

T-105, P.O. Box 808, Livermore, Calif.)
 21-24. American **Geophysical Union**, Washington, D.C. (AGU, 1515 Massachusetts Ave. NW, Washington D.C.)
 21-30. **Seismology**, intergovernmental meeting, Paris, France. (UNESCO, Pl. de Fontenoy, Paris 7°)
 22-24. Institute of **Electrical and Electronics Engineers**, 16th annual southwestern conf., Dallas, Tex. (F. E. Brooks, Jr., Military Electronics Div., Ling Temco Vought, P.O. Box 6118, Dallas 75222)
 22-24 British Inst. of **Radiology**, 25th congr., London, England (BIR, 32 Welbeck St., London, W.1)
 22-25. National Council of **Teachers of Mathematics**, Miami Beach, Fla. (H. T. Karnes, Dept. of Mathematics, Louisiana State Univ., Baton Rouge 3)
 23-25. American **Gastroenterological Assoc.**, Dallas, Tex. (D. Cayer, 2240 Cloverdale Ave. Winston-Salem, N.C.)
 23-25. **Illinois State Acad. of Science**, Bloomington. (A. A. Paloumpis, Illinois State Normal Univ., Normal)
 23-25. **Medical Women's Federation**, annual, Keswick, England. (MWF, Tavistock House North, Tavistock Sq., London, W.C.1, England)
 23-25. **Ohio Acad. of Science**, Cleveland. (J. H. Melvin, 505 King Ave., Columbus 1, Ohio)
 23-25. **West Virginia Acad. of Science**, Wheeling. (J. A. Duke, S.J., Wheeling College, Wheeling)
 24. **Mississippi Acad. of Sciences**, Columbus. (C. Q. Sheely, Mississippi State Univ., State College)
 24. **Parenteral Drug Assoc.**, Chicago, Ill. (PDA, Broad and Chestnut Sts., Philadelphia, Pa.)
 24-25. **Chemistry of Microbial Products**, symp., Tokyo, Japan. (H. Umezawa, Inst. of Applied Microbiology, University of Tokyo, Hongo, Tokyo)
 24-25. **South Carolina Acad. of Science**, Aiken. (R. W. Rutledge, Clemson College, Clemson, S.C.)
 24-25. **South Dakota Acad. of Science**, Sioux Falls. (T. Van Bruggen, Dept. of Botany, Univ. of South Dakota, Vermillion)
 26. **Georgia Acad. of Science**, Athens. (T. W. Kethley, Georgia Inst. of Technology, Engineering Experiment Station, Atlanta 13)
 26-27. **Water and Geology**, conf., Bloomington, Ind. (A. F. Agnew, Dept. of Geology, Indiana Univ., Bloomington)
 26-30. **Cereal Chemists**, 49th annual, Toronto, Ont., Canada. (N. G. Irvine, Grain Research Laboratory, 190 Grain Exchange Bldg., Winnipeg 2, Canada)
 26-30. **AAAS, Southwestern and Rocky Mountain Div.**, Lubbock, Tex. (M. G. Anderson, P.O. Box 97, University Park, New Mexico 88070)
 26-30. American **Industrial Hygiene Assoc.**, Philadelphia, Pa. (G. D. Clayton, 14125 Prevost, Detroit 27, Mich.)
 27. **Tooth Transplant in Humans**, intern. seminar, New York, N.Y. (S. J. Behrman, New York Inst. of Clinical Oral Pathology, 101 E. 79 St., New York 21)
 27-1. **Photographic Science and Engineering**, intern. conf., New York, N.Y. (H. F. Nitka, General Aniline and Film Corp., Bldg. 44, Charles St., Binghamton, N.Y.)

21 FEBRUARY 1964



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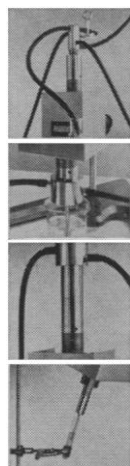
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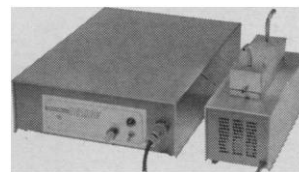
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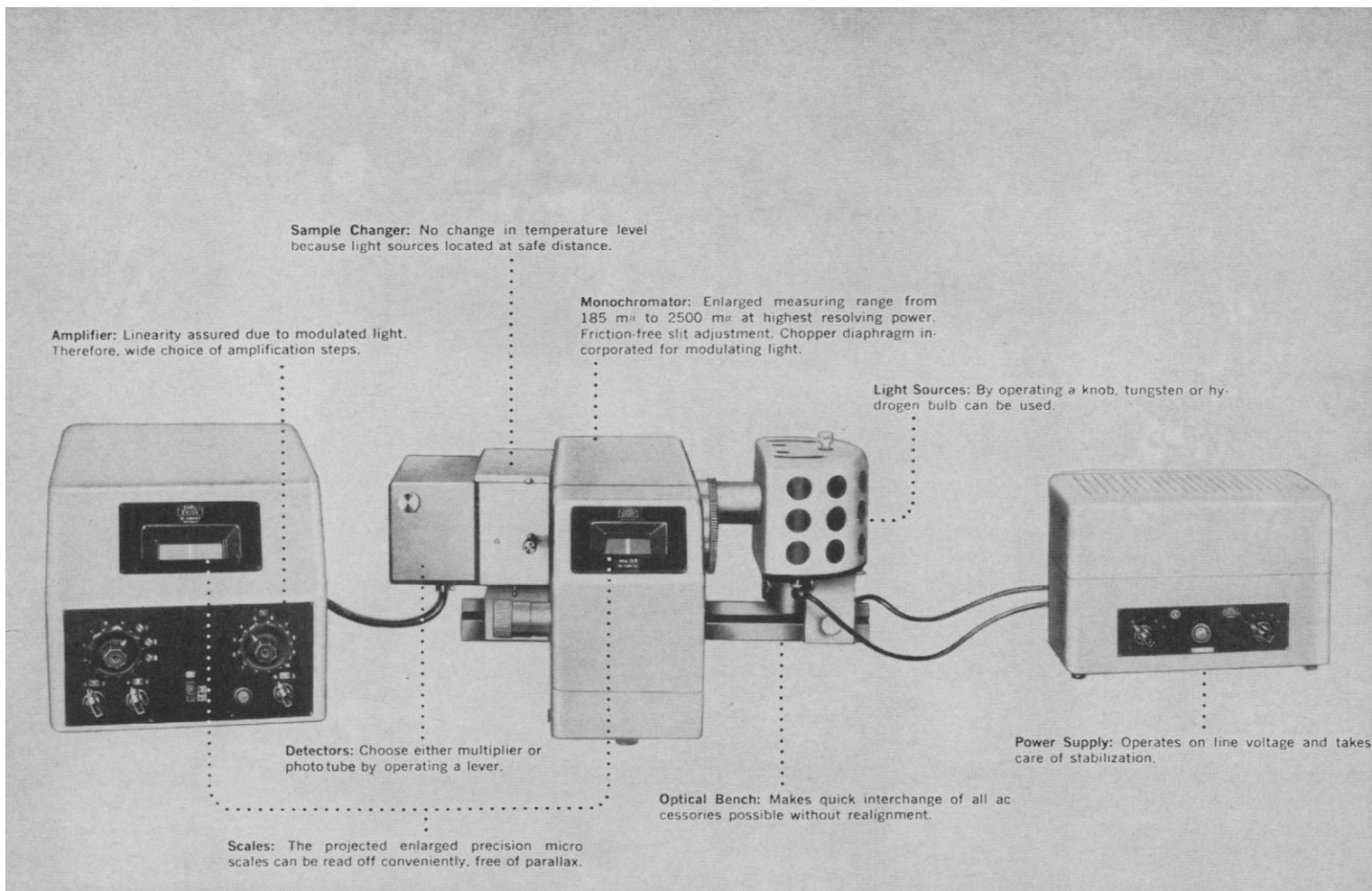
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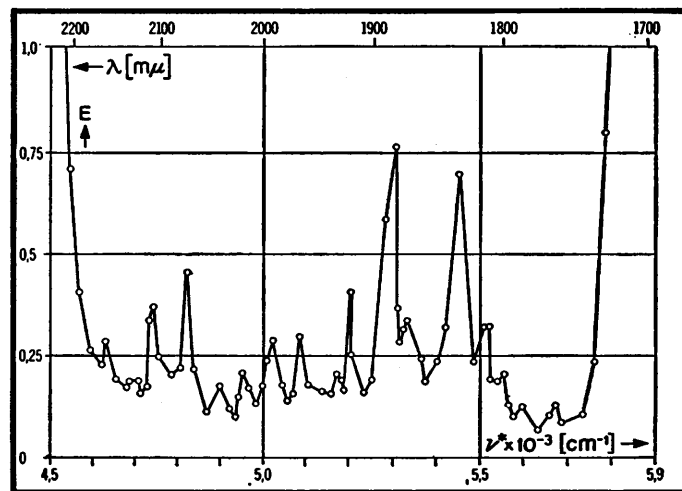
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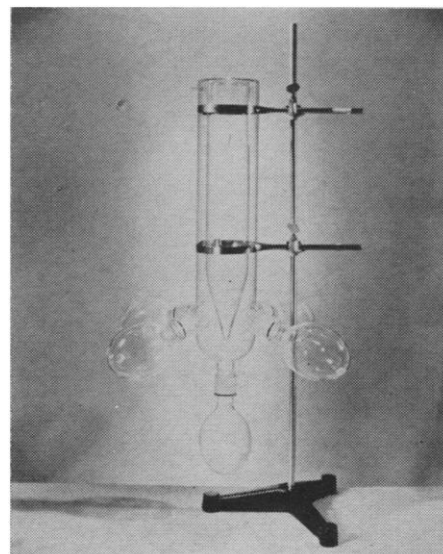
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VLF frequency standard receiver (model 3004) features an internal calibrator that eliminates errors resulting from variation in phase shift. At approximately 10-minute intervals, a 40-db attenuator is inserted automatically in the VLF signal input line and a high-level reference signal is injected into the antenna circuit. A mark then

appears on the recorder chart that indicates the phase shift then existing within the overall system from antenna to recorder. Models are available for 16, 18, 20, or 60 kcy/sec or for simultaneous reception of 30 and 60 kcy/sec. The instruments are complete and coordinated systems for receiving standard frequency transmissions and for monitoring frequency standards. Outputs are provided for suitable recording devices. Receiver sensitivity is $0.5 \mu\text{V}$ /meter for 30 db signal to internal noise ratio at the phase comparator output. Dynamic range is 80 db. Phase accuracy is said to be $\pm 1.0 \mu\text{sec}$ with respect to the incident field for 30 db or better signal-to-external-noise ratio. Zero to full-scale output corresponds to one cycle delay at the radio frequency; output is linearly proportional to phase delay.—J. S. (Develco, Inc., 438 Pepper St., Palo Alto, Calif.)

Circle 3 on Readers' Service Card

Lyophil drying apparatus is fabricated in two sizes and there are eight different flask capacities, ranging from 100 to 1000 ml. The apparatus incorporates joints which feature an O-ring seal above the ground surface. This construction is said to protect the O-ring from solvents and vapor. Furthermore, it is claimed that the tight seal prevents the atmosphere from attacking the system, but that despite the tightness of the seal, the joints are quickly connected and disconnected. No lubrication is required. The apparatus is made entirely of hard borosilicate glass. It consists of an inner cone-shaped condenser for holding the refrigerant, and an outer jacket with tubulature at the top for connection to a vacuum system. Five standard taper "HVS"

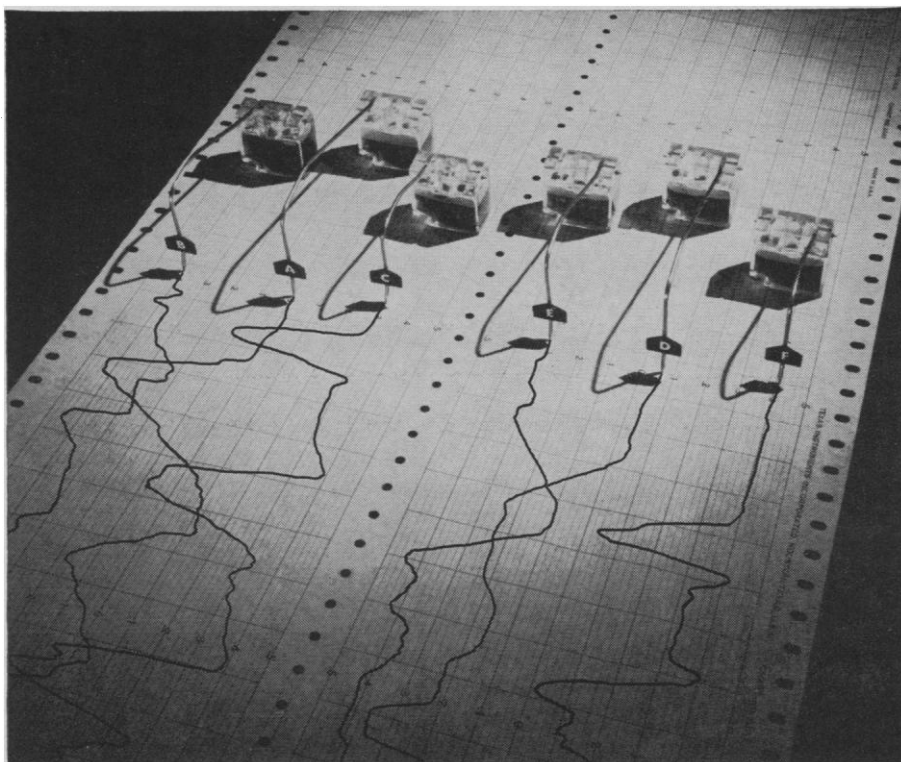


The material in this section is prepared by the following contributing writers:

Robert L. Bowman (R.L.B.), with the assistance of Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither *Science* nor the writers assume responsibility for the accuracy of the information. A Readers' Service card for use in mailing inquiries concerning the items listed is included on pages 737 and 883. Circle the department number of the items in which you are interested on this card.



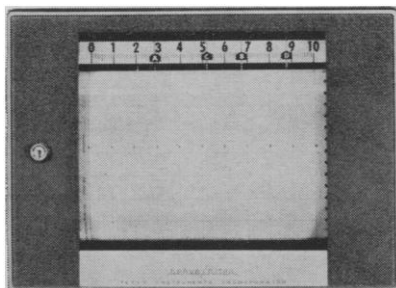
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joints with Buna-N O-ring at the lower end of the jacket accommodate five flasks with matching "HVS" joints—pear-shaped to facilitate removal of dried material. Four are sloped 90° apart around the vessel; the fifth is vertical in the bottom center.—R.L.B. (Scientific Glass Apparatus Co., Inc., Bloomfield, N.J.)

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Potentiometer-noise test system (model 2174) determines the amplitude distribution of electrical noise in potentiometers at ten levels simultaneously. Input sensitivity range of the system is 30 μ v to 30 mv, peak-to-peak, and frequency range is 100 cy to 100 kcy/sec. The potentiometer may be tested as a two- or three-terminal device and the tests may be static or dynamic. Noise output from the potentiometer is applied to the system through a common pre-amplifier input, from which it is distributed to the ten channels. Meters indicate directly the percentage of time the preset noise-amplitude level of the particular channel is exceeded, or not exceeded, as desired. Full-scale ranges of 100 percent or 10 percent may be selected for each channel. Either total time integration or running-time integration may be selected. Electrical analog signal outputs are available from each channel for remote monitoring, controlling, or data processing. Accuracy of the system is said to be ± 5 percent, limited by pre-amplifier response.—J. S. (Quan-Tech Laboratories, Inc., Boonton, N.J.)

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Micro-projector uses a 450-watt xenon lamp to achieve high intensity micro projection over a wide range of magnifications and allows the use of oil immersion lenses. A dichroic mirror reflects all usable light into the optical system while heat radiations bypass the specimen stage preventing bleaching of slides and damage to live specimens. A series of flat-field plano objectives from 2.5 to 160 $\times$ power are provided and a set of neutral density filters permits variations in light intensity without affecting the color balance. The projector operates on standard 110 volts a-c and includes a 17 to 25 amp power pack. The ability to produce large images at short distances makes the projector useful for research seminars and conferences as well as classroom demonstrations.—D.J.P. (E. Leitz, Inc., 468 Park Ave. South, New York 16)

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SCIENCE, VOL. 143

Tube pump transfers slurries, liquids, or gasses by means of two rollers that squeeze the walls of the tubing to force the fluid along. A loop of rubber or other elastic tubing is clamped between a pair of rollers and the inside of a cylindrical housing. Rotation of the arm bearing rollers at each end sweeps the fluid along and maintains positive displacement as one or the other roller is always on the tube. The tubing can be removed and replaced as a loop without access to the ends. A wide range of displacements is possible by use of various sizes of tubing and rotational speeds. With $\frac{3}{8}$ inch (0.95 cm) inside diameter tubing operated at 430 rev/min, the pump delivers 320 lit./hr, while smaller tubing and lower speeds will provide lower flows. The pump itself is a compact aluminum casting with baked epoxy finish and is available separately or mounted with a $\frac{1}{4}$ -hp electric motor with either single speed belt drive or a variable speed transmission.

—R.L.B. (LaPine Scientific Co., 6001 S. Knox Ave., Chicago, Ill. 60629)

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Flexible-package sampler enables the removal of samples of gases from almost any hermetically sealed flexible package. The sampler requires only that the material of the package be gas-tight and have a small area of smooth surface against which a vacuum can be pulled. Even materials with moderately rough surfaces can be used if previously coated with a thin film of high-vacuum grease. Once the sample has been collected, it may be removed for analysis by use of a hypodermic syringe or by means of tubing that connects the sampler directly to analytical instrumentation or apparatus. Sampling is performed by supporting the packaging material by means of vacuum and drawing it away from the contents of the package. A piercing lever causes the package to be punctured, causing the gas inside the package to rush into an evacuated sample chamber.—J.S. (Beckman, Scientific and Process Instruments Div., 2500 Harbor Blvd., Fullerton, Calif.)

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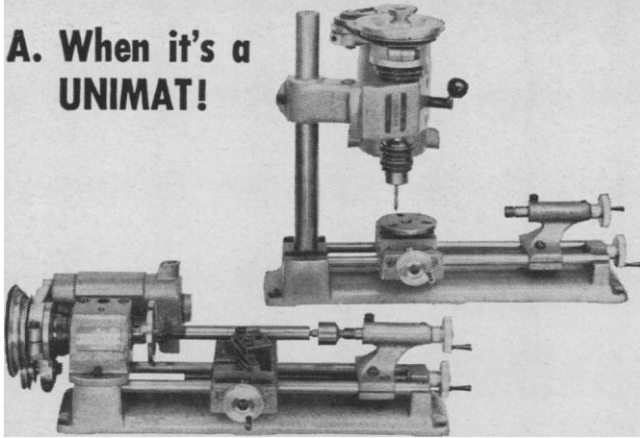
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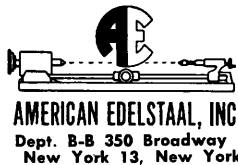
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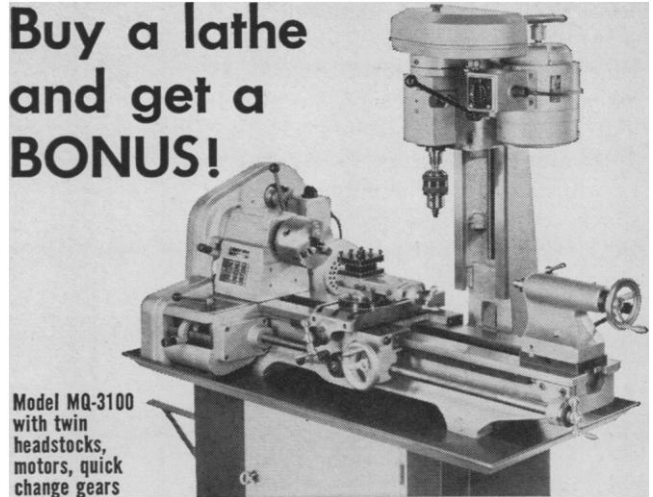


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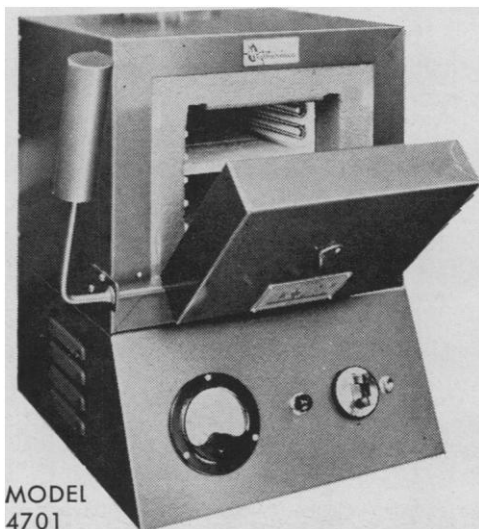
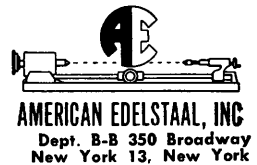


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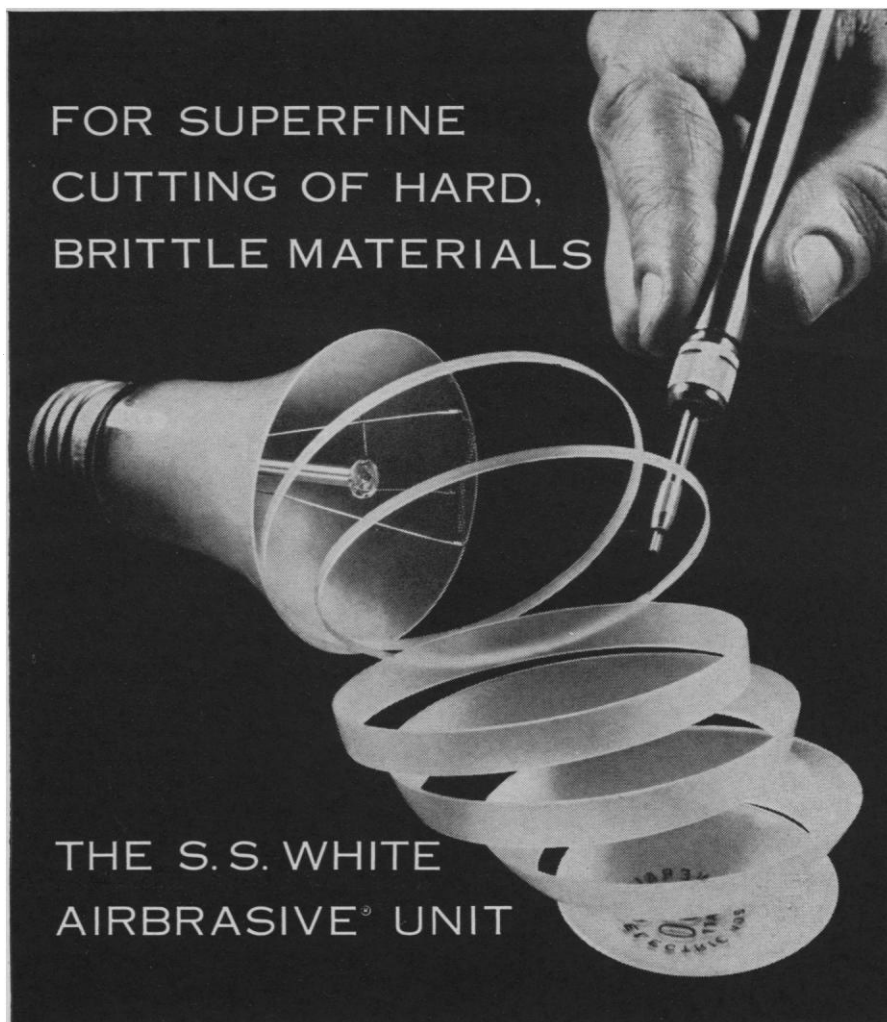
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Address correspondence to **Head, Department of Biology, Dalhousie University, Halifax, N.S., Canada.**

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Applications, including curriculum vitae, statement of research interests and aims, recent photograph, names and addresses of two referees, should be sent to **Professor C. J. Hickman, Head, Department of Botany, University of Western Ontario, London, Ontario.**

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Vertebrate Zoologist—to teach courses in Comparative Vertebrate Anatomy and Histology/Embryology. Preference will be given to candidates with research interests in the fields of vertebrate taxonomy, morphology or embryology.

Marine Ecologist—to teach a course in Marine Ecology and one other. Preference will be given to zoologists with research interests in the benthos or in zooplankton.

Marine Botanist—to teach a course in Phycology or Mycology and one other. Preference will be given to candidates with marine research interests.

The above appointments may be at the Associate Professor, Assistant Professor or Instructor rank, depending on qualifications and experience. Initial salary will be not less than \$9,000, \$7,000, or \$5,500 per annum, respectively. Duties commence September 1st, 1964.

Applications should include biographical information, a curriculum vitae, the names of three references (from whom letters should be sent direct), a recent photograph and statement of salary expected. Transcripts of academic records will be required.

Applications should be sent to **W. Gordon Fields, Department of Biology, University of Victoria, Victoria, B.C., Canada.**

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The successful applicant will be required to give a course in advanced Physical Chemistry, and in addition assume supervision of two laboratory courses in Physical Chemistry. Some formal lectures will be necessary to provide a suitable theoretical background for the laboratory work.

Applicants should have completed all the requirements for the Ph.D. degree. It may be possible, in a few instances, to arrange for a personal interview at the department's expense.

Applications should be forwarded to **Prof. A. C. Cuthbertson, Department of Chemistry, Box 133, Sackville, N. B., Canada.**

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The annual course in Principles and Techniques of Tissue Culture sponsored by the Tissue Culture Association will be given at the University of Wisconsin, Madison, Wisconsin, 22 June to 16 July 1964. A limited number of participants (postdoctoral research workers and teachers) can be admitted. The course will be directed by Dr. William G. Cooper. For further information and application forms, address Dr. William G. Cooper, University of Colorado Medical Center, 4200 East 9 Avenue, Denver, Colorado, 80220. Tuition \$100. Deadline for application: 15 April 1964. X

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BOOKS AND MAGAZINES

SCIENCES IN COMMUNIST CHINA

Edited by S. H. Gould, AAAS Publication No. 58, 1961, 884 pp. \$14.00 (AAAS members' cash price \$12.00).

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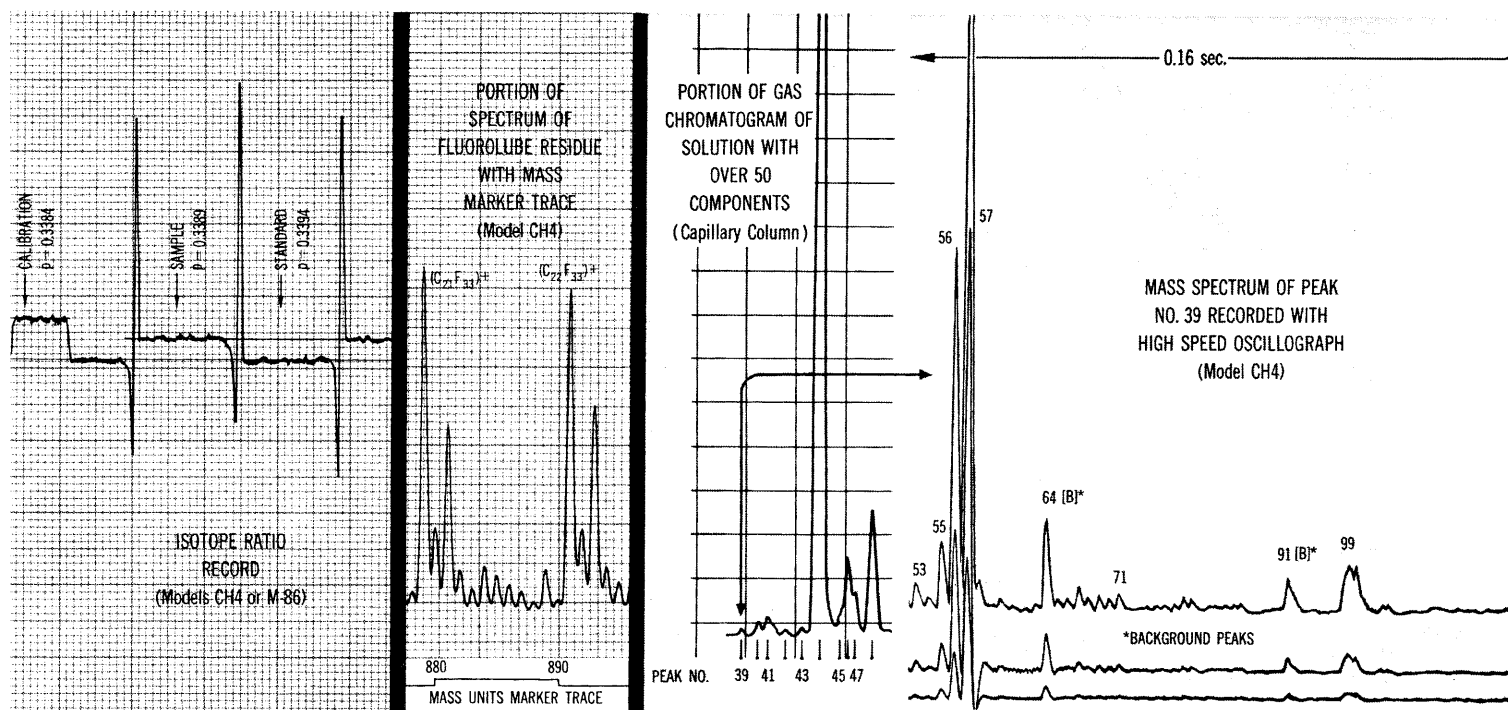
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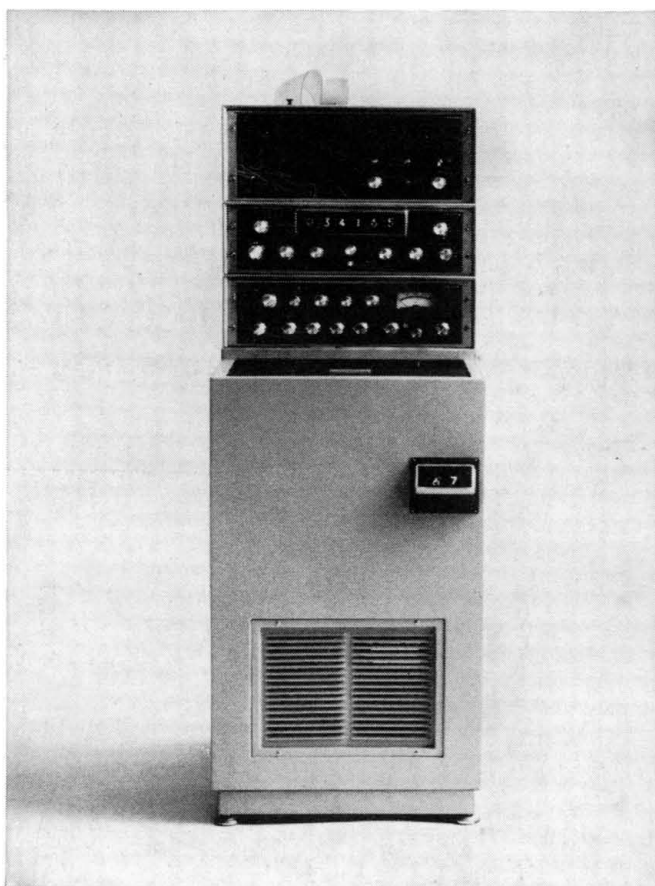
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