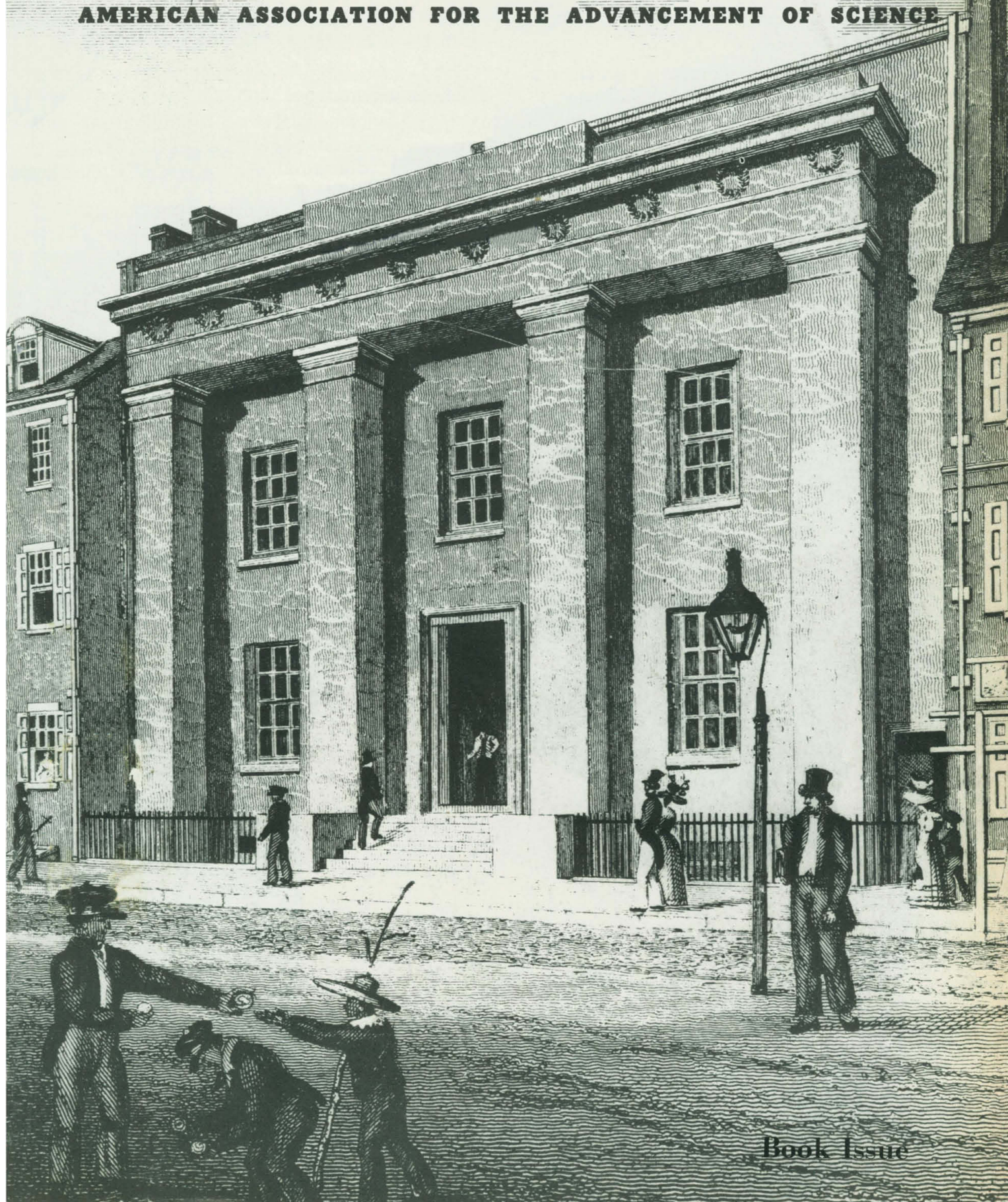


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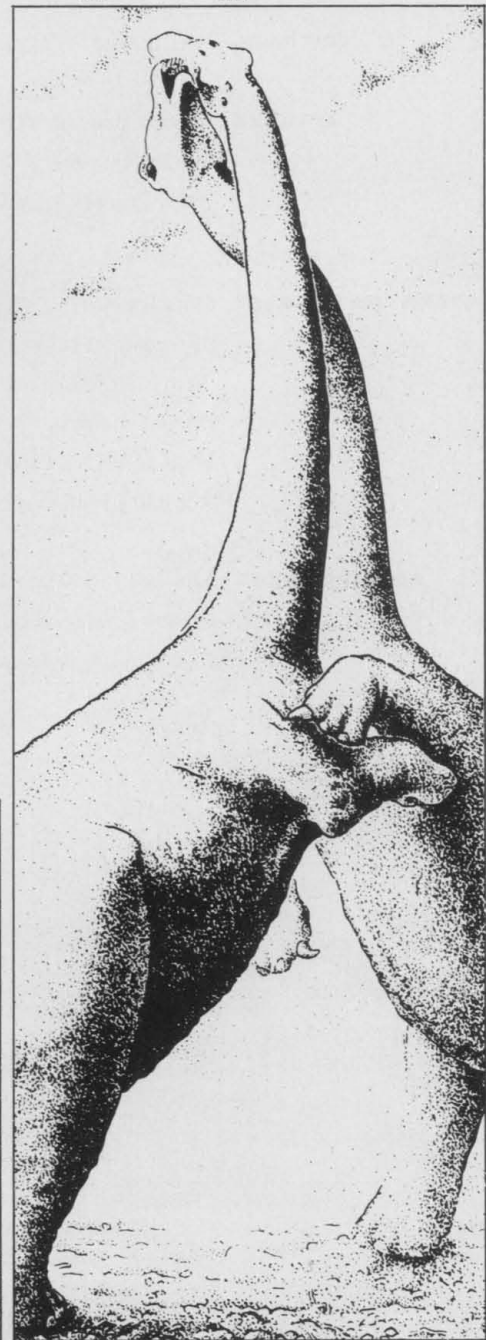
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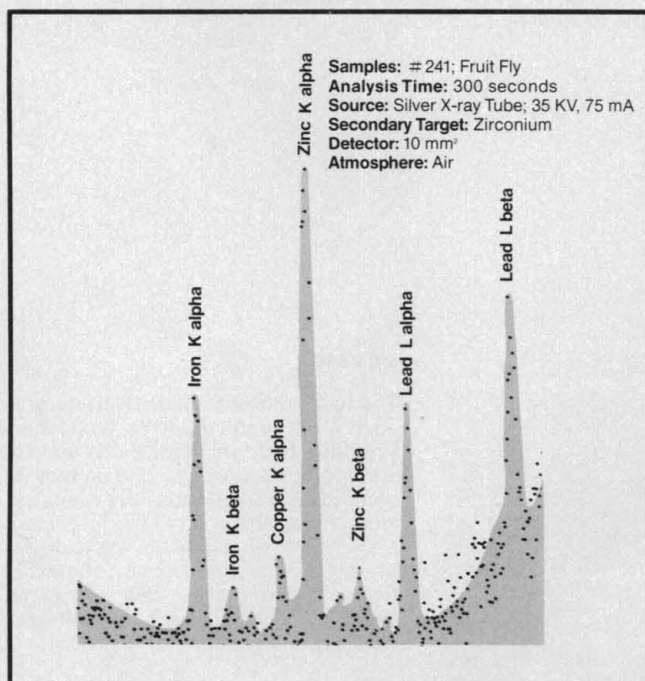
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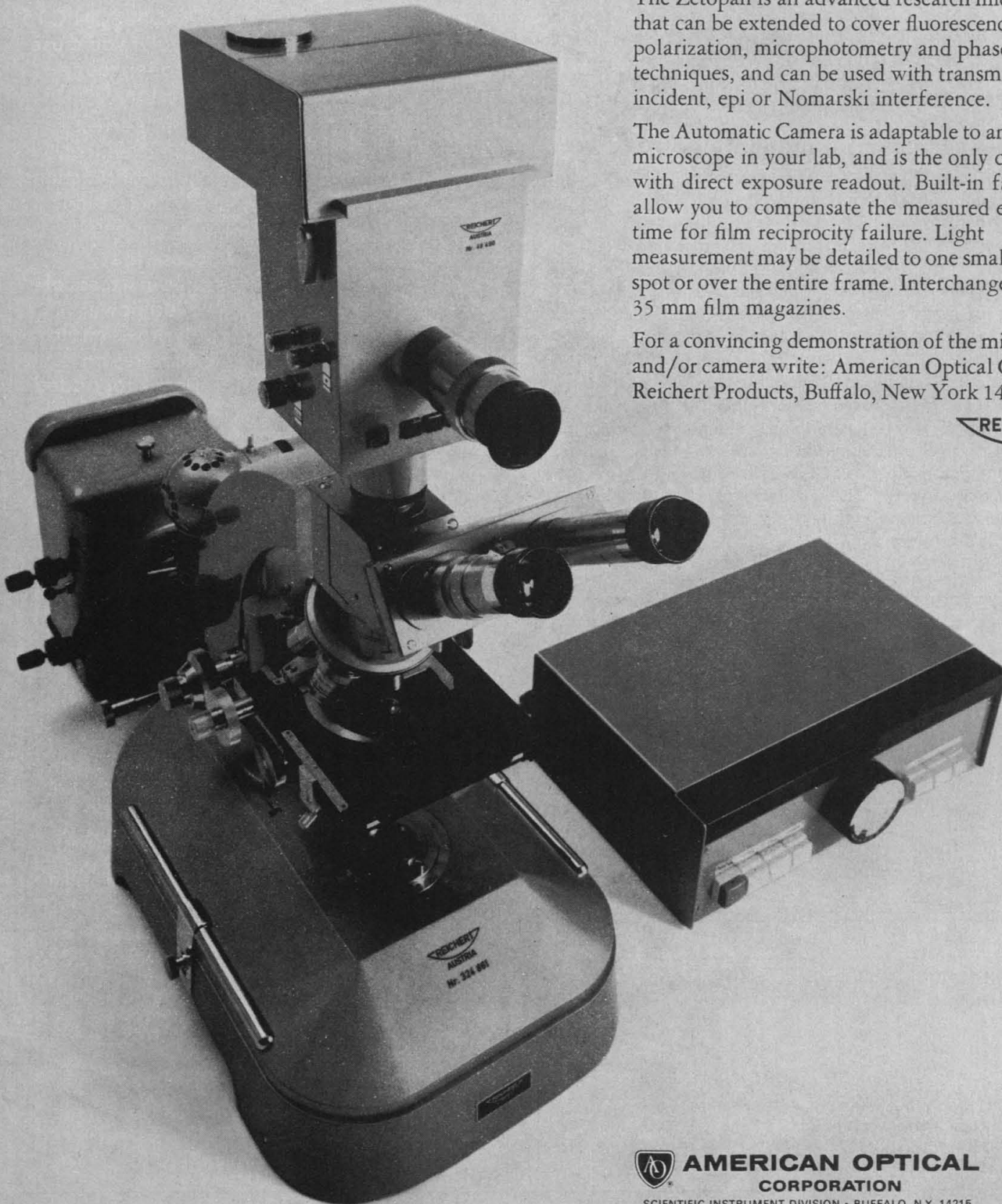
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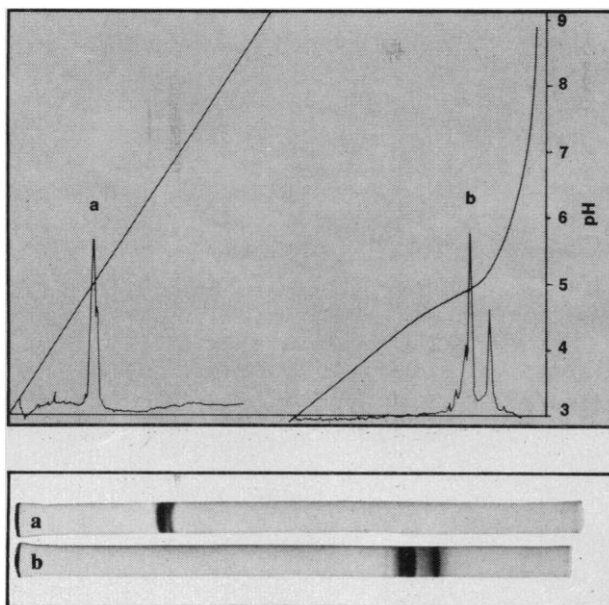


Fig. 1. Scan of separation of egg albumin, pH profile of gels and actual stained gels used. a. Bio-Lyte 3/10. b. Bio-Lyte 3/10 (40%) and Bio-Lyte 3/5 (60%). Top of gels are to the left. Details are as described in the text.

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1. Righetti, P. G. and Drysdale, J. W., *J. Chromatogr.*, **98**, 271 (1974).

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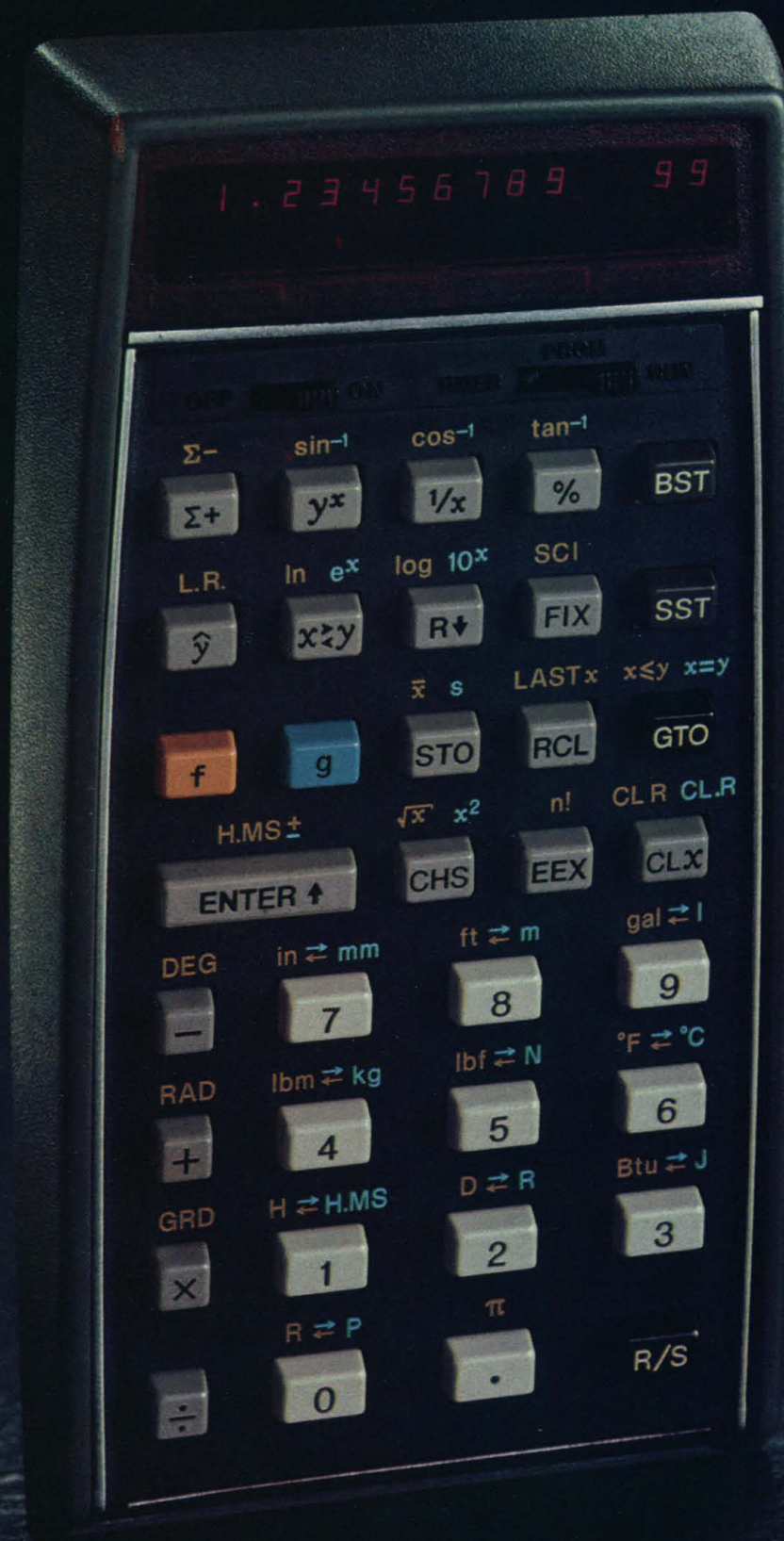
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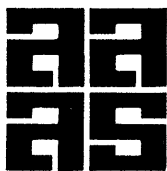


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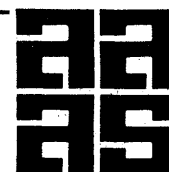
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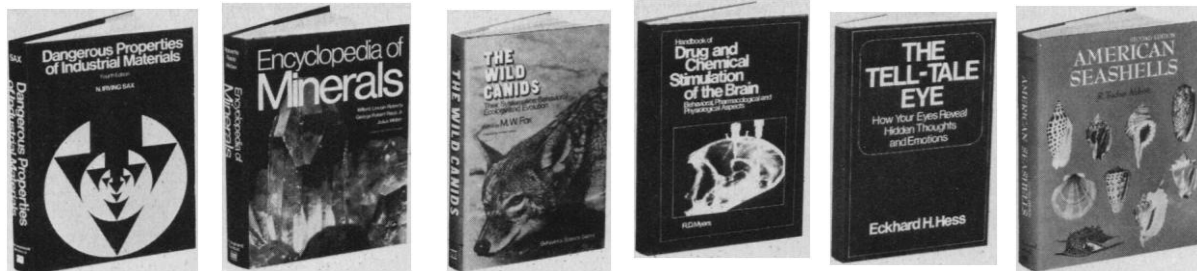
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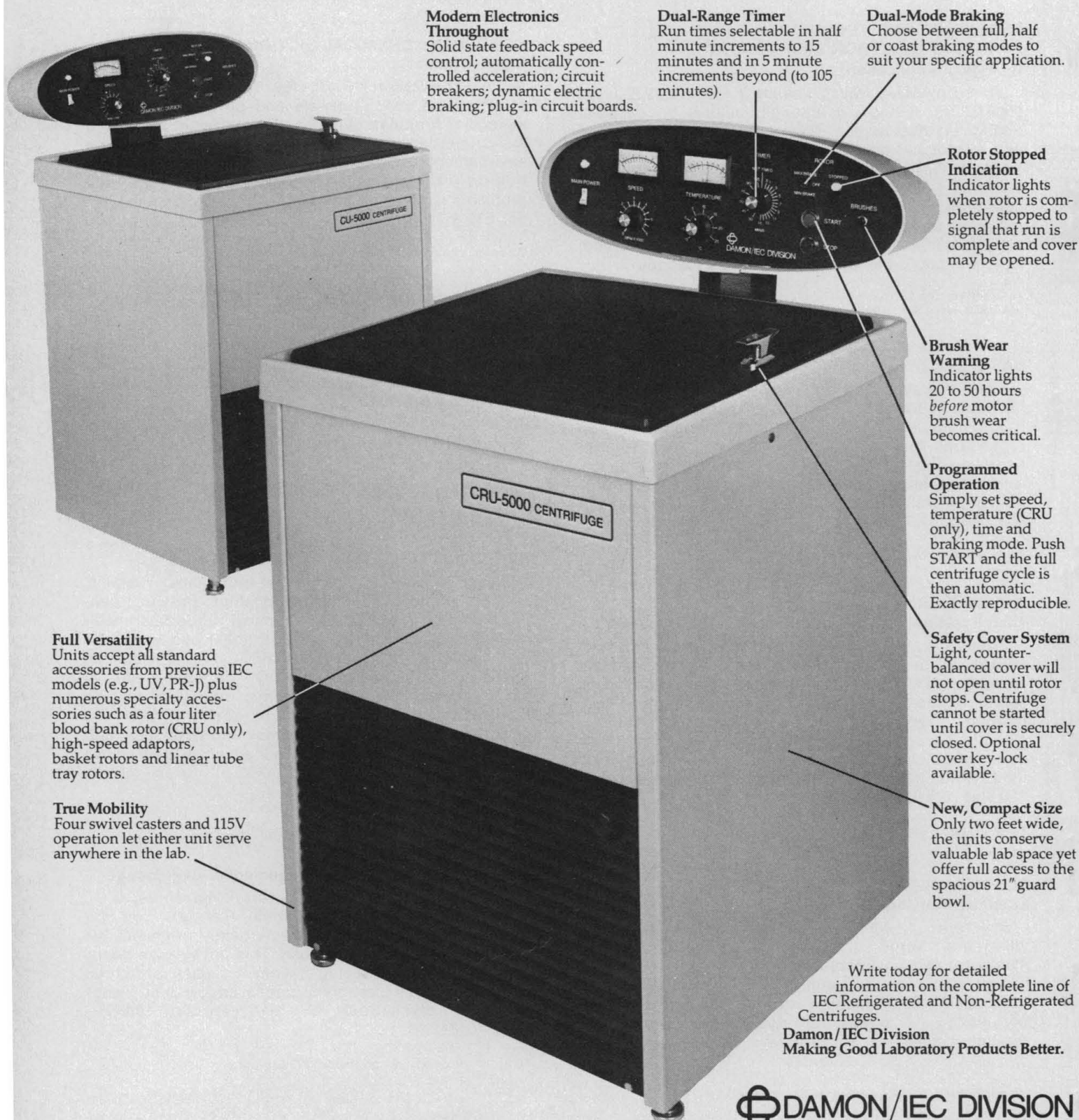
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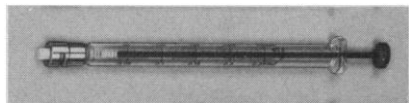
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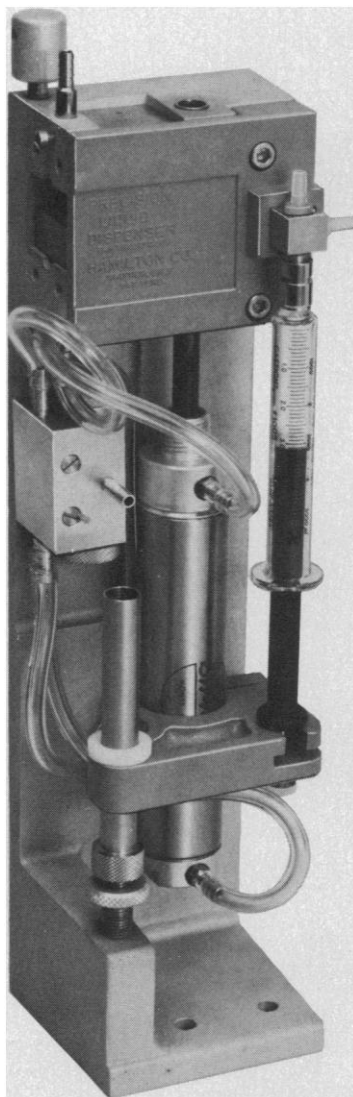
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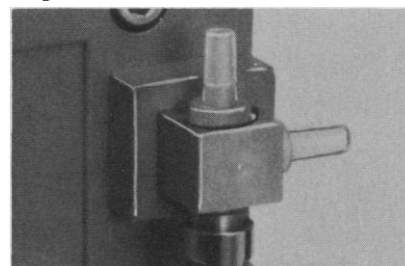


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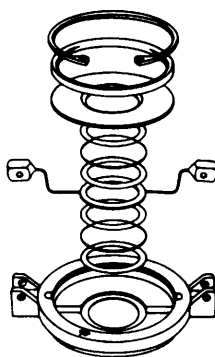
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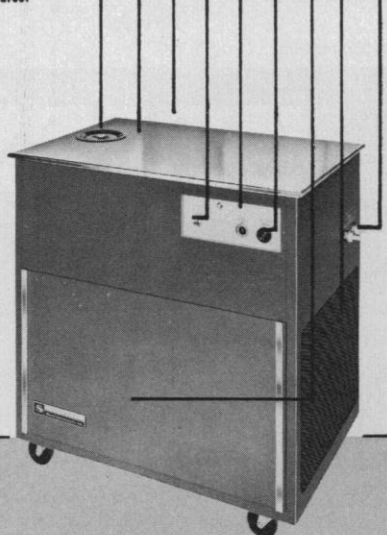
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fruits. To what extent they kill more than they eat, as dogs do, is less clear. Lorenzo (3) reports that 53 of 116 lamb deaths examined on a large ranch in New Mexico were due to predators, with coyotes causing three-fourths of the predator deaths. He found no evidence of dog predation, but comparison of photographs in the Four Corners report (4) and the *Ohio Farmer* article (1) shows that injury from the two sources can be quite similar.

The practice of shooting stray dogs on sight is growing. Often this merely maims the animal and is certainly an injustice to dogs that are not killers. Tighter regulations, strictly enforced, and the spaying of female dogs not used for breeding purposes, are imperative. So is more accurate knowledge than is available at the present time.

Both dog and sheep are virtual symbionts with man. One has been his companion, guardian, servant, and friend; the other, a source of food, wool, and a material essential to the music of Kreisler and Casals. It is ironic that man has not yet been able to reconcile the management of these two animals.

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1. R. F. Getz, *Ohio Farmer* 225, 6 (1 March 1975).
2. F. H. Wagner, *Coyotes and Sheep* (Utah State Univ. Press, Logan, 1972).
3. D. Lorenzo, *N.M. Wildl.* 20 (No. 1), 19 (1975).
4. J. A. Bennett et al., *Predator Control Study: Final Report to the Four Corners Regional Commission* (Utah State Univ. Press, Logan, 1973).

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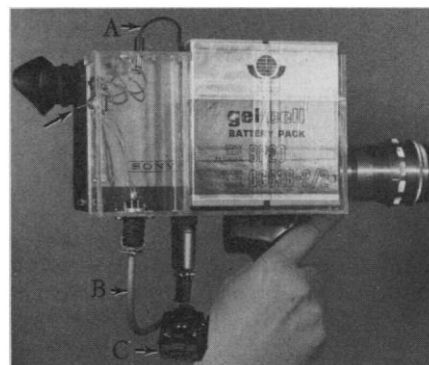


Fig. 1. Television camera (Sony DVC-2400), with attached plastic housing containing battery pack (12 VDC battery from Sony AV-3400 Videocorder). Connection of battery leads (A) to camera cable (B) is made through plastic housing, where one of the leads is provided with a switch (arrow). A light-emitting diode above switch gives on-off indication. Optional connection to external monitor is possible through plug (C).

power source directly on a portable video camera, which can then be used by itself.

For our purposes we use Sony portable video cameras (models AVC-3400 and DVC-2400). The batteries (Sony BP20), together with associated electrical hardware, are enclosed in a fabricated box mounted directly on the housing of the camera. The resulting self-contained ultraviolet viewer is compact and manageably light in weight (Fig. 1). Resolution on the camera's monitor decreases with the uncoupling of the recorder, but image quality is acceptable and full resolution can be restored if desired (3). Without the recorder power consumption is markedly reduced (a fully charged battery provides upward of 2 hours of viewing) (4).

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3. The camera's vertical and horizontal deflection circuits use free-running oscillators locked into fixed-phase relationship by synchronization pulses from the recorder that effect a scanning system having 2:1 interlace. Without this synchronization each scan is independent, and the vertical resolution is half that of the interlaced frame. Interlace can be restored with an oscillator and appropriate divider circuits, which can be mounted with the battery pack on the camera housing.
4. Our Sony equipment was bought before the "Save the Whales" boycott went into effect.

Of Quantities and Qualities

The article by Victor F. Weisskopf "Of atoms, mountains, and stars: A study in qualitative physics" (21 Feb., p. 605) exploring the qualitative approach to the material phenomena around us based on a quantum mechanical understanding of the atomic domain is like a particularly elegant Persian rug. To see the design of nature constructed from a few "simple—but subtle" motifs is to appreciate what is most attractive about the scientific endeavor and to rue how rarely articles like this are written.

And, as if not to insult the gods with the weaving of a perfect rug, two minor errors in the formulas occurred. The formula for the earth's radius, R_E (p. 609), should be

$$R_E \sim \left(\frac{N_E}{A} \right)^{1/3} R$$

instead of

$$R_E \sim \frac{N_E^{1/3}}{A} R$$

Also the expression for σ (p. 609) should be $\xi' \gamma R y / \pi f^2 a_0^2$ instead of $\xi' \lambda R y / \pi f^2 a_0^2$.

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Weisskopf's article is a fine discussion of the basic properties of atoms, mountains, and stars. Without the help of detailed calculations, he derives some important results. However, one point needs to be clarified. Weisskopf gives a simple calculation for finding what he calls the minimum mass of a star, but what he has actually computed is the minimum mass of a main sequence star. Main sequence stars are objects that are going through the hydrogen-burning stage of stellar evolution. During the preceding phase of gravitational contraction, nuclear reactions involving the destruction of deuterium, lithium, beryllium, and boron may also produce some energy. The minimum mass on the main sequence is obtained by finding the mass at which the hydrogen burning is just sufficient to support the luminosity of the star. According to my calculations (1), the value of the minimum mass for Population I main sequence stars is approximately 0.07 solar mass (M_\odot). Weisskopf has redone this calculation without using detailed evolutionary models.

Luminous stars of mass less than 0.07 M_\odot can and do exist. Two examples are the members of the visual binary system Wolf 424 (2). Each member in this system

has a mass slightly less than 0.07 M_\odot . Several other luminous stars which are thought to have masses less than 0.07 M_\odot have been observed in recent years. These stellar objects shine for periods as long as 1 billion years before they become too faint to be seen with our telescopes. The source of their energy output is the gravitational potential energy and the destruction of deuterium, lithium, beryllium, and boron. Because of electron degeneracy, the contraction phase of these stars comes to an end, and they eventually become extremely faint.

The approximate numerical value of the minimum mass of a star is 0.01 M_\odot (3). Stars are formed from interstellar clouds with different masses, and the minimum mass is the mass that a star must have at the time of its formation in order to survive as a separate entity. The number of luminous and nonluminous stars with masses in the range of 0.01 to 0.07 M_\odot is thought to be very large, and they may even make a significant contribution to the total mass of the Milky Way Galaxy and other galaxies (3, 4).

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I highly appreciate the kind words and the corrections which the two contributors have expressed in the above letters. Of course I agree with them, and I am sorry that the errors which Connell mentions were overlooked and that I did not explicitly state, as Kumar points out, that my considerations apply only to "ordinary" stars, that is, those on the main sequence. Even so, I find it remarkable that the lower limit for the mass of a luminous star, according to the more general considerations of Kumar, is only a factor of 100 away from the fundamental number $(hc/GM^2)^{1/2}$.

May I take this opportunity to point out a further numerical error in the article. At the bottom of the third column on page 611, in the expression of the lower limit of N^*/N_0 , $\pi^2/2$ should be replaced by $\pi^2/4$. The following sentence then should read: "The number of protons in a star must be at least $0.35\eta^{3/4}$ times the number N_0 ."

VICTOR F. WEISSKOPF

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NSF at Age 25

On 10 May, 25 years ago, President Truman signed the act that created the National Science Foundation. Since 1952, the first year the Foundation had funds for grants and fellowships, annual expenditures have increased from \$3.5 million to \$700 million and annual grants have increased from 96 to 6400. The Foundation's first annual report was largely an essay on the nature of basic research; the most recent includes dozens of pages of brief accounts of solid scientific accomplishments obtained through research supported by the Foundation. Thus this is occasion for hearty congratulations to the National Science Board, the staff, and the many advisers who have helped bring the Foundation to its present stage of influence and usefulness. We wish the Foundation a happy birthday, but not a trouble-free one.

If the Foundation does its job, troubles are unavoidable. It would be a timid agency indeed that never supported anything that was not criticized. Nor can it expect every grant to turn out successfully; nobody bats 1000, in grant making or in baseball. From time to time critics have contended that certain NSF grants are a waste of public money, or worse. Such charges—and there are likely to be more in the future—cause temporary trouble for Foundation officers, but they are one of the hazards of the business. And well-informed criticism can be a valuable means of keeping staff and advisers alert to the problem of maintaining a high level of quality.

Trouble can also be expected on the more general grounds of purpose and priority. It took an act of faith to establish an agency of the federal government with basic research as its central purpose, faith that greater scientific understanding would lead to practical improvements in public welfare. This faith prevailed in 1950, but it has never been truly popular, and in the Foundation's first annual report James Conant, then chairman of the National Science Board, warned that basic research is a long-term investment, that practical applications would not come rapidly. Since then, historical analyses supported by NSF have provided substantial evidence of the complex interlinkages between research and application, the necessity of combining research results from several fields, and the often long delay between a critical research finding and its practical application.

To some critics this pace is too slow. As NSF has grown, efforts to lead or push it into applied areas have increased. Political reality or scientific interest may sometimes require the Foundation to engage in these efforts. But such work is a major function of other agencies and a secondary one of the Foundation. Its primary contributions cannot be in seeking solutions to immediate problems, but in supporting and improving basic research and the capacity of the nation to conduct research of high quality.

Despite gradually more penetrating analyses of the economic benefits of research, appropriating several hundred millions a year for uncommitted research is still partly an act of faith. Not everyone agrees, however; there will continue to be those in government who want to push the Foundation toward more immediately applicable work, and this conflict will probably still be with us when the Foundation celebrates its 50th birthday. But creative tension is not always a bad state of affairs for a vigorous and healthy institution.—DAEL WOLFLE, *University of Washington, Seattle 98195*

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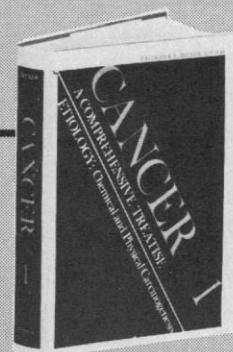
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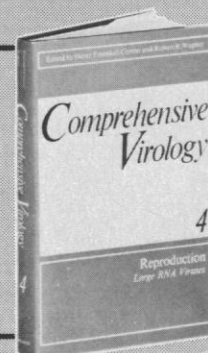
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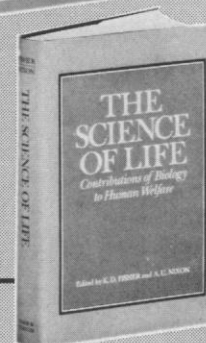
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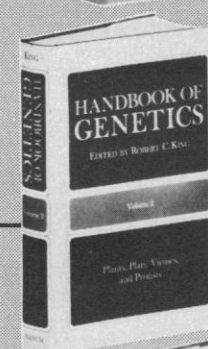
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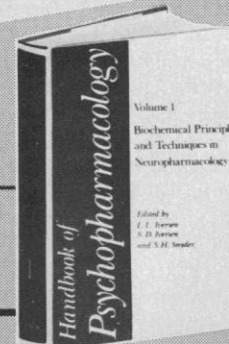
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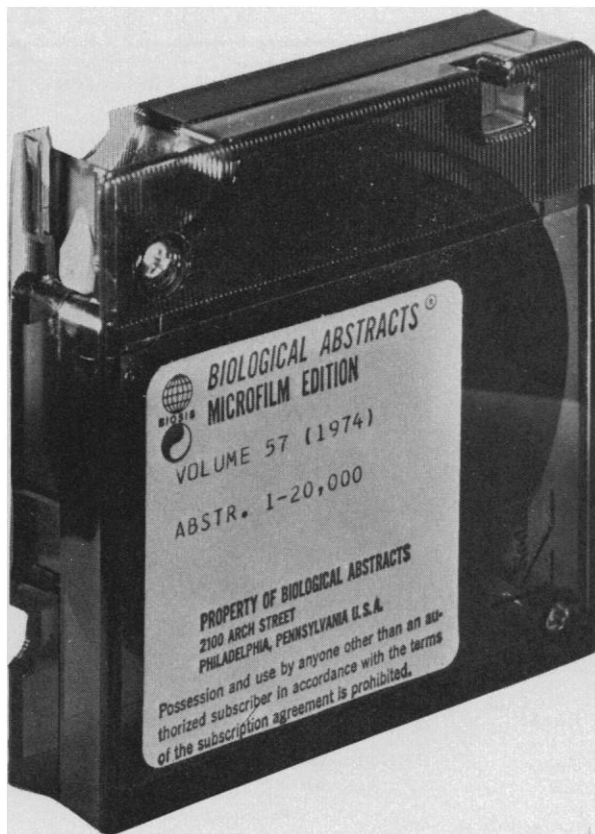


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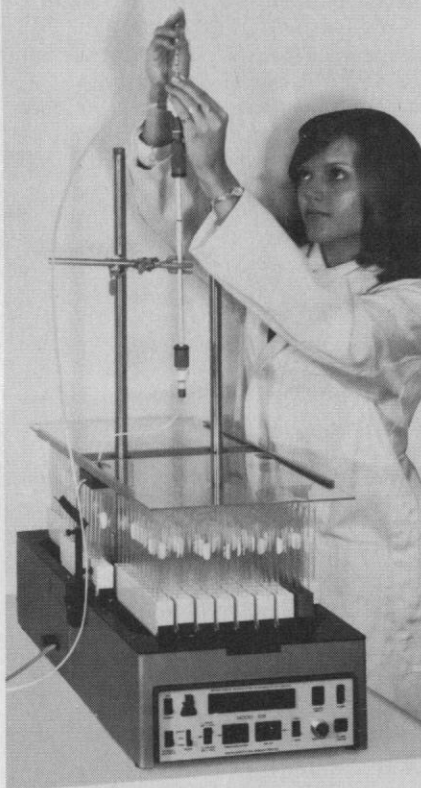
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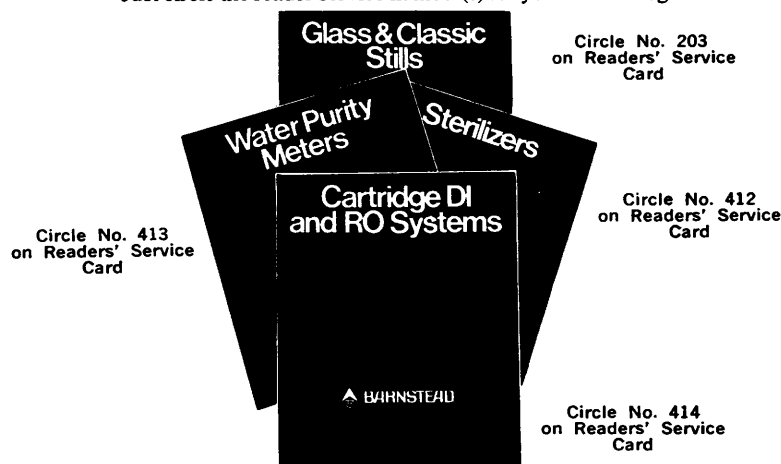


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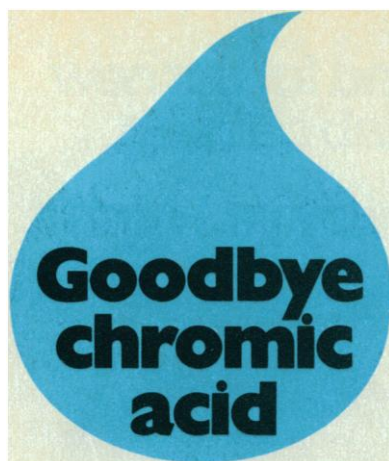
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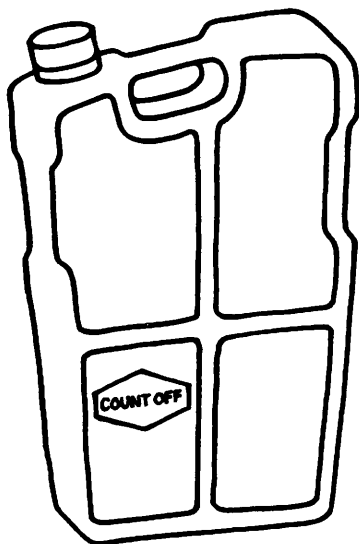
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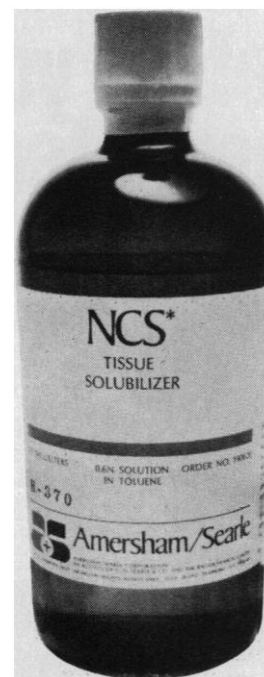
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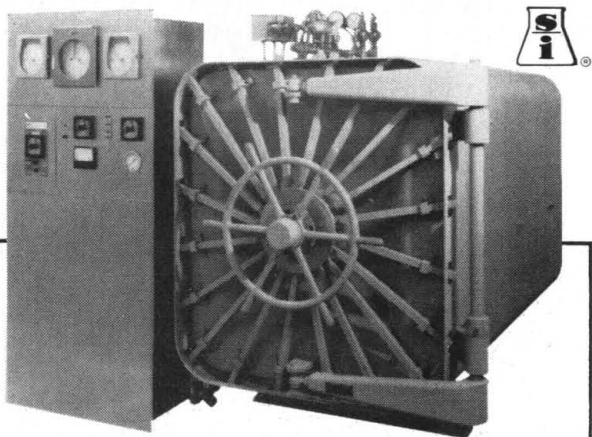
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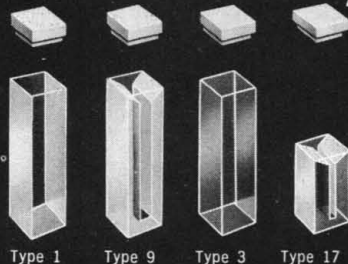
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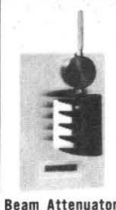
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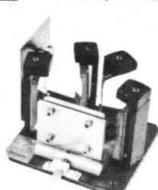
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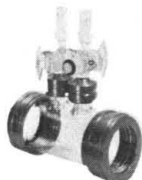
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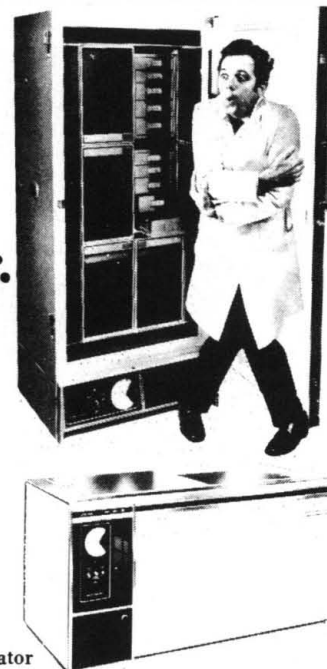
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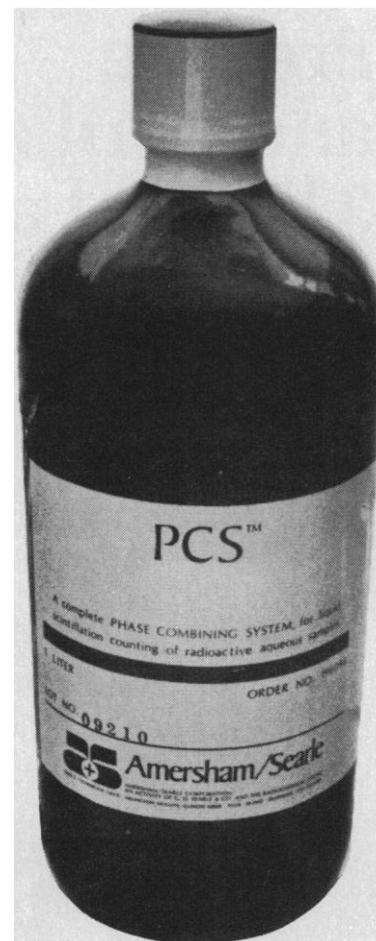
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Spectroscopic Tricks. Vol. 3. Leopold May, Ed. Plenum, New York, 1974. xii, 400 pp., illus. \$22.50. Reprinted from *Applied Spectroscopy*, 1970-73.

Structure and Dynamics of the Upper Atmosphere. Proceedings of a school, Erice, Italy, June 1971. Franco Verniani, Ed. Elsevier, New York, 1974. xiv, 536 pp., illus. \$61.50. Developments in Atmospheric Science, 1.

Surfaces and Interfaces of Glass and Ceramics. Proceedings of a symposium, Alfred, N.Y., Aug. 1973. V. D. Fréchet, W. C. LaCourse, and V. L. Burdick, Eds. Plenum, New York, 1974. x, 548 pp., illus. \$37.50. Materials Science Research, vol. 7.

Suspended Solids in Water. Proceedings of a symposium, Santa Barbara, Calif., Mar. 1973. Ronald J. Gibbs, Ed. Plenum, New York, 1974. viii, 320 pp., illus. \$29.50. Marine Science, vol. 4.

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Our Children. Joel Macht. Wiley, New York, 1975. xii, 144 pp. Paper, \$3.95.

Tectonics and Sedimentation. Papers from a symposium, Anaheim, Calif., May 1973. William R. Dickinson, Ed. Society of Economic Paleontologists and Mineralogists, Tulsa, Okla., 1974. vi, 204 pp., illus. \$11; to members, \$9. SEPM Special Publication No. 22.

Themes on Pacific Lands. M. C. R. Edgell and B. H. Farrell, Eds. Department of Geography, University of Victoria, Victoria, B.C., Canada, 1974. xviii, 312 pp., illus. Paper, \$4. Western Geographical Series, vol. 10.

The Theory of Ultrafilters. W. W. Comfort and S. Negrepointis. Springer-Verlag, New York, 1974. x, 484 pp. \$40.20. Die Grundlehren der mathematischen Wissenschaften, Band 211.

Thermoregulation and Bioenergetics. Patterns for Vertebrate Survival. Henry Swan. Elsevier, New York, 1974. xiv, 430 pp., illus. \$18.50.

Thomas Reid's 'Inquiry.' The Geometry of Visibles and the Case for Realism. Norman Daniels. Burt Franklin, New York, 1975. xx, 148 pp. \$12.95.

Treatise on Analysis. Vol. 4. J. Dieudonné. Translated from the French edition (Paris, 1971) by I. G. Macdonald. Academic Press, New York, 1974. xvi, 446 pp. \$34. Pure and Applied Mathematics, vol. 10-IV.

Turbulent Diffusion in Environmental Pollution. Proceedings of a symposium, Charlottesville, Va., Apr. 1973. F. N. Frenkiel and R. E. Munn, Eds. Academic Press, New York, 1974. Two volumes, illus. Part A, xvi, 462 pp.; part B, xvi, 390 pp. Each volume, \$28.50. Advances in Geophysics, vols. 18A and 18B.

Understanding Arthritis and Rheumatism. A Complete Guide to the Problems and Treatment. Malcolm I. V. Jayson and Allan St. J. Dixon. Illustrated by Gary James. Pantheon (Random), New York, 1974. xxii, 230 pp. \$7.95.

The Use of Marijuana. A Psychological and Physiological Inquiry. Jack H. Mendelson, A. Michael Rossi, and Roger E. Meyer, Eds. Plenum, New York, 1974. x, 202 pp., illus. \$14.95.

Vascular Plant Systematics. Albert E. Radford, William C. Dickison, Jimmy R. Massey, and C. Ritchie Bell. Illustrated by Marion S. Seiler. Harper and Row, New York, 1974. xiv, 892 pp. Cloth, \$19.95; paper, \$9.95.

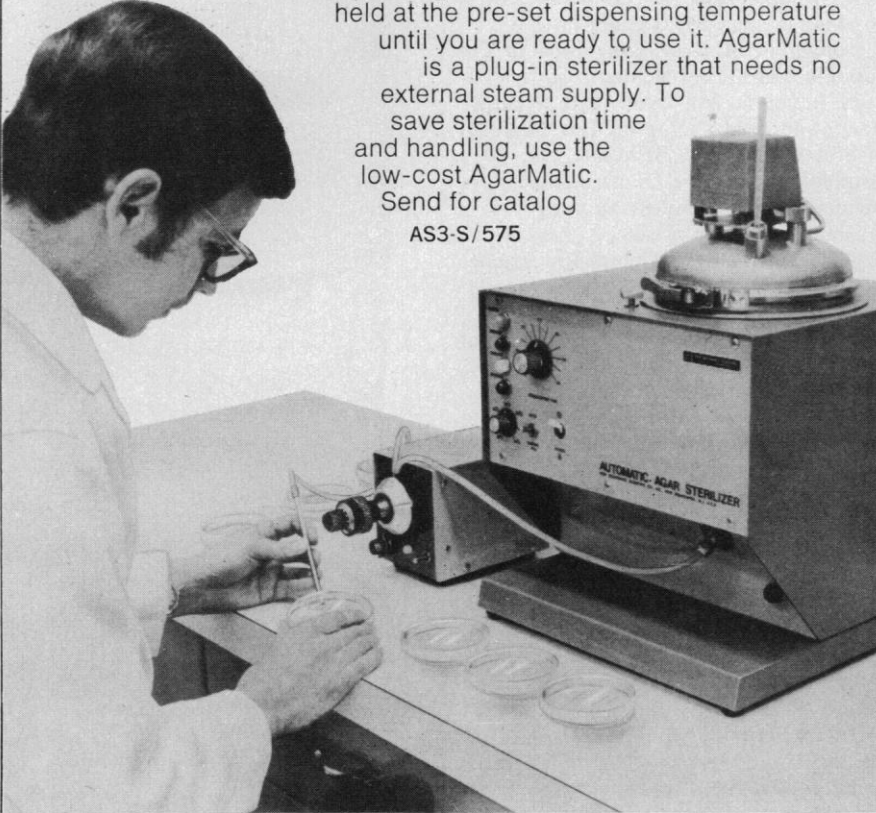
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The Voyages of Apollo. The Exploration of the Moon. Richard S. Lewis. Quadrangle (New York Times), New York, 1974. xii, 308 pp. + plates. \$12.50.

The Way Things Work Book of the Computer. An Illustrated Encyclopedia of Information Science, Cybernetics and Data Processing. Translated from the German edition (Mannheim, 1969). Simon and Schuster, New York, 1974. viii, 246 pp. \$8.95.

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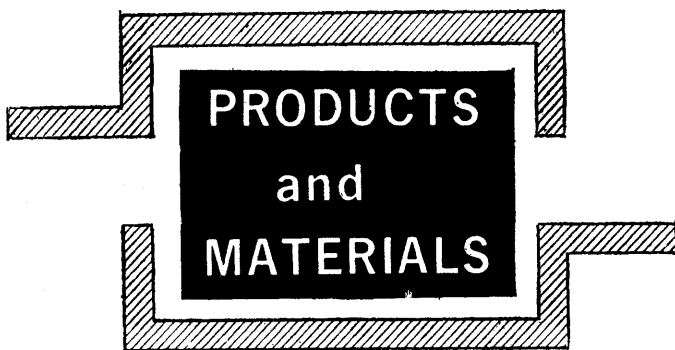
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Dimaspec offers push-button control and provides mass-marked spectra for every scan. The large oven will accommodate a variety of columns. Scan rates up to 512 atomic mass units per second are possible. The device is programmable for repetitive analyses. There is an all-glass jet separator interface enclosed in a separate heated oven to eliminate cold spots and ensure maximum sample transmission. DuPont Company, Instrument Products Division. Circle 733.

Minicomputer

The 32-bit model 8/32 megamini bridges the gap between 16-bit minicomputers and large-scale mainframes. It is available with 128K bytes of memory or with 1 megabyte. Memory modules, software, and peripheral interfaces are the same as for the model 7/32. In its most basic configuration, the device is a nine-board processor packaged in a 16-slot RETMA chassis with four slots for 32K-byte memory modules. Three expansion slots are reserved for input-output logic. Interdata, Incorporated. Circle 736.

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card (see pages 774A and 862A) and placing it in the mailbox. Postage is free.—RICHARD G. SOMMER

Electrocardiograph Recorder

The Trendsciber records either 1/2 hour or 2 hours of patient activity on a single sheet. The device consists of a stylus that traces on a rotating drum of electrosensitive paper. Signals may be transmitted through wires or by telemetry. A program allows the operator to select sampling intervals of 1, 2, 3, 4, 5, 10, 30, or 60 minutes. The duration of a recording may be varied from 1 to 5 minutes. The single sheet with its 30-line EKG record (each line represents 1 minute in the 1/2-hour diagnostic mode and 4 minutes in the 2-hour recording mode) contains the same information that a 150-foot roll of paper tape would. American Optical Corporation, Medical Division. Circle 730.

Recording Magnetometer

The M-123 is a 1-gamma portable device. It is available in models for use as a base station, for shallow or deep marine use and for airborne applications. Accuracy is ± 1 gamma. The operator selects continuous cycling from 0.6 to 2 seconds and internal timing from 2 seconds to 99 minutes in 1-second steps. The recorder offers a wide range of chart speeds and accuracy of ± 0.5 percent of full scale, pen response of 0.5 second full scale, and less than 1 percent overshoot. Entire package weighs 9.1 kilograms. Barringer Research Limited. Circle 731.

Microscope Light Source

Model 163 is available with a 20-watt halogen bulb whose output equals that of a 60-watt incandescent bulb. The source includes a bulb-holding insert that fits into the microscope base and a transformer that attaches to the back of the microscope. The insert has a clear collector lens and a field diaphragm for Köhler illumination. A swing-in diffuser and an auxiliary lens ensure maximum brilliance and even illumination of the field. Opti-Quip, Incorporated. Circle 739.

Electrophoresis Reagents

Four sets of reagents for polyacrylamide gel electrophoresis are available. They are the standard set, a solubilized gel set, a set that includes sodium dodecyl sulfate, and a starter reagent set. The standard set contains acrylamide, *N,N'*-methylenebisacrylamide, ammonium persulfate, TEMED, riboflavin, tracker dye, and stain. The solubilized gel set features *N,N'*-diallyltartardiamide (DATDA) as a cross-linking agent for the preparation of soluble gels. Periodic acid dissolves the gels easily for scintillation counting. The SDS set is designed for molecular weight determinations and the starter set combines the reagents from the other three sets. Eastman Organic Chemicals. Circle 734.

Enteric Analyzer

The device evaluates the results of biochemical tests for the identification of enteric bacteria. Any tests may be used if their parameters match data published by the Center for Disease Control. A total of 28 organisms may be identified by indicator lights. As test results are read, the operator uses toggle switches to indicate them. The combination of toggle-switch positions turns out corresponding lights as the organisms are eliminated by test results. Diagnostic Research Department, Medical Products Division, Corning Glass Works. Circle 732.

Calcium Electrode

The 93-20 electrode measures the concentration of calcium from 0.32 part per million to 40.1 parts per thousand. Procedures are available for analysis of soils, ground water, clay, skim milk, and other samples of interest. Like the other electrodes in the 93 series, the calcium electrode is ready for use when the sensing module is attached to the body of the electrode. Any specific-ion meter or expanded scale pH-millivolt meter may be used to read the concentration. Orion Research, Incorporated. Circle 740.

Dilutor-Dispenser

The Ultramicro dilutor will sample in the 10-microliter range with dilution of sample up to 10 milliliters. Precision and replication are part of the design. There is a magnetic catch on the diluent syringe and a friction lock on the sample or specimen syringe plunger. Hamilton Company. Circle 735.

Incu-Stage is designed for use with 1- by 3-inch slides to maintain microorganisms at 37°C. The slide is placed at the bottom of a compartment in contact with the sub-stage condenser. The top of the incubator is covered with a mica sheet with a hole in the center through which the objective projects into the incubating chamber. A soft rubber washer serves as a seal. Incu-Stage has integral heating elements and a bimetallic thermostat. Lab-Line Instruments, Incorporated. Circle 737.

Literature

Water Technology Manual covers 14 methods and has a reference section of hints on spectrophotometry. Bausch & Lomb Analytical Systems Division. Circle 742.

Metro Disc describes a water sampler for heavy metal analysis. Data sheet 18 lists capabilities and applications. Environmental Devices Corporation. Circle 743.

pH Meters features the model 103—a precise, reliable model with sensitivity to 0.01 unit. Brinkmann Instruments Incorporated. Circle 744.

Solution Calorimeters are covered in bulletin 1451 for the measurement of heat of reaction from 2 to 2000 calories with an accuracy of 1 percent. Parr Instrument Company. Circle 745.

Catalog 750 features thermometers, hygrometers, and accessories for measurement of heat in research applications. Brooklyn Thermometer Company Incorporated. Circle 749.

1975 Research Products Catalog lists radiochemicals, standards, liquid scintillation and gamma counting supplies and accessories. Amersham/Searle Corporation. Circle 747.

Laboratory Products Catalog 750 describes reagents and specialty chemicals. J. T. Baker Chemical Company. Circle 748.

Model AR-2 Recording Vacuum Balance includes description of stability, features, accessories, and design specifications. Perkin-Elmer Corporation, Instrument Division. Circle 751.

NMR Deuterated Chemicals and Shift Reagents lists an expanded product line for this mode of chemical analysis. Pfaltz & Bauer Incorporated. Circle 752.

Laboratory Products Catalog describes apparatus for cell harvesting, solution pumping, air filtration in vacuum systems, and other scientific applications. Spectro-derm International. Circle 753.

Demineralized Pure Water is devoted to the Osmo system of reverse osmosis. Osmotics, Incorporated. Circle 750.

(Continued from page 818)

New Mexico desert, but that won't be ready until the early or mid-1980's.

In spite of these continuing difficulties, the prevailing view of nuclear engineers seems to be that no real technological barriers exist to the safe and economical disposal of nuclear waste. But the continuing muddle over what to do with spent fuel and what to do with the final radioactive dregs of nuclear power generation are doing nothing for the technology's image.

—ROBERT GILLETTE

RECENT DEATHS

Frederick B. Davis, 65; professor of education, University of Pennsylvania; 2 March.

Richard F. DeMar, 50; professor of mathematics, University of Cincinnati; 11 February.

Donald W. Denna, 44; associate professor of horticulture, Colorado State University; 15 January.

Alden H. Emery, 73; chemist and former executive secretary, American Chemical Society; 14 March.

Paul H. Margolf, 78; professor emeritus of poultry science, Pennsylvania State University; 13 February.

Bernard D. Tebbens, 65; professor of public health and engineering; University of California, Berkeley; 10 February.

C. Mildred Thompson, 93; dean emeritus, Vassar College; 16 February.

Adolph E. Waller, 82; professor emeritus of botany, Ohio State University; 28 January.

Edward H. Watson, 72; retired chairman, geology department, Bryn Mawr College; 21 February.

Arnold V. Wolf, 58; dean, Graduate College, University of Illinois Medical Center Campus; 27 February.

Nathan A. Womack, 73; first chairman, surgery department, University of North Carolina School of Medicine; 2 February.

George M. Worrlow, 70; former dean, College of Agriculture, University of Delaware; 27 February.

Bernice M. Wright, 66; former dean, College for Human Development, Syracuse University; 17 February.

Erratum: Excerpts of an address by Benno C. Schmidt (16 May, p. 716), chairman of the President's Cancer Panel, erroneously implied that the Cold Spring Harbor Laboratory is an officially designated "comprehensive cancer center." Although the laboratory receives support from the National Cancer Program, it is not a "comprehensive center."—B.J.C.

(Continued from page 823)

ized and separated with flow systems, but the Livermore group is finding that chromosomes are also distinguishable. The investigators stained chromosomes isolated from cultured Chinese hamster cells with ethidium bromide. This dye combines specifically with DNA so that the chromosomes are separated on the basis of differences in their DNA content. The technique does not completely resolve the chromosomes but the resolution was sufficient to detect a chromosomal rearrangement in a mutant line of hamster cells.

Van Dilla thinks that the method is a highly promising approach to karyotyping and to purifying individual chromosomes for biochemical and biological characterization. The Livermore investigators are now attempting to apply the same procedures to human chromosomes. This will obviously be more difficult since humans have roughly twice the number of chromosomes as hamsters. In an early experiment, the investigators resolved chromosomes prepared from cultured cells from a human male (24 different chromosomes) into 7 groups. Again, karyotyping appears to be more limited by availability of suitable methods for preparing chromosomes than it is by the instrumentation.

Numerous additional applications of flow systems are being investigated. For example, the techniques provide a rapid, quantitative means of determining the amount of antigen or antibody on individual cells and thus for studying immune responses. Flow techniques should also prove valuable for studying lectin binding by cells. Lectins are widely used to probe the differences between normal and malignant cells.

The availability of commercial instruments will no doubt accelerate the applications of flow systems to biomedical research. Becton, Dickinson Electronics Laboratory (Mountain View, California) is now producing the FACS-I after the prototype developed at Stanford. Bio/Physics Systems manufactures a series of systems with capabilities ranging from simple cell counting to multiparameter analysis with sorting. And Particle Technology, Inc. (Los Alamos) is also starting to produce flow instruments. Developments that will further stimulate research include incorporation into the instruments of lasers tunable over a wide range of wavelengths and of lasers emitting infrared or ultraviolet light. The potential impact of flow systems on biology, according to Mullaney, equals that of the electron microscope.—JEAN L. MARX