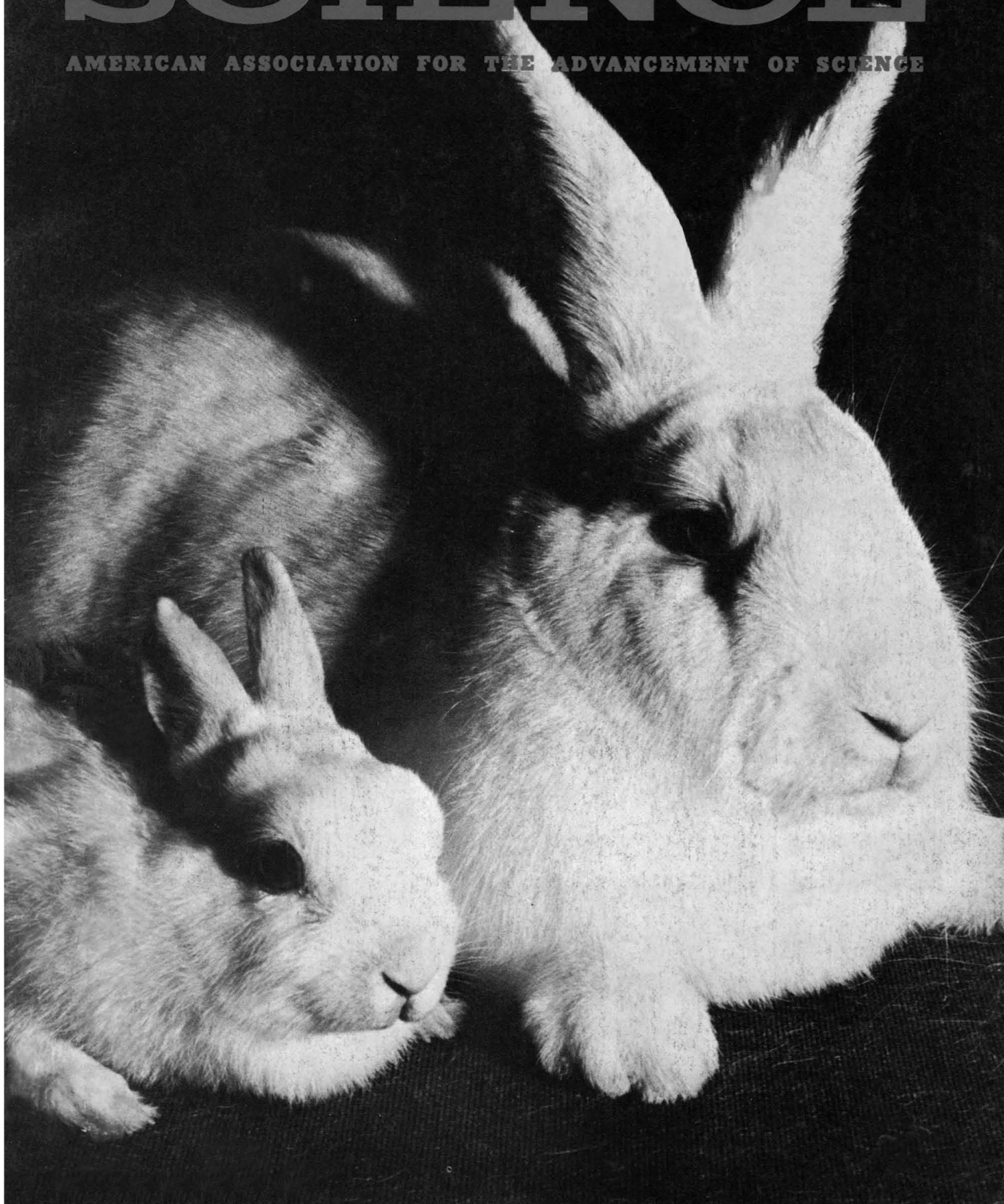


24 March 1978 • Vol. 199 • No. 4335

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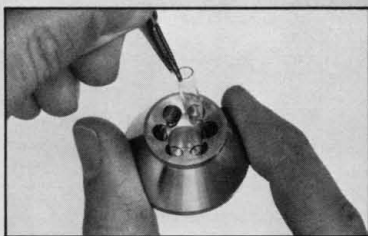
Beckman Airfuge™ Ultracentrifuge— it sediments small samples in a hurry.

The Beckman air-driven miniature ultracentrifuge is one of the most useful developments in centrifugation in years: it is the ideal answer to the previously difficult problem of how to run small sample volumes at high forces.

Essentially, the Airfuge can pellet any material that can be sedimented in any ultracentrifuge. But the Airfuge does it in a fraction of the time. In 2½ hours, for example, the Airfuge effectively separates lipoproteins in human serum. Leukemia viruses are pelleted in 45 minutes. Most biological particles can be sedimented in the Airfuge in less than an hour.

The Airfuge is efficient because sedimenting particles do not have far to travel to reach the wall or bottom of the small tube. Furthermore, since there are no tube caps to attach, samples can be spinning at 100,000 rpm at forces to 160,000 g within one minute of the time they are brought to the lab bench.

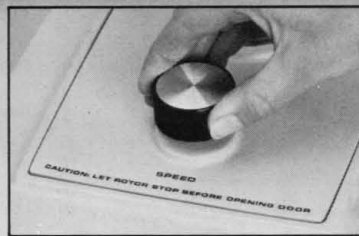
When you have small volumes of sample to centrifuge rapidly, remember: there is an ultracentrifuge that's the right size for them—the Airfuge. For a description of the Airfuge and a list of its applications, write for DS-476/502 to Spinco Division, Beckman Instruments, Inc., 1117 California Ave., Palo Alto, CA 94304.



The fixed-angle rotor holds 6 tubes of 175 μ l each—total rotor volume approximately 1 ml. Three different tube materials are available.



The stator pad has vertical jets to levitate the rotor. Driving jets take the rotor to full speed in 30 seconds.

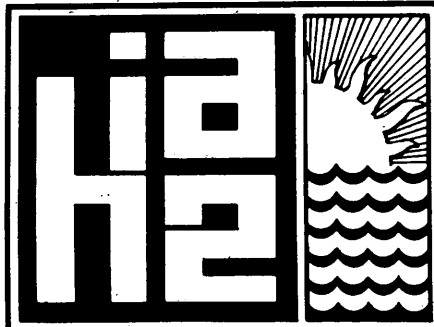


Operation is quite simple. A single knob adjusts air pressure to control rotor speed. The only other control is the timer.

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An Invitation to Membership:



International Association for Hydrogen Energy

A Remarkable Prophecy . . .

"... water decomposed into its primitive elements," "...," and decomposed doubtless, by electricity, which will then have become a powerful and manageable force, ... Some day the coalrooms of steamers and the tenders of locomotives will, instead of coal, be stored with these two condensed gases, which will burn in the furnaces with enormous calorific power. ... I believe, then, that when the deposits of coal are exhausted we shall heat and warm ourselves with water. Water will be the coal of the future."

Jules Verne, ca. 1870
The Mysterious Island

About the IAHE



It is an INTERNATIONAL ASSOCIATION with members around the world who are actively pursuing almost all facets of the hydrogen energy system concept. Our founding members alone represent 26 different nations.



It is focused on HYDROGEN as a "future fuel," one eventually producible economically and in abundance from undepletable energy sources.

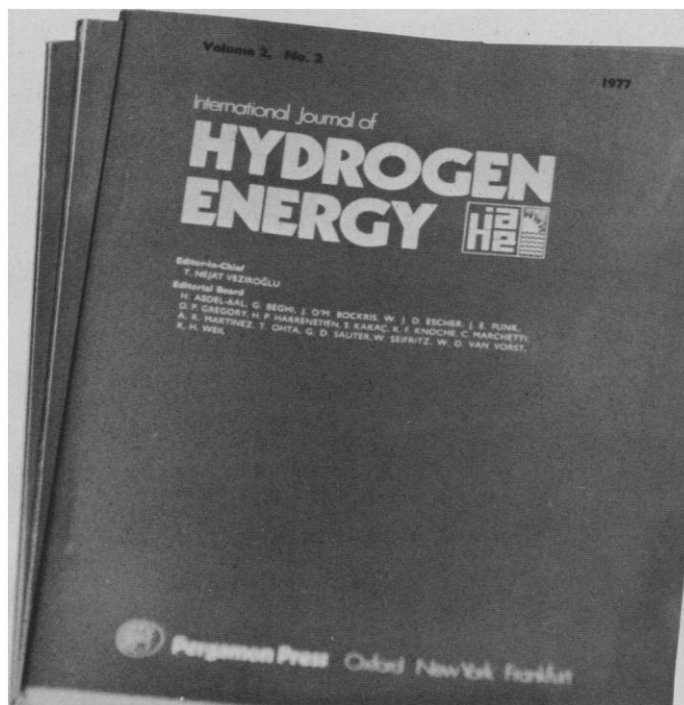


It fosters the development of undepletable and environmentally clean primary energy sources such as SOLAR energy, as a means of extracting hydrogen from WATER.



It strives to advance the day when HYDROGEN ENERGY will become a principal means by which the world will achieve its long-sought goal of Abundant Clean Energy for Mankind.

The officers of the Association are: T. Nejat Veziroglu, President, Leonard J. Emmerglick, Legal Counselor; Carol Pascalis, Treasurer; and William J.D. Escher, Secretary. The members of the Board of Directors are as follows: H.K. Abdel-Aal, Saudi Arabia; John O'M. Bockris, Australia; Valeriy A. Legasov, U.S.S.R., Cesare Marchetti, Austria; Anibal R. Martinez, Venezuela; Tokio Ohta, Japan; Walter Seifritz, Switzerland; William D. Van Vorst, United States; and Kurt H. Weil, United States.



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The Association has three classes of membership:

- MEMBERS are professional persons who are active in fields relating to some aspect of hydrogen energy.
 - ASSOCIATE MEMBERS are laypersons, students and others who may wish to promote this cause.
 - INSTITUTIONAL MEMBERS are organizations who are involved in or wish to relate themselves to the field of hydrogen energy.
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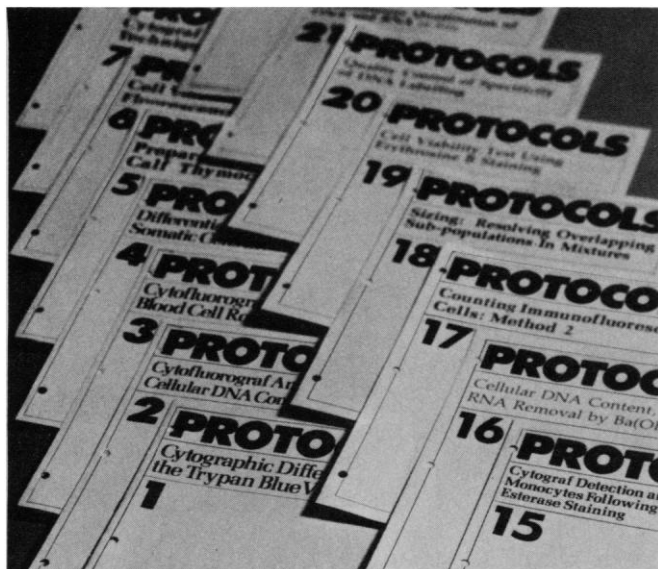
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COVER

Adult albino rabbits—small Polish (left) and large New Zealand White. These animals have erroneous visuo-oculomotor connections from the posterior retina, with inverted optokinetic reactions in the anterior sector of the visual field. See page 1351. [D. Attinger, Erasmus University, Rotterdam, The Netherlands]

The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.



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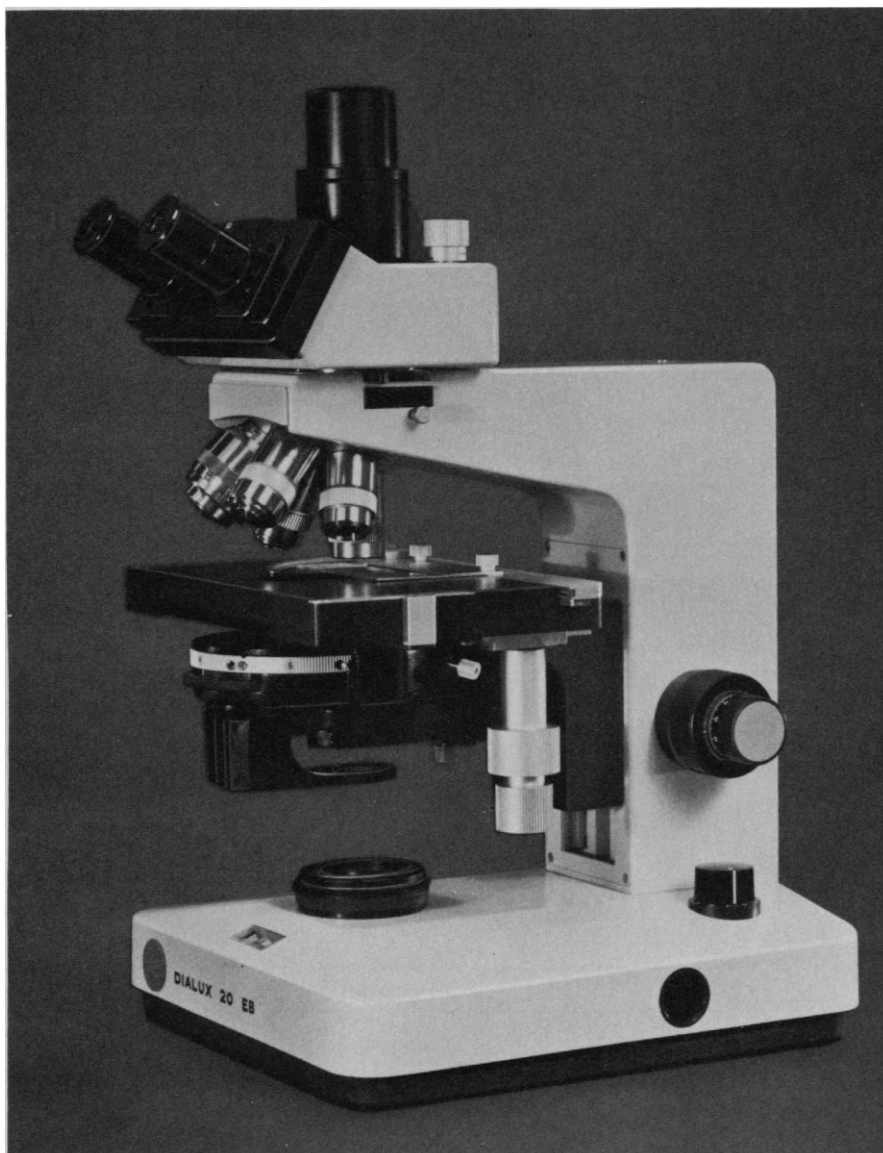
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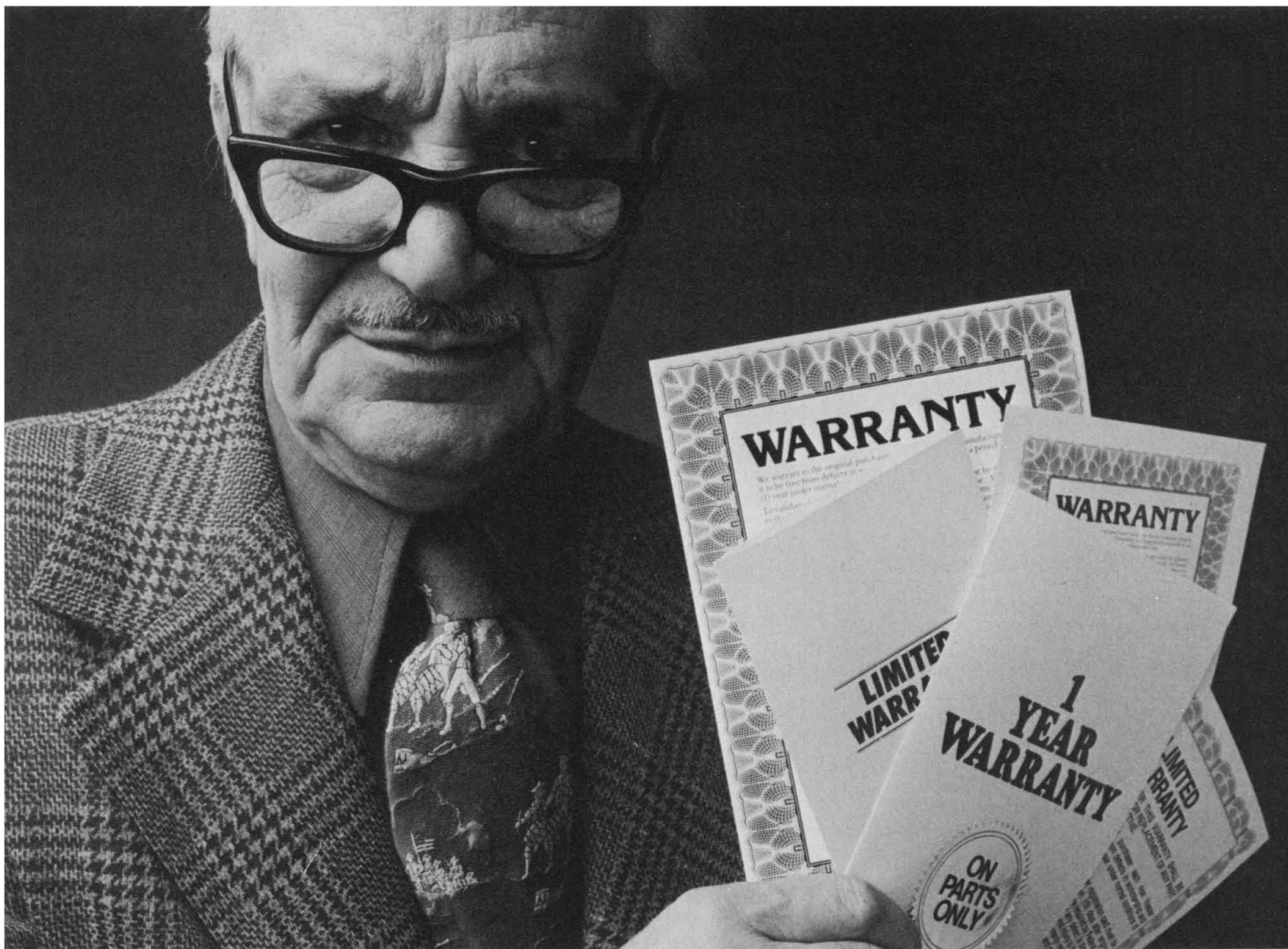
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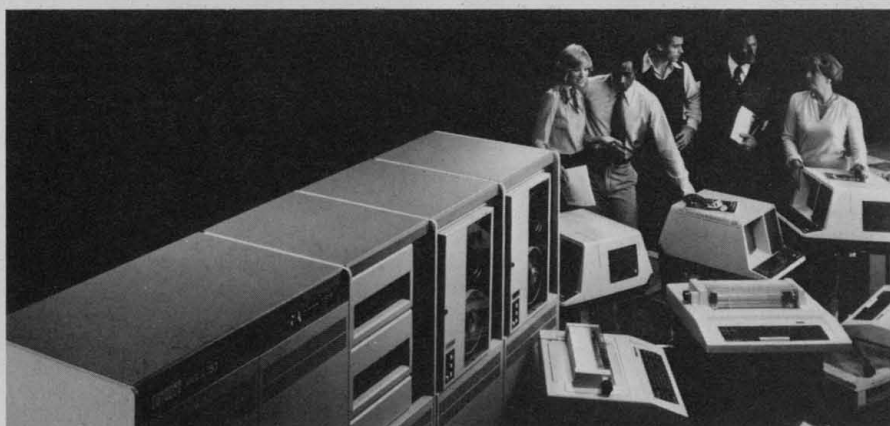
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VAX PRICE-PERFORMANCE MAY MAKE IT THE BEST FORTRAN NUMBER-CRUNCHER EVER BUILT.

Benchmark after benchmark is showing the new VAX-11/780 to be the hottest FORTRAN machine ever made.

Benchmarks for VAX double precision are at 711K Whetstone instructions per second. Single precision benchmarks are at over a million. Running all kinds of programs, including some in the tens of megabytes, VAX tested twice as fast as another prominent FORTRAN machine, and it costs about one-tenth! Another tester describes VAX

as one-twentieth the speed of a CDC-7600 — but *one-fiftieth* the price!

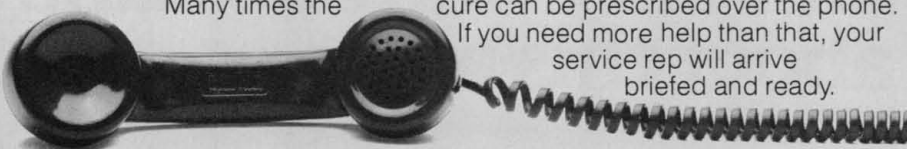
VAX handles real-time applications in incredibly fast compute time. The VAX instruction set, the floating point performance, the same UNIBUS as the PDP-11, more bandwidth than anybody needs, fast priority scheduling, and its interrupt-response capabilities make it a real-time superstar.

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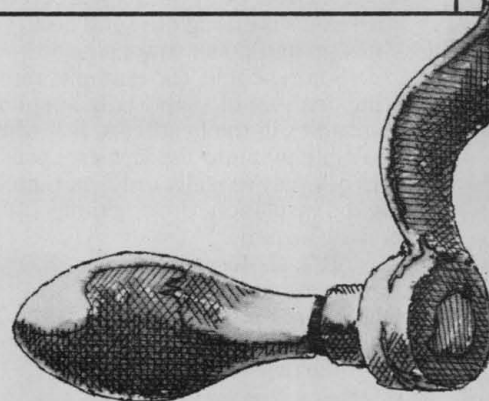
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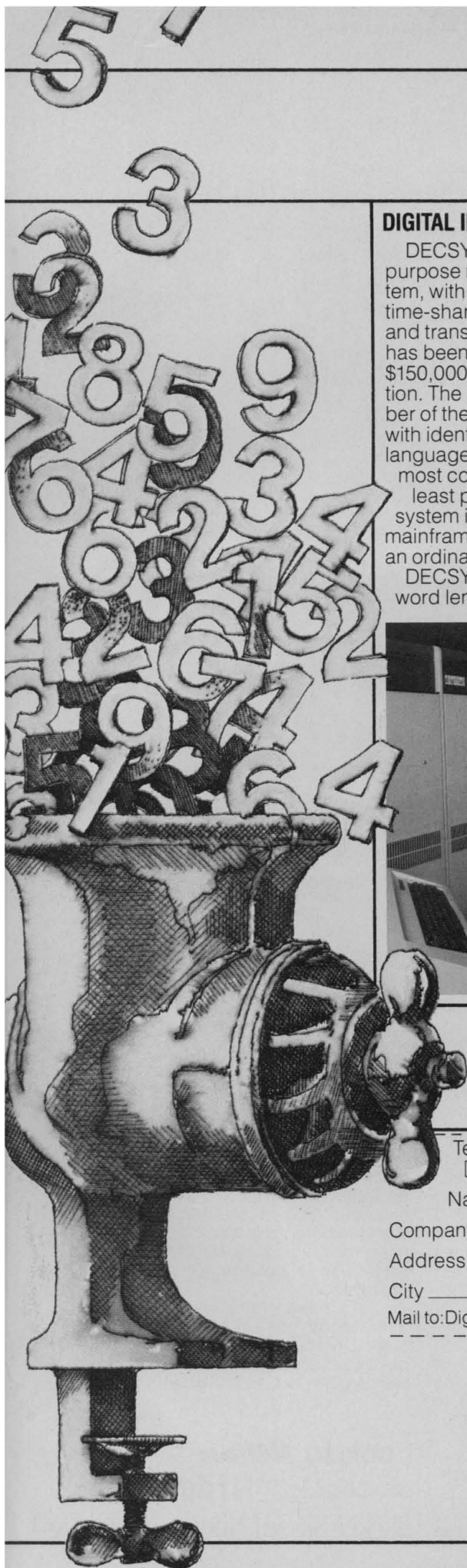
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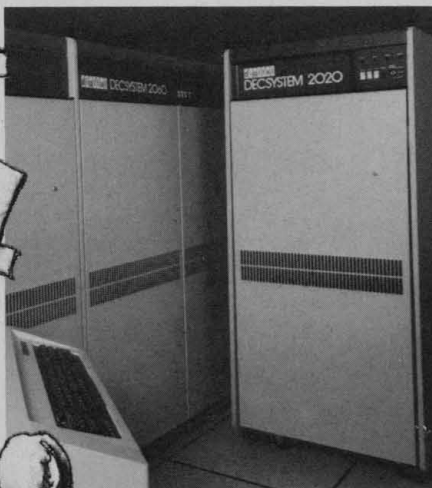
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DECSYSTEM-2020 features 36 bit word length, MOS memory in 64K

word units to a total of 512K words, 1.05 microsecond cycle time, single-bit error correction, double bit error detection, low power Schottkey TTLs, 512 word virtual address cache memory, microprocessor-driven console, microprogrammed central processor, 2K (96-bit) word writable RAM microstore, basic micro-instruction cycle time of 300 nanoseconds.

Also, 67 megabyte disk system minimum, expandable to 1.4 billion bytes, UNIBUS compatibility with peripherals, 8 asynchronous communication lines, expandable to 32. Mainframe housing 5 feet high by three feet wide.



HIGH END DECSYSTEM-2060 EXTENDS FAMILY LINE.

Digital has introduced a new mainframe at the high end of the DECSYSTEM-20 line. Called the DECSYSTEM-2060, the new mainframe has an advanced version of the KL central processing system used on the previous high end DECSYSTEM-20s, but offers twice the memory capacity of previous systems.

The DECSYSTEM-2060 has more terminal capacity, and more disk capacity than any previous system in the family. Its minimum configuration sells for \$600,000. Check the coupon for details.

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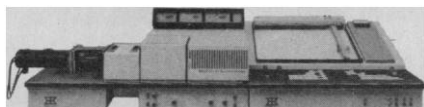
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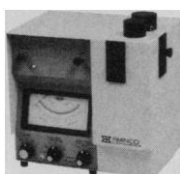
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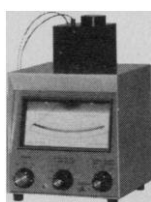
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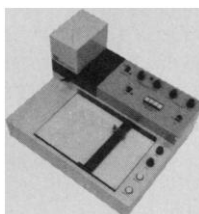
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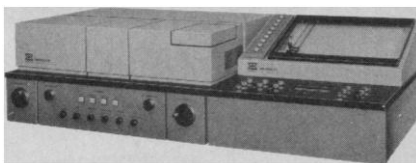


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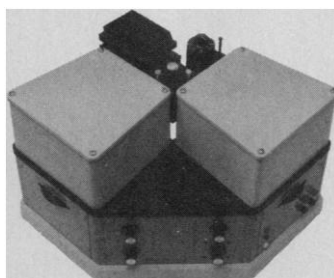
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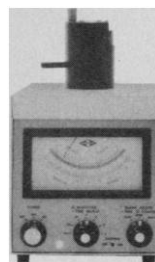
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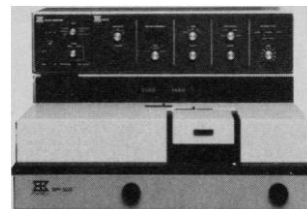
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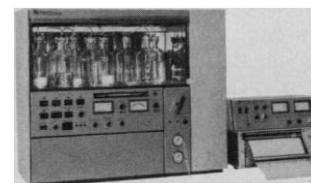
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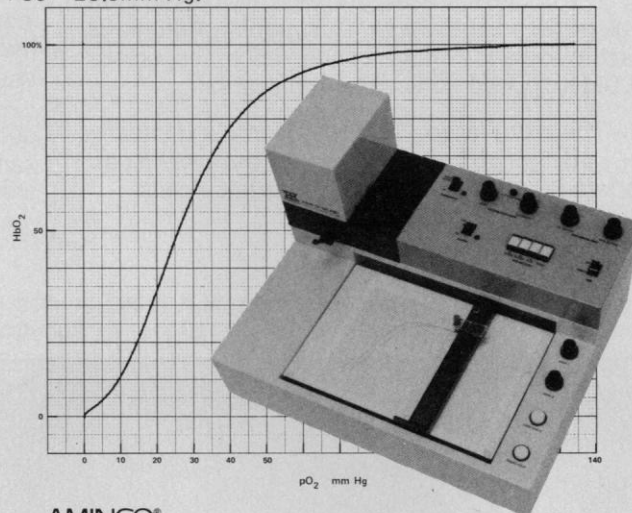
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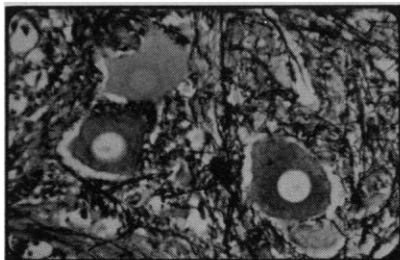
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Below: Hemoglobin-oxygen equilibrium curve of normal human blood at 37°C and pCO₂ of 40mm Hg showing a P50 = 26.0mm Hg.



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Photomicrograph, brain section, neurons.

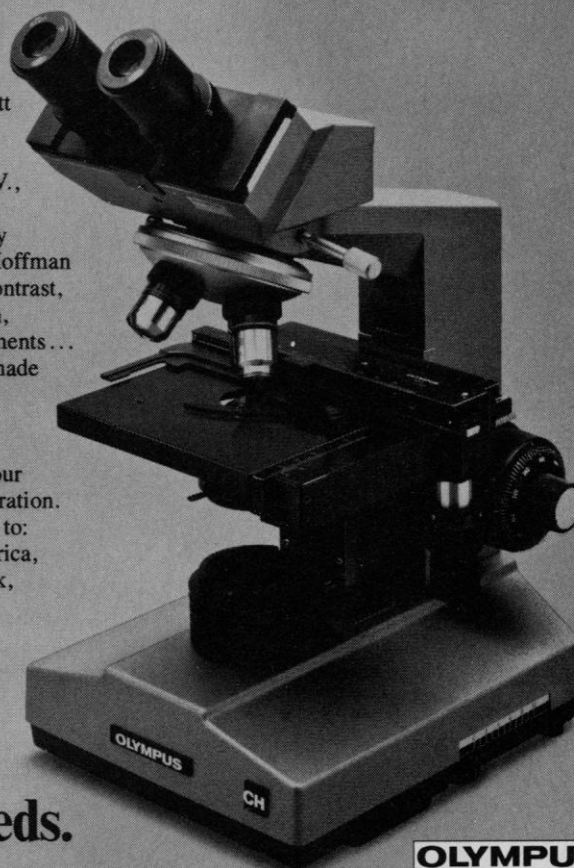
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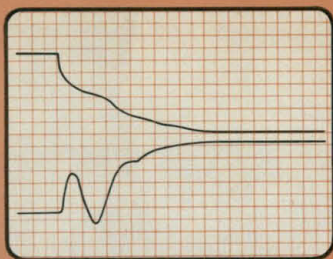
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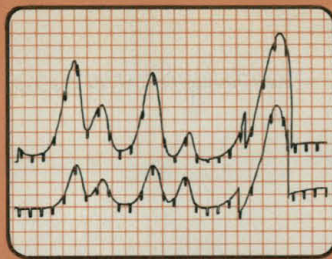
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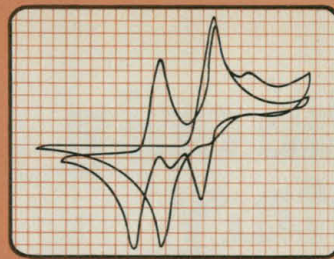




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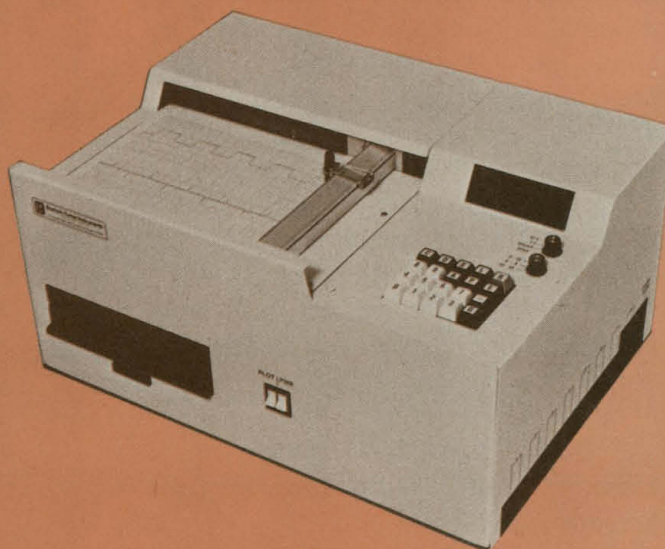
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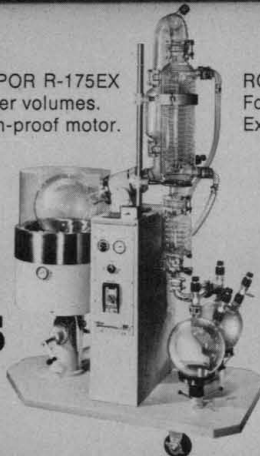
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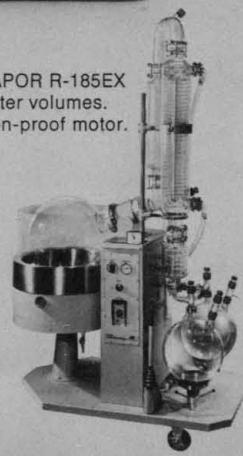
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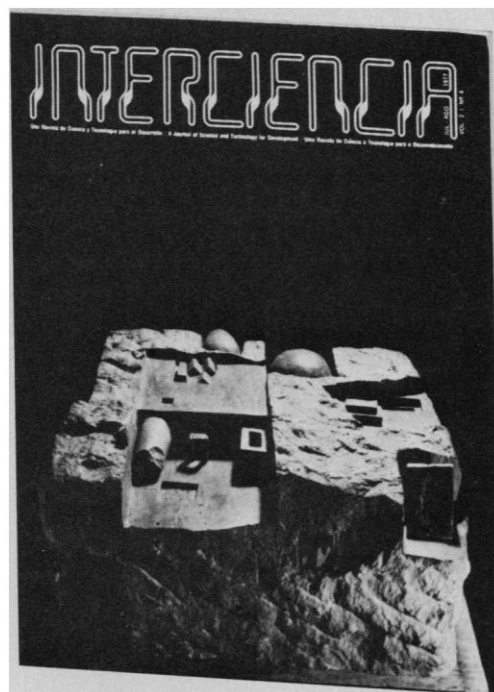
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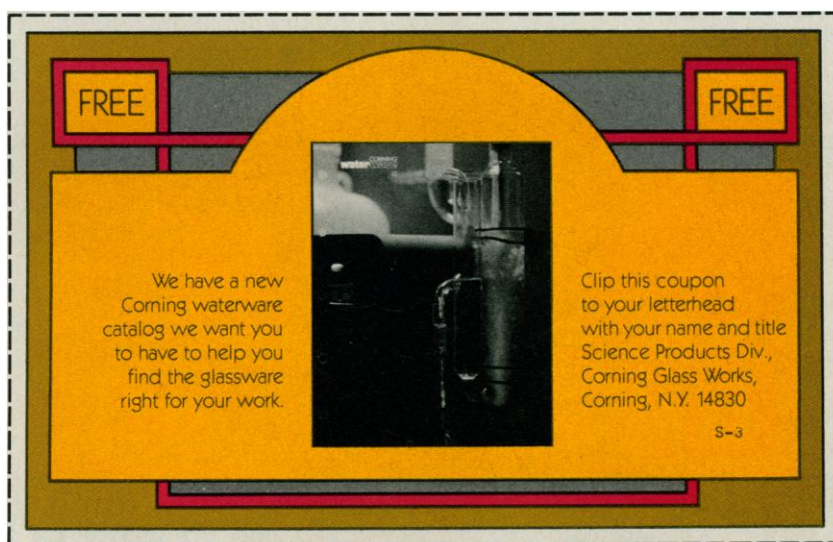
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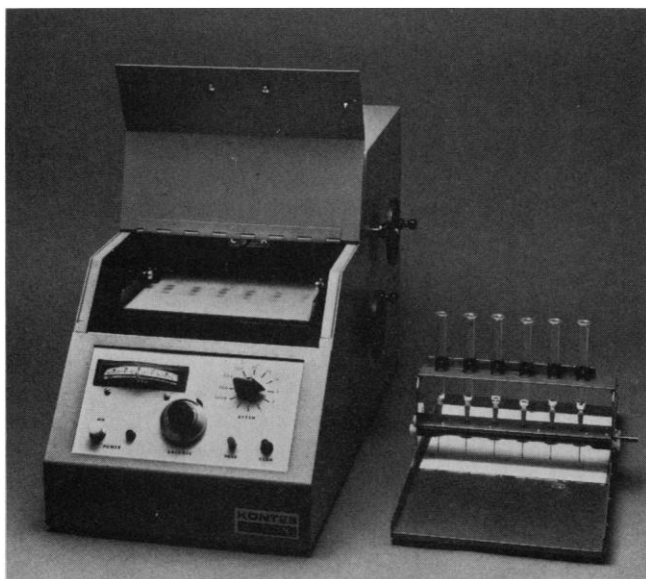
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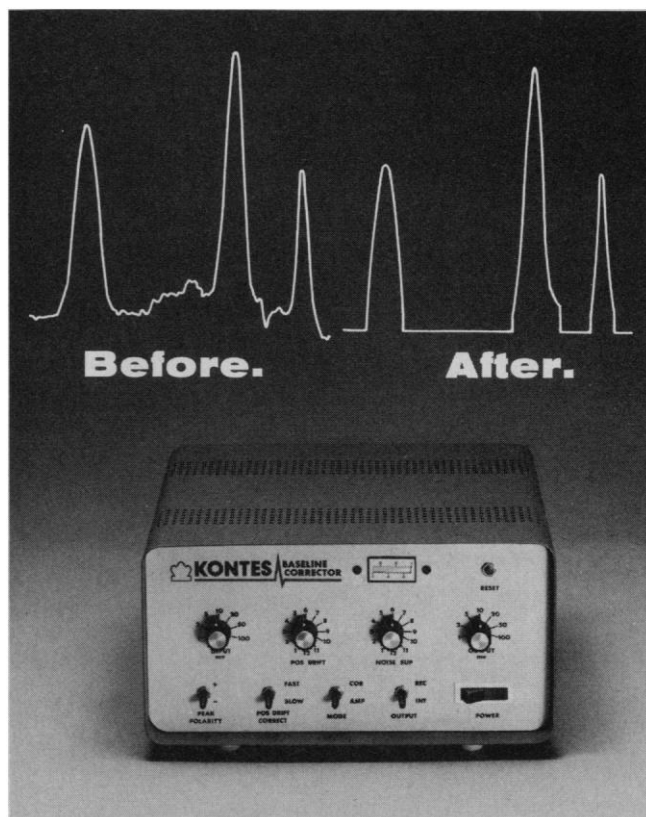
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1. *U.S. Patents 3,562,539 and 3,924,948. "Determination of Reflectance of Pesticide Spots on Thin-Layer Chromatograms, Using Fiber Optics", Morton Beroza, K. R. Hill, Karl H. Norris, ANALYTICAL CHEMISTRY, September 1968.
2. **An automatic spotter for quantitative thin layer and paper chromatographic analysis by optical scanning", Melvin E. Getz, Journal of the AOAC, Volume 54, No. 4, 1971. **U.S. Patent 3,843,053

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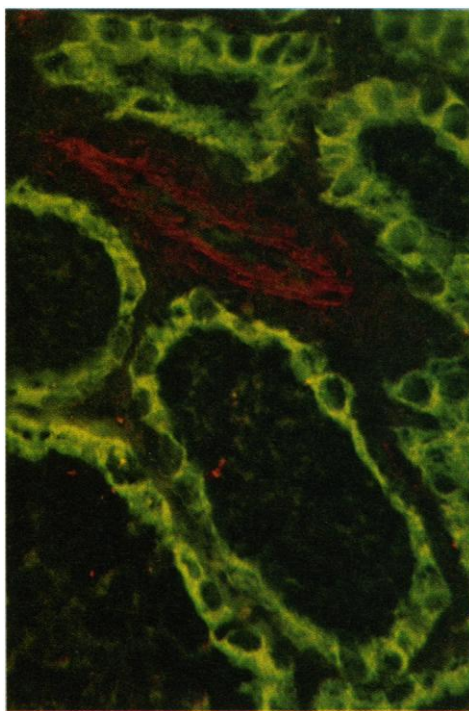
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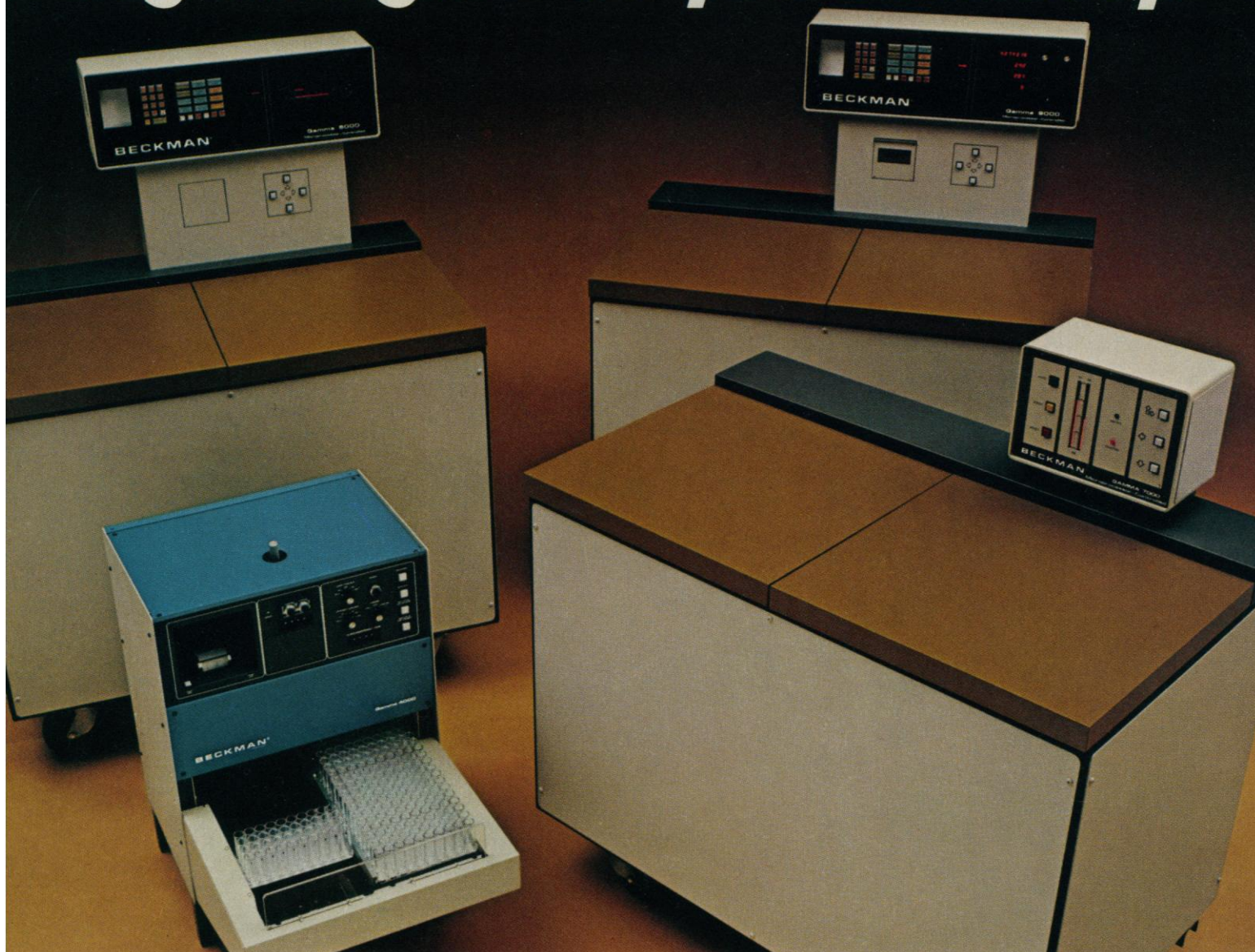
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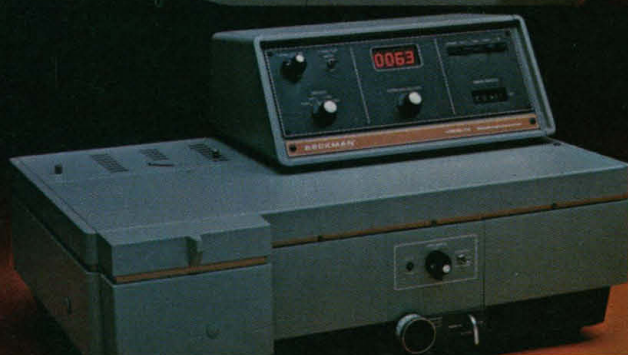
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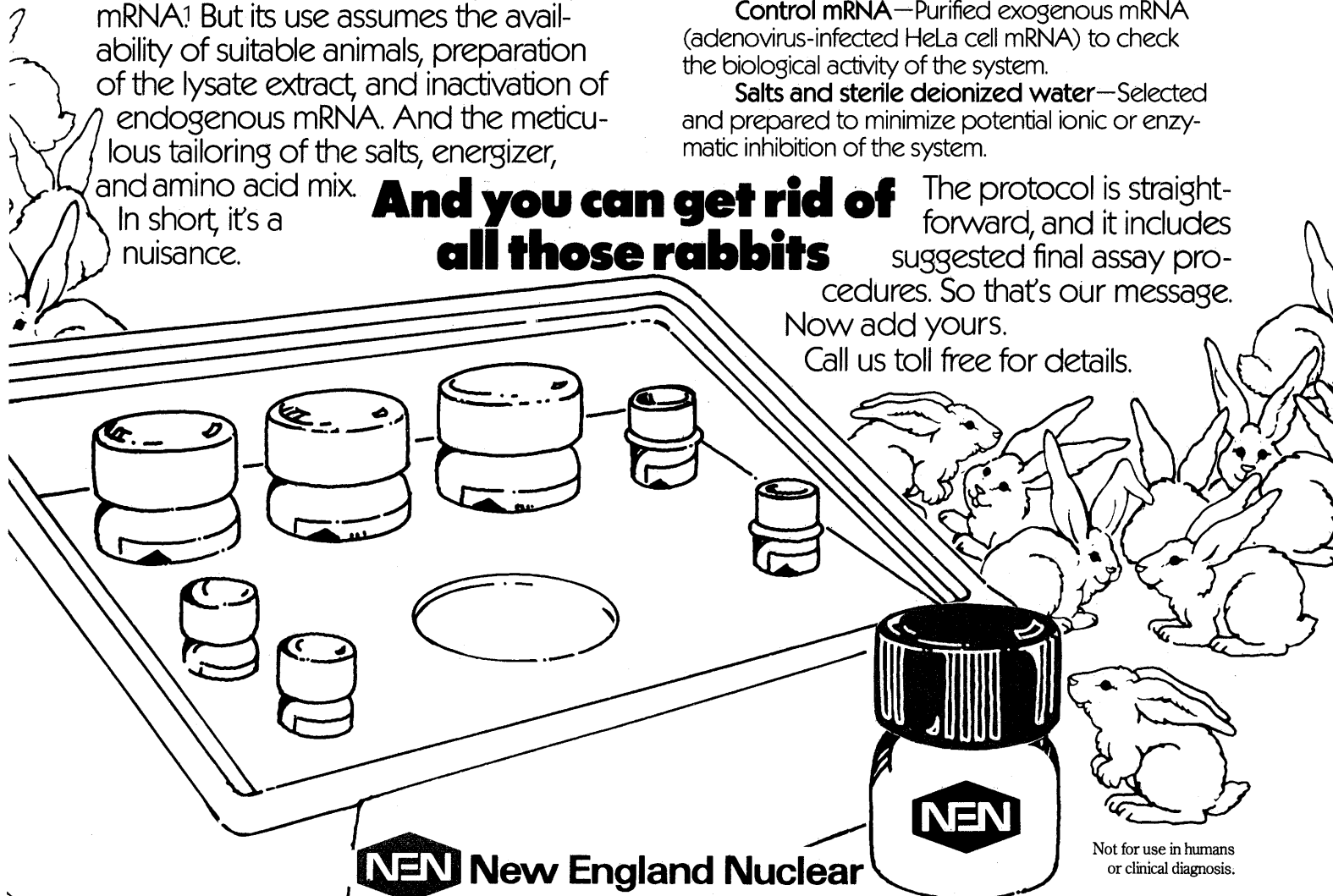
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¹Lodish, HF, Ann Rev Biochem, 45, 39 (1976)

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um beam might be undergoing neutralization by some unknown process. This finding encouraged our subsequent intensive work on the electromagnetic method.

By the summer of 1942 we had moved our work to the new, larger magnet that had been intended for the 184-inch cyclotron. There we were able to try out much larger spectrographs, which were more nearly of practical size for a full-scale plant.

Unfortunately, the space charge was not neutralized under all operating conditions. We studied elusive neutralization phenomenon ad nauseum, and it often seemed that we would have to abandon the whole method.

The space-charge problem was more serious with the larger machines, but ultimately we learned the sensitive operating conditions required for its neutralization. Although the major features of the neutralization mechanism were explained, some details apparently remain obscure even today (2).

In February 1972, I lectured in Munich about my own experiences on the Manhattan Project, including a discussion of the space-charge problem. Afterward, H. Morinaga mentioned to me that the Japanese physicists abandoned efforts to separate uranium-235 by the electromagnetic method because they anticipated the space-charge problem. It was the first time I was aware of any project in Japan, but it did not surprise me.

Shapley states that "Takeuchi . . . gave up on electromagnetic separation because he couldn't have Miyamoto around to help." It seems more likely, in view of Morinaga's remark to me, that it was at the "Physics Colloquium" in 1942-43 that theoretical calculations on space-charge effects arrested any serious Japanese attempts at electromagnetic separation. The Germans in their project were also discouraged from attempting electromagnetic separation by space charge (3).

It was Ernest Lawrence's conviction that the electromagnetic method could be made to work which helped carry the project to success. Although the gaseous diffusion method ultimately proved very much superior for separating uranium isotopes, it played very little role in World War II.

Today, a large fraction of the world's separated stable isotopes for research are produced in the still-remaining portion of the Calutron mass spectrographs. But, as pointed out by L. O. Love (2), space-charge "blowup" occasionally is still a plague to proper beam separation.

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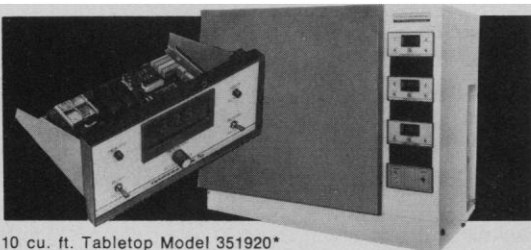
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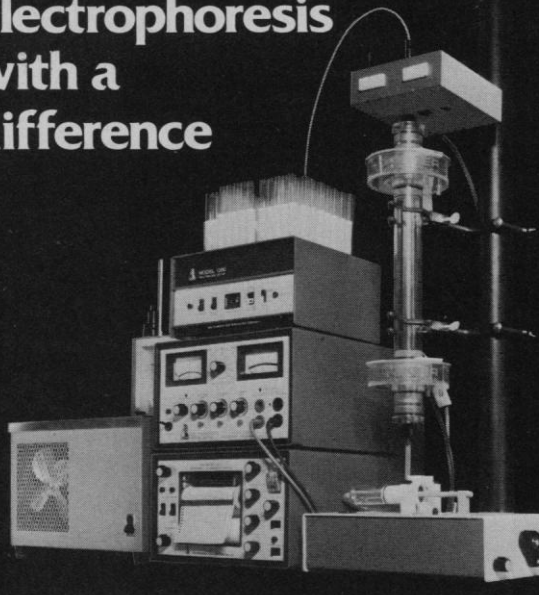


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to whether the bombing of Hiroshima was necessary for hastening the end of the war, it would be hard to contest that today a tribute is due the Japanese for their museum in Hiroshima, whose message is clear: There should never again be atomic bombing, or for that matter, any other kind of bombing.

F. H. SCHMIDT

Department of Physics, University of
Washington, Seattle 98195

References and Notes

1. R. G. Hewlett and O. E. Anderson, Jr., *The New World* (Univ. of Pennsylvania Press, Philadelphia, 1962), see particularly p. 374. Reprinted as *USAE Rep. WASH 1214* (1972).
2. L. O. Love, *Science* **182**, 343 (1973).
3. D. Irving, *The German Atomic Bomb* (Simon & Schuster, New York, 1967).

Energy Facility Siting

The California Coastal Commission is attempting to solve the kind of agonizing problems associated with coastal energy facility siting that are raised by Luther J. Carter in his article on the Hampton Roads Energy Company refinery and oil terminal proposed for Virginia's Elizabeth River (News and Comment, 10 Feb., p. 668). The California gas utilities have been seeking approvals for a liquefied natural gas (LNG) terminal site on the coast for 4 years. Confidence in the utilities' site selection has been low because they originally chose a site in Los Angeles Harbor, near a major earthquake fault. Their current choice, a remote area on the western end of the Santa Barbara Channel near rich kelp beds, expensive ranches, and excellent surfing spots, has aroused intense opposition. Frustrated with the uncoordinated permit processes and suspicious of the companies' site selections, the California legislature has required the Coastal Commission to determine the least objectionable site for an LNG terminal.

This is an uncomfortable technical role for a coastal management and land use planning agency. The commission has evaluated 82 possible sites. The public nominated 16 of them. Woodward and Clyde geotechnical consultants, H. J. Degenkolb and Associates structural engineers, and John J. McMullen Associates maritime consultants assisted the commission in evaluating the sites, and, after a public hearing, the commission eliminated 77 of the sites and retained five for a final ranking (1). The California Liquefied Natural Gas Terminal Act of 1977 requires the commission to base this site ranking primarily on protection of coastal resources, but the costs of the

ranked sites must be reasonable. This site selection process is completely open. The gas utilities are major participants in the process, but so are the Sierra Club, the Western Surfing Association, and property owners near the five candidate sites.

This is an experiment worth watching. The final site ranking must be submitted to the California Public Utilities Commission by 31 May 1978, and that commission determines whether the terminal is needed and whether to approve it at the site ranked number one by the Coastal Commission. Carter asks, "Is there no better way by which sites for refineries and other major energy facilities could be selected and approved?" Perhaps there is, but this LNG terminal siting exercise may alienate natural supporters of the Coastal Commission, because it has an active role in siting a facility with unavoidable, large, and adverse coastal impacts. In addition, the commission will be in that uncomfortable position heretofore reserved for energy companies, when a site is selected and a few years later an unknown earthquake fault is found nearby or a massive oil spill occurs, threatening valuable coastal resources, hundreds of millions of dollars of investment, and the agency's credibility and confidence (2).

WILLIAM R. AHERN

California Coastal Commission,
631 Howard Street,
San Francisco 94105

References

1. California Coastal Commission, "Preliminary and final staff recommendations on proposed liquefied natural gas terminal sites to be retained for further study and ranking" (San Francisco, 11 January 1978 and 26 January 1978).
2. W. R. Ahern, in *Proceedings of the Symposium on Technical, Environmental, Socioeconomic and Regulatory Aspects of Coastal Zone Management* (American Society of Civil Engineers, New York, 1978).

Coal Liquefaction: Cost Estimates

Lest your readers think pioneer coal liquefaction plants are a bargain, I should note that the estimated cost for a pioneer coal liquefaction plant capable of processing 10,000 tons of coal per day, as given in my article "Liquid fuels from coal: From R & D to an industry" (10 Feb., p. 621), is a misprint. Current estimates are around \$750 million (1976 dollars), not \$75 million.

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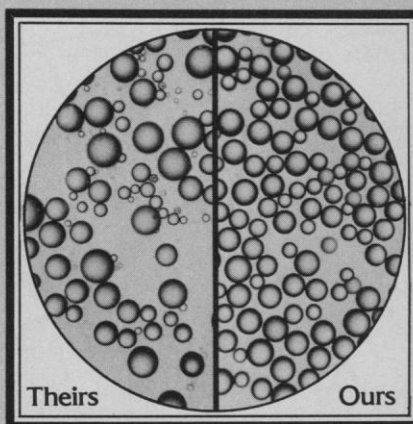
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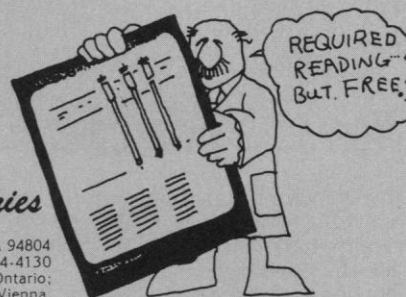
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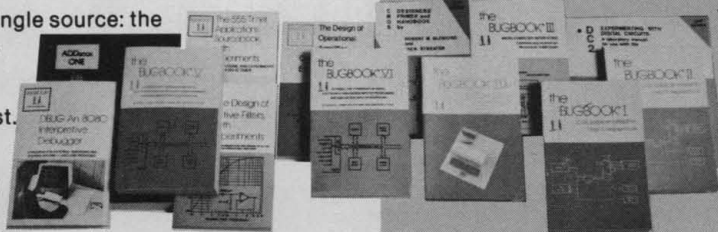
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Tenure: A Sacred Cow?

There is probably no other profession in which an incompetent or thoroughly lazy individual is as securely protected against dismissal as the academic one. Yet extreme cases of such incompetence are so demoralizing, to colleagues and students alike, that calls for the abolition of tenure are made with increasing frequency. Giving in to these demands, however, would be like throwing out the baby with the bathwater. It would entail the end of academic freedom because putative incompetence would be used as an excuse for firing professors for political or ideological reasons. It would take us back to the situation of more than 50 years ago when professors at many denominational, private, and state schools had an exceedingly precarious hold.

Is there any escape from this dilemma? Yes, by adopting a system of tenure review. Let us say, a departmental committee would recommend annually the renewal of tenure of the members of the department who had last been reviewed not less than five or more than ten years before. The committee would recommend renewal of tenure for all those who had earned such a recommendation by the quality of their teaching and research or by other achievements. Any case in which the committee had serious doubts (perhaps one out of 20) would be referred to the administration, which would then appoint an ad hoc committee of peers from other institutions that would make a final recommendation to be acted on by the president of the university.

The president of a well-known university is reported to have said that he was in favor of tenure review, but that an annual review system was too costly. He would be entirely right, of course, if each faculty member were to be reviewed annually. But reviews at 10-year intervals would not be too great a burden when only those few cases reached the administration in which there was legitimate doubt about tenure renewal. By comparison, an incompetent faculty member is much more costly.

Would such a system work? Not perfectly, but what system ever does? Occasionally a department might shield a colleague even though he was incompetent. Still, the majority of the drones would have to be screened by the review system. More importantly, the mere fact that tenure had to be earned again at 10-year intervals would be enough to make most of those with a tendency to be lazy pull themselves together instead of becoming a burden to their department.

But there is another reason for tightening up on tenure. Our colleges and universities are turning out more graduates and Ph.D.'s than the job market can absorb. We must face the reality that the effects of the postwar baby boom are over. Colleges are no longer expanding, and indeed in many areas they are contracting. Matters will be made worse if proposals to raise the retirement age above 65 are implemented, for this will further retard the opening of positions for recent graduates. Under the circumstances, every effort must be made to provide every conceivable opening for recent graduates. It is a matter of simple justice not to keep positions filled with incompetents when excellently qualified eager young academicians are jobless.

Nor should we overlook how demoralizing it is for students and colleagues when a department has a professor who, relying on tenure protection, has long given up making any contribution. A system, such as our present one, which permits this, is inconsistent with academic integrity. —ERNST MAYR, *Agassiz Museum, Harvard University, Cambridge, Massachusetts 02138*



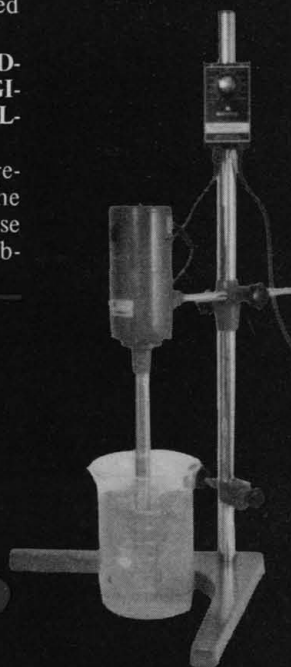
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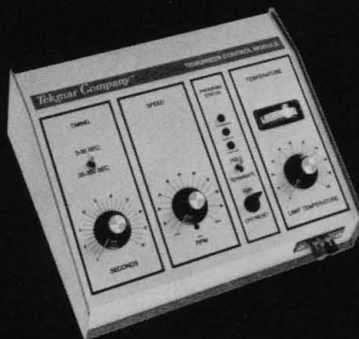


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to extract eggs via a thin cannula inserted into the uterus through the navel. Then, by an undisclosed means, the nucleus of each tiny, fragile human egg was removed, to be replaced by a process of cell fusion with the nucleus of a cell—possibly a testicular cell—from the millionaire “father,” code-name—“Max.” (Technically, Max would be the child’s twin, separated in time, not its father.) Rorvik claims that the cloning was successful, that an egg began to divide and grow until it was large enough (at least 64 cells) to be implanted in the uterus of the surrogate mother, who is called “Sparrow.” (Rorvik named the doctor on the cloning team “Darwin.”) The birth reportedly took place in December 1976. Max, Sparrow, and the cloned baby are said to be together, and Rorvik reports, “I have seen the child since his birth. He is alive, healthy, and loved today.” (If millionaire and child exist, their genetic identity could well be proved by available tests that number more than 50.)

If *In His Image* were being published as fiction, or even as “docu-drama” which is currently in vogue, it probably would not have stirred such interest. But it is being published as unverifiable truth; as such, it raises a number of serious questions. Why, for instance, would Lippincott, an old-line, conservative house with a solid reputation in the medical book and journal business, risk its reputation with what could well be a hoax? Other houses previously had said “No.” Simon & Schuster, among those to turn it down, went so far as to explain that the editorial board rejected it “. . . because the writer did not offer, and would not present or promise, documentation of his assertions.” *Newsweek* refused serial rights on the same grounds. But Lippincott decided to go ahead because “The book he [Rorvik] proposed to write would inevitably arouse much controversy, but would explore scientific, social, moral and religious issues of great import. We believed he would treat these issues in a revealing, responsible manner,” Lippincott senior vice-president Edward L. Burlingame said in a statement. According to the publisher, “*In His Image* is being published as non-fiction on the strength of Mr. Rorvik’s credentials.”

Which leads one to ask, Who is David Rorvik? A native of Montana, he graduated from the University of Montana in 1966 and went on to get a master’s degree from the Columbia University School of Journalism. He worked for a couple of years in the 1960’s as a medical reporter for *Time* and then turned to

free-lance writing. He is the author of *Brave New Baby*, a discussion of the perils of what is loosely called “genetic engineering,” and coauthor with Landrum B. Shettles of *Your Baby’s Sex: Now You Can Choose*, a book about Shettles’ highly disputed theory that the sex of a baby can be predetermined by the timing of intercourse. Other Rorvik pieces on the “genetic engineering” theme include “The Embryo Sweepstakes,” published in the *New York Times* [Sunday] *Magazine* of 15 September 1974, a serious article about the scientific possibilities and ethical considerations that surround laboratory manipulation of reproduction. “The winner [of the embryo sweepstakes],” Rorvik predicted, “will be a brave new baby conceived in a test-tube and then planted in a womb.”

In 1975, Rorvik was awarded a journalism fellowship by the Alicia Patterson Foundation to investigate the politics of cancer research. He focused on laetrile. An individual at the Patterson Foundation called Rorvik a “crusader,” but a “very meticulous” writer.

Whether his credentials will turn out to be strong enough to justify Lippincott’s faith that he is telling the truth about the first human clone remains to be seen, but early indications are that, if money is what publisher and author are after, they will be rewarded. The Literary Guild will offer *In His Image* as an alternative selection, and paperback rights are expected to go for at least a quarter of a million dollars.

Although *In His Image* may prove to be a money-maker for Lippincott there is

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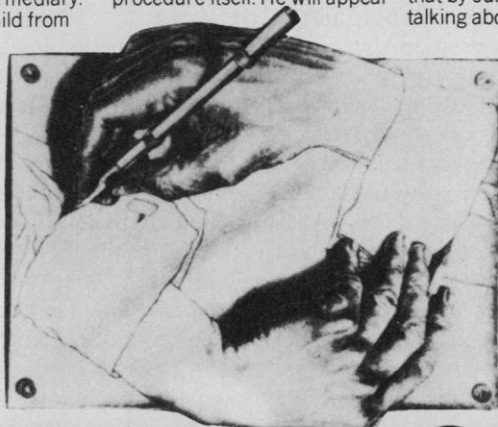
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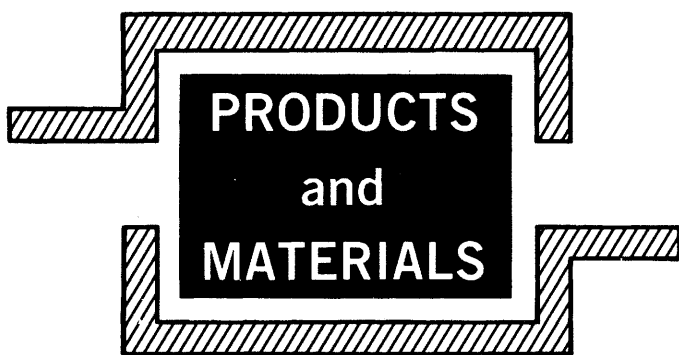


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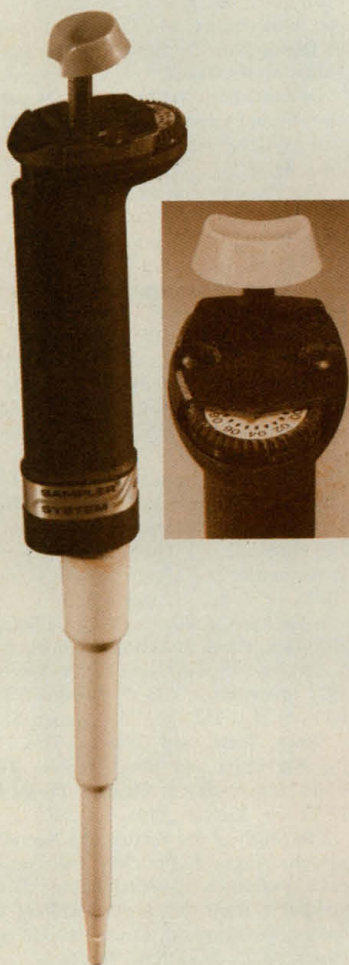
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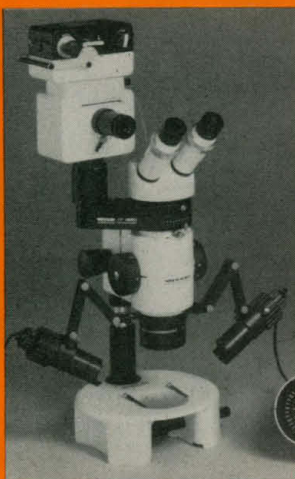


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BOOKS RECEIVED

(Continued from page 1332)

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Essential Immunology. Ivan M. Roitt. Blackwell, Oxford, England, ed. 3, 1977 (U.S. distributor, Lippincott, Philadelphia). xii, 324 pp., illus. Paper, \$9.95.

The First Relationship. Mother and Infant. Daniel Stern. Harvard University Press, Cambridge, Mass., 1977. x, 150 pp., illus. Cloth, \$7.95; paper, \$3.95.

Genes in Populations. Eliot B. Spiess. Wiley, New York, 1977. xiv, 780 pp., illus. \$19.95.

Handbook of Mutagenicity Test Procedures. B. J. Kilbey, M. Legator, W. Nichols, and C. Ramel, Eds. Elsevier, New York, 1977. xiv, 486 pp., illus. \$59.95.

Handbook of Studies on Depression. Graham D. Burrows, Ed. Excerpta Medica, Amsterdam, 1977 (U.S. distributor, Elsevier/North-Holland, New York). xiv, 434 pp., illus. \$68.95.

Heat and Mass Transfer Sourcebook. Papers from a conference, Minsk, Soviet Union, May 1976. Mikhail A. Styrikovich, Algirdas A. Zukauskas, James P. Hartnett, and Thomas F. Irvine, Jr., Eds. Translated from the Russian. Scripta, Washington, D.C., and Halsted (Wiley), New York, 1977. viii, 480 pp., illus. \$37.50.

The History of Meteorology: to 1800. H. Howard Frisinger. Science History Publications (Neale Watson), New York, 1977. xii, 148 pp., illus. \$15. American Meteorological Society Historical Monograph Series.

A History of the Great Trains. Chris Cook. Harcourt Brace Jovanovich, New York, 1977. 144 pp., illus. \$14.95.

Lobbying for the People. The Political Behavior of Public Interest Groups. Jeffrey M. Berry. Princeton University Press, Princeton, N.J., 1977. xii, 332 pp. \$20.

Meetings with Pasternak. A Memoir by Alexander Gladkov. Translated from the Russian edition (Paris, 1973) by Max Hayward. Harcourt Brace Jovanovich, New York, 1977. 224 pp. \$8.95. A Helen and Kurt Wolf Book.

Membranous Elements and Movement of Molecules. Eric Reid, Ed. Horwood, Chichester, England, and Halsted (Wiley), New York, 1977. xii, 412 pp., illus. \$45. Methodological Surveys in Biochemistry, vol. 6.

The Nematode-Destroying Fungi. G. L. Barron. Canadian Biological Publications, Guelph, Ontario, 1977. 140 pp., illus. Paper, \$12.50. Topics in Mycobiology, No. 1.

Numerical Methods for Engineers and Scientists. A Students' Course Book. A. C. Bajpai, I. M. Calus, and J. A. Fairley. Wiley, New York, 1977. xii, 380 pp., illus. Paper, \$10.95. A Series of Programmes on Mathematics for Engineers and Scientists.

The Nutrition Cookbook. A Guide to Healthy Family Food with Gourmet Recipes Computer Analyzed for Your Specific Daily Requirements. Stephen N. Kreitzman and Susan L. Kreitzman. Harcourt Brace Jovanovich, New York, 1977. x, 500 pp. \$12.95.

Nutritional Aspects of Fats. Papers from a symposium, Paris. J. C. Somogyi and A. François, Eds. Karger, Basel, 1977. viii, 200 pp., illus. Paper, \$47.75. Bibliotheca Nutrition et Dieta, No. 25. Series of the Institute for Nutrition Research, vol. 25.

Optimization Methods in Operations Research and Systems Analysis. K. V. Mital. Halsted (Wiley), New York, 1977. xiv, 260 pp., illus. \$9.75.

The Phenomenon of Science. V. F. Turchin. Translated from the Russian by Brand Frenzt. Columbia University Press, New York, 1977. xx, 348 pp. \$17.50.

Piagetian Psychology. Cross-Cultural Contributions. Pierre R. Dasen, Ed. Gardner Press, New York, 1977 (distributor, Halsted [Wiley], New York). xvi, 380 pp. \$18.95.

Self-Fulfilling Prophecies. Social, Psychological, and Physiological Effects of Expectancies. Russell A. Jones. Erlbaum, Hillsdale, N.J., 1977 (distributor, Halsted [Wiley], New York). xii, 276 pp. \$14.95.

Social Comparison Processes. Theoretical and Empirical Perspectives. Jerry M. Suls and Richard L. Miller, Eds. Hemisphere, Washington, D.C., and Halsted (Wiley), New York, 1977. xii, 372 pp. \$23.50.

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Space, Time, and Gravity. The Theory of the Big Bang and Black Holes. Robert M. Wald. University of Chicago Press, Chicago, 1977. viii, 132 pp., illus. \$10.95.

The Study of the Future. An Agenda for Research. Wayne I. Boucher, Ed. National Science Foundation, Washington, D.C., 1977 (available from the Superintendent of Documents, Washington, D.C.). x, 316 pp., illus. Paper, \$4.75. NSF/RA-770036.



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