

Industries, Texas A&M symp., College Station. (P. T. Eubank, Dept. of Chemical Engineering, Texas A&M Univ., College Station)

20-21. **Anharmonic Phonon Interactions** in Solids, Princeton Univ., Princeton, N.J. (W. B. Daniels, Dept. of Solid State Sciences, Princeton Univ., Princeton, N.J.)

20-22. **Regulation of Antibody Response**, intern. symp., Toronto, Ont., Canada. (B. Cinader, Subdivision of Immunochemistry, Univ. of Toronto, Toronto, Ont.)

20-22. **Diabetes** in the Tropics, world Congr., Bombay, India. (Organizing Secretary, Diabetic Assoc. of India, Maneckji Wadia Bldg., Mahatma Gandhi Rd., Bombay 1)

20-22. **Symmetry Principles at High Energy**, conf., Univ. of Miami, Coral Gables, Fla. (D. R. Lehman, Air Force Office of Scientific Research, Tempo D, 4th and Independence Ave., SW, Washington, D.C.)

21-22. **Physiology of Hemostasis and Thrombosis**, 14th annual Wayne State Univ. symp. on blood, Detroit, Mich. (W. H. Seegers, Dept. of Physiology and Pharmacology, Wayne State Univ., Detroit)

22-27. **American Acad. of Orthopedic Surgeons**, Chicago, Ill. (J. K. Hart, 29 E. Madison, Chicago 2)

23-28. **American Library Assoc.**, mid-winter mtg., Chicago, Ill. (D. H. Clift, ALA, 50 E. Huron St., Chicago 60611)

24-26. **Aerospace Sciences**, 3rd mtg., American Inst. of Aeronautics and Astronautics, New York, N.Y. (AIAA, 1290 Sixth Ave., New York 10019)

24-26. **Economic Geology** in Massachusetts, conf., Amherst. (O. C. Farquhar, Geology Dept., Univ. of Massachusetts, Amherst 01003)

24-27. **Modern Methods of Analytical Chemistry**, 19th annual, Louisiana State Univ. symp., Baton Rouge. (P. W. West, LSU, Baton Rouge)

24-27. **American Soc. of Heating, Refrigerating, and Air-Conditioning Engineers**, semiannual mtg., Houston, Tex. (ASHRAE, 345 E. 47 St., New York)

24-27. **American Meteorological Soc.**, 46th annual mtg., Denver, Colo. (K. C. Spengler, AMS, 45 Beacon St., Boston, Mass.)

24-28. **Animal and Clinical Pharmacologic Techniques in Drug Evaluation**, part 1, mtg., Philadelphia, Pa. (J. H. Nodine, Hahnemann Medical College and Hospital, 230 N. Broad St., Philadelphia 19102)

24-30. **CNS-Drugs**, symp., Regional Research Laboratory, Hyderabad, India. (P. B. Sattur, Regional Research Laboratory, Hyderabad 9)

25. **Research and Industrial Applications of the Mössbauer Effect**, New York, N.Y. (M. Röss, New England Nuclear Corp., 575 Albany St., Boston, Mass.)

25-27. **Reliability**, 12th annual symp., Inst. of Electrical and Electronics Engineers, San Francisco, Calif. (A. R. Park, General Precision Inc., 1378 Encinitas Rd., San Marcos, Calif.)

26. **Current and Future Problems in Chemistry at High Temperatures**, Rice Univ., Houston, Tex. (M. A. Paul, Div. of Chemistry and Chemical Technology, National Acad. of Sciences, Washington, D.C. 20418)

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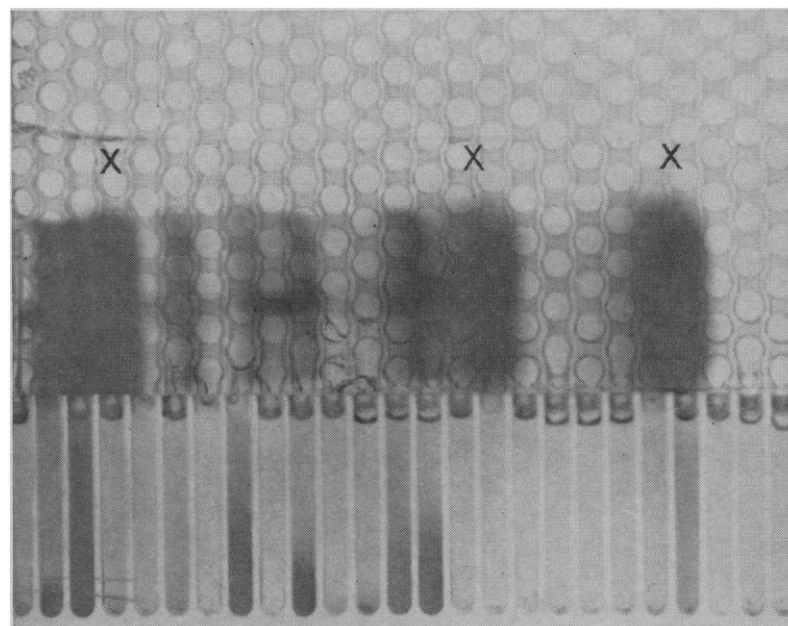
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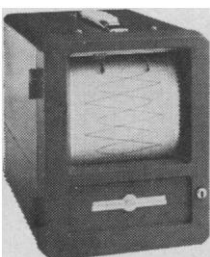
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**Biomathematician, Ph.D.** Interested in cellular kinetics of growth and regeneration. Box 206, Jordan, New York. X

**Biomedical Information Specialist**, science editor, or similar nonlaboratory position: Career change wanted by experienced research physiologist-biochemist, Ph.D. 1959, comprehensive education, broad interests. East Coast preferred. Box 321, SCIENCE. X

**General Physiologist, Ph.D.** seeks teaching-research position. Box 312, SCIENCE. 1/7, 14, 21, 28

**Microbiologist, Ph.D.**, academic, industrial experience, publications, patent; desires teaching, research, administrative position; water, waste, fermentation microbiology, environmental sciences; university, government, industry. Box 313, SCIENCE. X

**Microbiologist, Ph.D. 1962**; postdoctoral fellow-immunology, desires teaching/research position; Eastern U.S. Publications. Available 1 February 1966. Box 314, SCIENCE. X

(a) **Microbiology Ph.D.**; contagious disease, cancer research experience; prefers virology research appointment. (b) **Biology Ph.D.**; Zoology M.A.; radiation research, university anatomy-pathology teaching experience; desires research, teaching or commercial opportunity. Write **Woodward Medical Personnel Bureau**, 185 North Wabash, Chicago 60601 X

**Physical-Chemist (Ph.D.)**, B.S. (Chemical Engineering) wishes to apply theoretical training to the interpretation of biological phenomena. Strong background, both experimental and theoretical, in kinetics, catalysis, and membrane systems in physical and biological areas. Not adverse to devoting parttime to administrative and supervisory details. Box 320, SCIENCE. X

**Physical Scientist, Ph.D.**, substantial senior level industrial experience desires administrative position with academic institution or foundation. Box 319, SCIENCE. X

31 DECEMBER 1965

## POSITIONS OPEN

### ADVERTISEMENT FOR BOTANICAL POST

**BOTANIST** (Morphology, Anatomy, Morphogenesis)

Position vacant 1 Sept. 1966 in Biology Dept., University of Alberta, Calgary, Canada. Rank and salary open (base for Asst. Prof. \$8,200, Assoc. Prof. \$11,350, Prof. \$15,100).

Address applications to Prof. E. Gorham.

**Clinical Chemist** to head department in large laboratory. Academic appointment. B.S. degree with at least 4 years' experience. Salary range \$10,000 to \$12,500.

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### Graduate Study

Applications are invited for graduate study in Biological Structure. The major areas available for study include cytology, electron microscopy, embryology, gross anatomy, histology, neuroanatomy and neuroendocrinology, radioactive tracer biology, reproduction, and X-ray diffraction. Only applicants with high scholastic achievement will be considered. Teaching assistantships and research fellowships carrying a stipend of \$292 per month are available in limited number to those who qualify. For information and application forms write **Chairman, Graduate Affairs Committee, Department of Biological Structure, University of Washington, Seattle, Washington 98105**

### MOLECULAR BIOLOGY OR CELL PHYSIOLOGY

The Department of Biology, University of Alberta at Calgary, invites applications for a position in the areas of molecular biology or cell physiology. Applicants should be prepared to teach introductory and advanced courses in molecular biology and to develop a research programme in this field. Appointment will be at the rank of assistant or associate professor (bases of salary ranges: \$8,200 and \$11,350).

A curriculum vitae and the names of three referees should be sent to Professor E. Gorham, Department of Biology, University of Alberta at Calgary, Calgary, Alberta, Canada.

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(a) **Senior Research Biochemist**, metabolic studies, large drug mfr; W: \$14,000 to 16,000; (b) **Microbiologist** direct dept leading medical research institute; E: \$15,000 to 20,000; (c) **Biochemist**, direct dept large expand hosp; develop research program; MidW: \$15,000 to 20,000; (d) **Chemotherapy Group Leader**, DVM or Bacteriology Ph.D.; infectious disease research; drug mfr, E: \$14,000; (e) **Biophysicist**, develop teach & research program; SE: \$13,000 up; (f) **Biology Asst Prof** teach genetics; develop new course, state college Calif.; \$9,000 up. Write **Woodward Medical Personnel Bureau**, 185 N. Wabash, Chicago 60601.

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**Inquiries invited for Headship, Department of Chemistry, September 1966.** Substantial staff expansion anticipated and new, attractive facilities under construction. Please address inquiries to:

**Dean, Graduate School**  
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Cincinnati, Ohio 45221

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Box 322, SCIENCE

The **Biophysical Society** will again operate its **Placement Service** during the **10th Annual Meeting Boston, Massachusetts, 23 to 25 February 1966**. This service is available throughout the year at no cost. Candidates for positions and those with positions available may get information and registration forms from **Dr. Irving Gray, Department of Biology, Georgetown University, Washington, D.C. 20007**.

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Applications should be accompanied by a recent photograph and a full curriculum vitae, including academic qualifications, experience in teaching and research, a list of publications and the names of two referees.

Two copies of the application must be sent to the **Secretary-General, Association of Commonwealth Universities (Branch Office), Marlborough House, Pall Mall, London S W.1.** not later than 31 January 1966. A third copy must be sent direct to the **Registrar, University of Cape Town, Private Bag, Rondebosch, Cape Town, South Africa,** by the same date.

Details of the facilities for marine research in Cape Town are set out in a memorandum which is obtainable from the **Association of Commonwealth Universities.**

The University reserves the right to appoint a person other than one of the applicants or else make no appointments.

Career opportunities for investigators in Nuclear Medicine Division, for faculty in Special Training Division, and for science lecturers in Information and Exhibits Division. Programs are national and international in scope.

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Among the topics to be discussed will be satellite gravity results for the Earth, radar methods for the rotation of the inner Planets, space vehicles photography of the Lunar and Martian surfaces, and their significance to the general problem of the evolution of these bodies.

Invitations are extended to senior workers interested in these fields to participate in the discussions.

Students and postgraduate students in physics, mathematics, geology, geophysics and astronomy are invited to apply, before 31 January 1966, for grants (including travel grants) to enable them to attend this meeting.

Further details and registration forms are obtainable on application to: **Administrative Assistant, School of Physics, The University, Newcastle upon Tyne, 1, England.**

## FELLOWSHIPS

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### INTRODUCTION TO GENERAL PATHOLOGY

for graduate students and investigators  
who do not have a medical background

June 20-July 8, 1966

**HARVARD MEDICAL SCHOOL, Boston, Mass.**

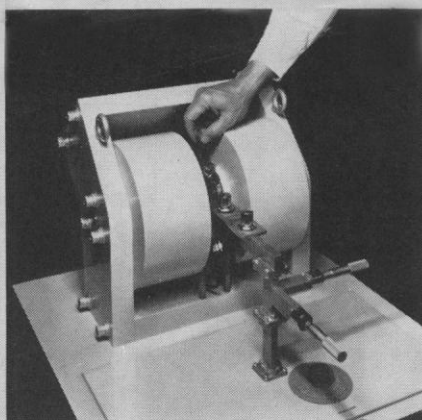
The course will be geared to graduate students and Ph.D.'s. It is intended to present the most important areas of General Pathology to investigators in the biological field who do not have a medical background, and wish to become acquainted with the basic mechanisms of disease at the level of cells and tissues. (Staff: Drs. G. Majno, M. J. Karnovsky, Ruy Pérez-Tamayo, and members of the Pathology Department, Harvard Medical School)

Experimental methods will be emphasized. The course will consist of lectures, laboratories, and demonstrations. The following areas will be covered:

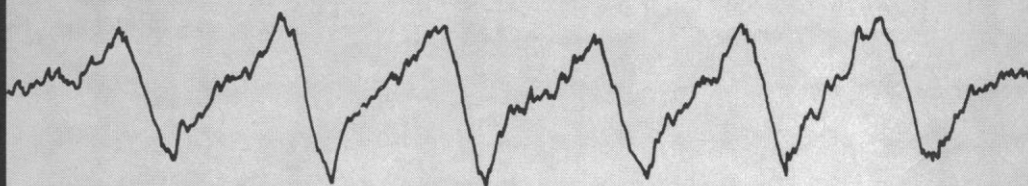
**DISEASE AT THE LEVEL OF CELLS — INFLAMMATION —  
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ALLERGY**

*No Tuition Fee. Information:* Dr. G. Majno (Summer Course), Department of Pathology, Harvard Medical School, 25 Shattuck Street, Boston, Mass. 02115.





Closeup of sampling area shows large, accessible sampling system of Model ESR-1. Controls are all convenient to the seated operator.



Metals of the transition series (e.g., manganous ions) occur in biological materials such as living bacteria, algae and in complex proteins. To detect these metals in aqueous samples the ESR spectrometer must have high sensitivity. The illustration shows the characteristic ESR signal of manganous ion consisting of six peaks—each separated by approximately 96 gauss. The observed signal-to-noise ratio for  $10^{-6}$  molar concentration is about 10:1. Sample volume was 0.16 ml and the run was made at a time constant of one second and 100 kc field modulation amplitude of 20 gauss. The klystron source operated at 9.0 Gc.

## DETERMINE FREE RADICALS IN SURVIVING TISSUE IN THE PRESENCE OF LIQUID WATER WITH THE NEW MODEL ESR-1

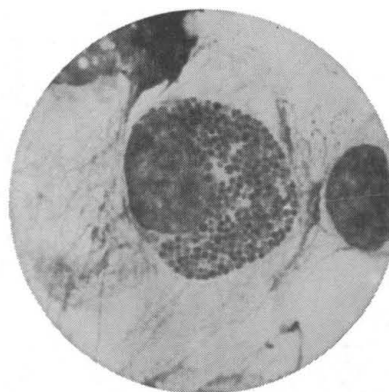
Electron Spin Resonance spectroscopy is a technique now being used by biologists, biochemists and organic chemists to gain valuable information—

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- about structural changes due to radiation damage to the molecule;
- and about the kinetic behavior of organic free radicals occurring as intermediates in a chemical reaction.

A unique feature of the new Perkin-Elmer Model ESR-1 Electron Spin Resonance Spectrometer is the microwave cavity design, which permits the detection of weak ESR signals in surviving tissue at life tem-

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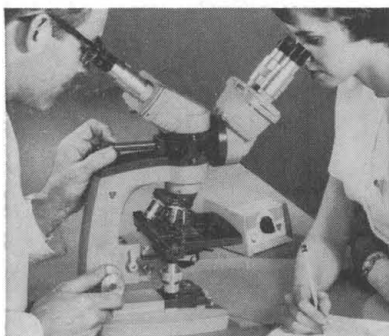


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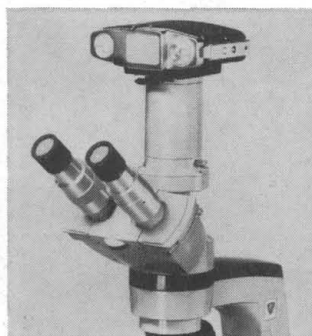
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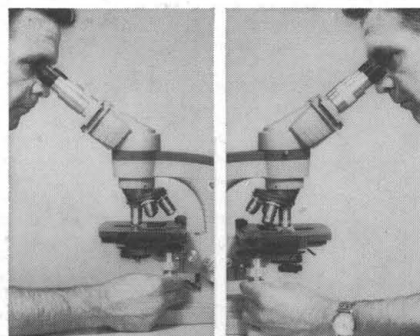
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