## A new edition of GENETICS

#### **IRWIN H. HERSKOWITZ**

Irwin H. Herskowitz has thoroughly revised and updated one of the most widely accepted undergraduate texts in the field. Completely rewritten for clarity and perused by experts, this second edition provides substantive additions in both the classical and modern sections including information on the recent advances in human, corn, and Drosophila genetics and in our understanding of the genetic code and the regulation of gene synthesis and action.

Suggestions from users all over the country as well as changes in the literature up to 1965 are reflected in the additional statistical material, new illustrations and several additions to various sections such as the complete story of hemoglobin genetics and molecular evolution; linkage maps of man, maize, mouse, Neurospora; the life cycles of Drosophila, maize, Neurospora; and much more. A new appendix on Elementary Biometrical Inferences and expanded and revised Question-Problem sections have also been added.

#### Little, Brown and Company



In cloth  $7\frac{1}{4} \times 9\frac{3}{4}$ 712 pages

34 Beacon Street Boston, Massachusetts 02106 PERSONNEL PLACEMENT POSITIONS WANTED **POSITIONS WANTED** POSITIONS OPEN **Biochemist, Ph.D.** Medical research; cancer, metabolic studies, isotopes. Desires research/ clinical chemistry at university. Box 95, SCI-ENCE. Physical Anthropology graduate student desires summer position in anthropology, genetics, public health, medical research, or related fields in New York City area. Box 99, SCIENCE. X **GOVERNMENT OF NEW ZEALAND** Vacancy for Scientific Officer or Senior Sci-entific Officer, Taieri Soil Research Station (Va-cancy No. 9/65/636). Salary: Up to £1805 per annum according to qualifications and experience. Qualifications required: M.Sc. or B.Sc. in chem-istry. **Biochemist, Ph.D.** (organic chemistry, 1957) with strong biological interests seeks academic research and/or teaching position. Experience: lipids, pesticides. West or New England. Box 92, SCI-ENCE. X POSITIONS OPEN Qualifications required: M.S.C. & D.S.C. and istry. Duties: Research in soil fertility and plant mutrition. To assist in the development of soil and plant analysis as methods of deficiency diagnosis. An interest in instrumentation and a knowledge of flame photometric techniques would be an asset advantage. Accommodation: Available at Taieri for a single or married appointee. BIOCHEMIST (Ph.D.) British Synthetic Organic Ph.D. (1954), U.S. resident, seeks permanent position, U.S. or overseas, with technical and administrative responsibilities and authority, or nonlaboratory situation where intelligence and scientific knowledge are prime assets. \$15,000. Box 91, SCIENCE. X For work on nucleic acid studies ob-tained from mammalian cells. Placement Secretary Worcester Foundation for Experimental Biology Shrewsbury, Massachusetts Accommodation: Available at falleri for a single or married appointee. Applications close on 26 April 1965 and should be addressed to the New Zealand Embassy, 19 Observatory Circle, NW, Washington, D.C. 20008. Microbiologist, Ph.D.; 5 years' research-administrative experience in government and industry. Chemotherapy, immunology, genetics. Publica-tions. Seeks responsible position. Box 90, SCI-ENCE. X An Equal Opportunity Employer BOTANIST New Position. Teach botany courses and some general biology. **Pharmacologist (Ph.D.)** with administrative and laboratory experience seeks administrative position. Box 82, SCIENCE. VETERINARY ZOOLOGIST ZOOLOGIST Teach physiology, histology, general zoology. Ph.D.'s required. Liberal arts college. Excellent research facilities. \$7500 to \$9000 for initial 9 months plus supplement for optional 8-week summer course. Rank open. Begin 21 June or September 1965. Send curriculum vitae to: Chair-man, Biology Department, Loyola College, Balti-more, Maryland 21210. Ortho PATHOLOGIST ş (a) Pharmacology Ph.D., Physiology minor; CNS group leader experience; seeks neuropharmacology research appointment. (b) **Botany Ph.D.**, science teaching experience; available for teaching or research position. Write Woodward Medical Per-sonnel Bureau, 185 North Wabash, Chicago 60601. We have a new opening for a DVM with a M.S. or Ph.D. in pathology and 0-3 years experience to direct and con-duct toxicological and pathological research. He will be responsible for the Ph.D. Pharmacology research/teaching desired. Box 101, SCIENCE. 3/26; 4/2, 9 design of an experimental program for Ph.D. PHYSIOLOGY OR the evaluation of the safety of new drugs, direction of toxicology section and the examination and evaluation of **Ph.D. Plant Cytogenetics**, 1954, with experience in teaching and research, seeks teaching and re-search appointment. Box 102, SCIENCE. X PHARMACOLOGY New position created for recent graduate for undergraduate teaching and research duties. Salary and rank open, depending on qualification. Apply to *Dean*, **St. Louis College of Pharmacy**, **4588 Parkview Place**, **St. Louis**, **Missouri 63110**. pathological specimens. ACVP certifi-cation is desirable but not essential. Radioecologist, Ph.D. Available in September. Desire permanent teaching/research position. Box 93, SCIENCE. X ORTHO is a pharmaceutical and diag-Veterinarian with Ph.D. (bacteriology, dairying, biochemistry). Experience in immunochemistry and mastitis. Publications. Seeks research/teach-ing position. Academic/research institution. Age 26. Box 97, SCIENCE. X nostic reagent firm. We lead the indus-try in our fields of interest and are involved in a period of exceptionally rapid growth. Our research facility is TISSUE CULTURE, HISTOLOGY TECHNICIAN **TECHNICIAN** Live in sunny Palo Alto! Permanent position of responsibility open for person trained in histology and tissue culture procedures. Knowledge of autoradiography, nucleic acid or protein prepara-tive procedures, and isotope counting techniques desirable. Send dossier and references to N. K. Wessells, Department of Biological Sciences, Stanford University, Stanford, California 94305. 3/26 Virologist, M.S. Experience in tissue culture, immunology. Prefers research position, Midwest. Box 79, SCIENCE. X located in an attractive suburban community 1½ hours from New York City & Philadelphia. Publication of work & Zoologis Ph.D., 15 years' teaching and re-search experience. Protozoology, cell physiology, biology. Broad-progressive interests and back-ground. Seeks summer and/or permanent teach-ing, administrative position. Box 96, SCIENCE, attendance at scientific meetings are encouraged. Group insurance, retirement. & stock investment plan are provided. Relocation expenses paid. UNIVERSITY OF GUELPH TWO ZOOLOGISTS SEND RESUME TO Mr. L. F. SIMPKINS **Zoologist:** 4 years of graduate school beyond M.S., 1 year of federal research experience, 5 years of full-time college teaching experience. Grants and publications in sensory physiology and animal behavior. Desires academic teaching position with research opportunity. Mid-Atlantic or New England preferred. Box 94, SCIENCE 3/26 ORTHO Pharmaceutical Corp. ROUTE 202 RARITAN, N.J. (An Equal Opportunity Employer)

19 MARCH 1965

TWO ZOOLOGISTS Salary open and commensurate with experience. Proven research experience in modern biology prerequisite to appointment. Applications should be submitted by 30 May 1965 to: *Professor K. Ronald, Chairman* Department of Zoology University of Guelph Guelph, Ontario, Canada

POSITIONS OPEN

ASSISTANT PROFESSOR IN BIOLOGY ASSISTANT PROFESSOR IN BIOLOGY Recent Ph.D. with broad zoological background and some teaching experience to assume major responsibility for undergraduate instruction in cytology and genetics, and histology or compara-tive anatomy. Ample opportunity to conduct individual research or participate in departmental research programs. Send résumé to: Chairman, Biology Department, Philadelphia College of Pharmacy and Science, Philadelphia, Pennsylvania 19104. 19104.

#### BOTANIST

To teach general courses, physiology, anatomy, and genetics. Begin September 1965, as assistant or associate. Ph.D. preferred. Salary: \$7000 to \$9000 for 9 months. Liberal arts college of 1300. Excellent situation. Permanent position. Write Dean Sam Dahl, Nebraska Wesleyan University, Lincoln, Nebraska.

#### CHIEF TECHNICIAN

Pathologist wishes experienced indi-vidual to assist in development of private hospital-group clinic laboratory, midwest-ern city. Salary open.

**Box 87, SCIENCE** 

#### Groundwater and Glacial Geologist

Groundwater and Glacial Geologist The University of Alberta in Edmonton is seek-ing a geologist with a strong background in the fields of groundwater geology and glacial geol-ogy. The appointment will probably be at the assistant professor level, with starting salary \$000 for a recent Ph.D. Appropriate compensa-tion will be made for additional experience. Re-search encouraged. Write to *R. E. Folinsbee*, *Chairman, Department of Geology*, University of Alberta, Edmonton, Alberta, Canada.

Medical Director for solid, growing national health organization. Excellent salary, good op-portunity for creating and supervising basic sci-ences research program with full cooperation of volunteer medical committee. Experience neces-sary in comparable field and/or public health administration. Send full particulars. We will call you for an interview.

Box 86, SCIENCE

Predoctoral Assistantships and Traineeships in Physiology. Excellent opportunities for graduate students leading to the Ph.D. Ample stipends and free tuition. Training and research in bio-physics, cellular physiology, endocrinology, mus-cle, water metabolism, cardiovascular, gastroin-testinal. For details write to *Head*, *Department of Physiology*, University of Illinois at the Medical Center, Chicago, Illinois 60612. 3/19; 4/2

#### **RESEARCH PHARMACOLOGIST**

Hazeton Laboratories, a leading independent company specializing in the life sciences, needs a pharmacologist (B.S. or M.S.), with a mini-mum of 5 years' experience, preferably in the pharmaceutical industry. Please

eutical industry. send résumé to: Hall A. Acufi Assistant Personnel Manager Hazleton Laboratories, Inc. P.O. Box 30 Falls Church, Virginia (Suburban Washington, D.C.) An Equal Opportunity Employer An

OPPORTUNITIES WITH OAK RIDGE INSTITUTE OF NUCLEAR STUDIES TO PARTICIPATE IN EDUCA-TION AND RESEARCH PROGRAMS OF NATIONAL AND INTERNATIONAL INTEREST CONCERNING ATOMIC ENERGY AND ASSOCIATED SCIENCES

Information and Exhibits Division

- Science Administrator Ph.D. in physical science to participate in division policy making activities, program content and training, and administration and organization functions. Salary to \$18,000, depending upon experience.
- Science Lecturers B.S./M.S. in Science or Sci-ence Education to provide lecture dem-onstrations in secondary school assem-blies and science classrooms. Prefer single male. Base salary \$5800-\$6400.

Send résumé to: Personnel Office Oak Ridge Institute of Nuclear Studies P.O. Box 117 Oak Ridge, Tennessee

1486

#### POSITIONS OPEN

(a) Anthropologist, good bone structure, marrow, etc. experience; bone growth research; Central hospital; around \$12,000. (b) B.S./M.D. Bacteriology, biological production experience; super-visory; midwestern house. (c) Biochemical Research Assistant, Central Medical school; to \$6000. Faculty Appointments: (d) Chairman, natural science; East. (e) Chairman, biology; Southeast. (f) Ph.D. Aquatic Biologist; East. (g) Ph.D. Microbiologist, medical; biochemistry/genetics training; Midwest. (h) Ph.D. Zoologist (embryology, comparative anatomy); Southeast. (i) Ph.D. Botany, plant physiology; East. Please write Science Service, The Medical Bureau, Inc., 900 North Michigan Avenue, Chicago, Illinois 60611. X (a) Anthropologist, good bone structure, marrow

#### **RESEARCH ORGANIC CHEMIST**

Unusual opportunity for an imaginative scientist with experience in the application of analytical instrumentation to biochemical investigations. Offered by a rapidly growing, medically oriented, commercial organization in Florida. Salary commensurate with qualifications.

**BOX 89, SCIENCE** 

#### **RESEARCH SCIENTISTS**

fnr

## Atomic Energy of Canada

Commercial Products in Ottawa is responsible for the commercial applications of radioisotopes and radiation, together with the basic research supporting these activities.

As the result of a continuing expansion of staff and facilities, this group has a number of appointments at the post-graduate level in the fields of Chemistry, Physics (Nuclear and Solid State), Biology, and Metallurgy. Emphasis is stressed on the theoretical and experimental aspects in all areas.

Enquiries will receive prompt attention and should be forwarded together with the usual details of education and experience to:

Personnel Officer, Atomic Energy of Canada Limited, **Commercial Products**, Box 93 Ottawa, Ontario

## University of Newcastle upon Tyne **Chair of Psychology**

APPLICATIONS are invited for the newly established Chair of Psychology. The successful candidate will be asked to take up appointment as early as possible in the academic year 1965/66. Salary in accordance with the professorial scale  $(\pounds 3,400 \times \pounds 125 - \pounds 4,025 \text{ per annum})$  with membership of F.S.S.U.

Further particulars may be obtained from the undersigned with whom applications (15 copies), together with the names of not more than three persons to whom reference may be made, must be lodged not later than Saturday, 24th April 1965. (Applicants from outside the British Isles may submit one copy only.)

E. M. Bettenson Registrar University of Newcastle upon Tyne 6 Kensington Terrace Newcastle upon Tyne 2, England

#### **FELLOWSHIPS**

## **BIOLOGISTS**

Teaching fellowships available in 1965-1966 for male college graduates in small New England Liberal arts college for men. Opportunity for study; \$4,000.

**Box 100, SCIENCE** 

PREDOCTORAL AND POSTDOCTORAL FELLOW-SHIPS IN THE BASIC SCIENCES, AS RELATED TO THE NERVOUS SYSTEM, BEHAVIOR, AND MENTAL FUNCTIONS. Graduate work leading to the Ph.D. degree is offered in Anatomy, Biochemistry, Physiology and Pharmacology. Postdoctoral fellowships at various levels are available in these departments as well as Psychology and Psychiatry. Training includes both independent research in such areas as neuroanatomy, neurochemistry, behavioral and electro-neurophysiology, experimental psychology and psychopharmacology and par-ticipation in regular interdisciplinary seminars. Fellow-ships cover both support and research expenses. For more detailed information, write:

Interdisciplinary Training Program, University of Cali-fornia San Francisco Medical Center, San Francisco, California 94122

# The Market Pla

BOOKS · SERVICES · SUPPLIES · EQUIPMENT

### PROFESSIONAL SERVICES

#### WASHOE PINES RANCH

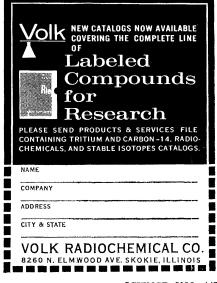
Challenging and refreshing outdoor summer r alert boys and girls, 9 to 11, 12 to 14. Explore western and natural history in the astern Sierra and Great Basin. for

Riding, swimming, experimental ecology, crafts. Field work to deserts, mountains, lakes, wild life refuges, and a National Park. Six-week session, 18 July to 29 August.

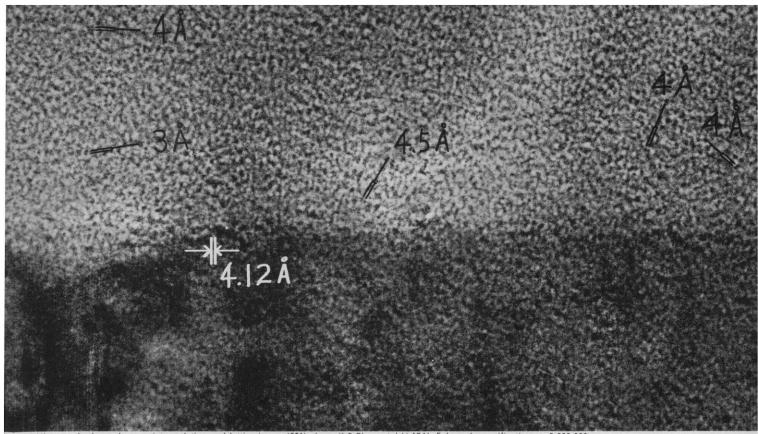
Dr. and Mrs. Richard G. Miller, Box 621, Route 1, Carson City, Nevada. 702-882-1728.

#### SUPPLIES AND EQUIPMENT

SPRAGUE-DAWLEY, INC. Pioneers in the development of the STANDARD LABORATORY RAT. P.O. Box 4220 Madison, Wisconsin CE 3-5318



SCIENCE, VOL. 147



Micrograph above shows point resolution and lattice image (001) planes  $K_2PtCI_4$  crystal (4.12A). Enlarged magnification = 2,000,000

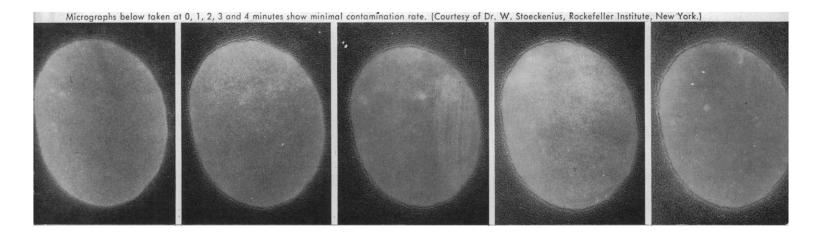
# No. 3 in a Series **ADVANCES IN ELECTRON MICROSCOPY**

As research in the life sciences and solid state physics accelerates, ultra high resolution electron microscopy assumes an increasingly important role as a source of fundamental new information. Recently, scientists at the Hitachi Central Research Laboratory have announced new discoveries in electron optics which are being incorporated in their latest designs. The five electron micrographs below of a tiny (0.05 micron) hole in collodion film were taken at equal intervals during a four minute period. They demonstrate the remarkable performance of the new Hitachi HU-11B Electron Microscope. Careful measurements on the original plates indicated (a) At the direct magnification of 250,000, better than 5Å resolution was maintained for each exposure (b) Electronic stability was better than 2 in 10<sup>6</sup> for four minutes (c) The specimen contaminated at a rate of less than 0.5 angstroms per minute.

With this constancy of performance, ultra high resolution micrographs can now be obtained similar to that shown above. The (001) lattice image of  $K_2$  Pt Cl<sub>4</sub> Crystal with 4.12 Å spacing is resolved while on the same plate point-to-point resolution of particles as close as 3Å is obtained. This is the highest point resolution yet demonstrated by any electron microscope, approaching the dimensions of single atoms.

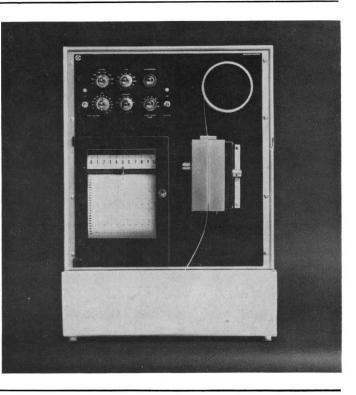
A complete set of these micrographs and details on the Model HU-11B can be obtained from the Perkin-Elmer Corporation, Distributor Products Department, **723** Main Avenue, Norwalk, Conn., exclusive sales and service representative for Hitachi Electron Microscopes in North America.

## PERKIN-ELMER



Does our new Actigraph III have all the features you need for paper radiochromatography?

Yes, plus several you may never have expected.



Convenient, simple loading and transport mechanism	Exclusive paper magazine for fast, simple loading. / Accomodates all papers from Whatman 3MM to acetate electrophoresis strips ( $\frac{1}{2}$ -inch to 2-inches wide). / Foolproof paper-strip transport with constant-speed drive offers fingertip selection of speeds. / Vertical paper travel minimizes both detector and window contamination.
Efficient, 4-pi dual detectors	Dual detectors scan both sides of paper to give 4-pi detection geometry. / Choice of windowless or ultra-thin window operation. / Four collimator slit widths to produce desired resolution. / De- tectors feature reduced gas consumption for economy.
Versatile, easy-to-operate ratemeter controls	All solid-state control circuits for long-term reliability and sta- bility. / Ratemeter offers 19 count-rate ranges and 6 response- time constants—all front-panel controlled.
Precise data-readout options	Graphic recorder with one-knob control of speed synchronized with strip-transport speed. / Also available with Digital Integrator for quantitating counts in radioactive peaks. / Optional dual- channel recording facilities.
A DIVISION OF NUCLEAR-CHICAGO CORPORATION 349 Howard, Des Plaines, Ill. 60018 U.S.A. In Europe: Donker Curtiusstraat 7 Amsterdam W, The Netherlands	Discover how ACTIGRAPH <sup>®</sup> III—another in the BIOSPAN <sup>TM</sup> series of systems designed to meet specific counting requirements—can bring time-saving convenience to your work. Consult your Nuclear-Chicago sales engineer or write us for full information. Scientists and engineers interested in challenging career opportunities are invited to contact our personnel director.