the department of sociology at the University of California, Riverside, on 1 July.

Sheldon Wolff has become professor of cytogenetics and a research cytogeneticist at the University of California Medical Center, San Francisco. He had been on leave from Oak Ridge National Laboratory as visiting professor of radiation biology at the University of Tennessee.

Louis J. Battan, professor of meteorology and associate director of the Institute of Atmospheric Physics at the University of Arizona, has been elected president of the American Meteorological Society.

Whittie J. McCool, in the division of operational safety of the Atomic Energy Commission, has been appointed the AEC's scientific representative in Tokyo, succeeding Peter A. Morris, who has returned to the U.S. to become director of the division of operational safety.

#### Recent Deaths

William Parker Anslow, Jr., 53; professor and former chairman of the department of physiology at the University of Virginia medical school; 17 March.

Howard Coonley, 89; former director of the American Standards Association and first president of the International Organization for Standardization; 25 February.

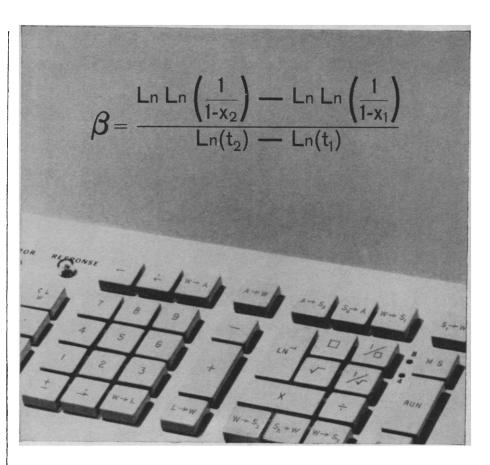
**Enrique E. Ecker**, 79; professor emeritus of immunology at Western Reserve University; 5 March.

Franklin Hollander, 67; chief of the gastrointestinal physiology research laboratory at Mount Sinai Hospital, New York; 24 March.

Alfred N. Richards, 90; professor emeritus and former vice president of medical affairs at the University of Pennsylvania; president of the National Academy of Sciences, 1947–1950; 24 March.

**Joel Stebbins**, 87; director emeritus of the Washburn Observatory, University of Wisconsin; 16 March.

Erratum: In the report "Radiocarbon samples: chemical removal of plant contaminants" by C. V. Haynes, Jr. [151, 1391 (18 March 1966)], the word "no" was erroneously omitted from the first sentence of the fourth paragraph. The paragraph should have begun, "To test the method further, an artificial sample was prepared by mixing 8.18 g of charcoal that had no C<sup>14</sup> activity. . . ."



# You can solve for β in seconds...with LOCI-2

LOCI-2, the most powerful desk-top computer ever devised, makes short work of expressions like this one for failure rate coefficient  $\beta$ . This new programmable instrument provides broad computer capabilities combined with the immediacy and simplicity of a slide rule. Designed specifically for the personal use of scientists and engineers, LOCI-2 owes its computational power to the fact that it utilizes an absolutely unique logarithmic approach to data manipula-

tion which results in extraordinary versatility and simplicity of operation.

LOCI-2 is programmed by means of prescored tab cards (no keypunch needed). It is furnished with a total of 19 storage registers, which provide a program flexibility exceptional for a unit of desk-top size. In the manual mode it may be operated as an extended calculator, capable



To solve for  $\beta$  in the above expression: with appropriate program card in the LOCL? reader?

1. Enter value for  $x_1$  (press "P $_{\alpha}$ " key)
2. Enter value for  $x_2$  (press "Run" key)
3. Enter value for  $t_1$  (press "Run" key)
4. Enter value for  $t_2$  (press "Run" key)
The value of  $\beta$  is automatically displayed.

of performing addition, subtraction, multiplication, division, and exponentiation, as well as taking logarithms and extracting roots. In the automatic, programmed mode, it has a flexible and powerful repertoire of commands with which iterative procedures are easily and compactly coded.\* There are also commands for making decisions and constructing program loops.

LOCI-2 is even used "online" as an extremely economical means of data acquisition and reduction,

in many applications such as controlling process variables, reduction of nuclear scaler readings, etc.

LOCI-2 prices range from \$2570 to \$8450. If you would like to learn more about this remarkable instrument, write for complete descriptive literature.

\*An extensive library of scientific and mathematical programs is furnished free of charge to LOCI-2 purchasers.



DEPT. 0-4. 836 NORTH STREET, TEWKSBURY, MASS. 01876 - TEL: (617) 851-7311

# INDEX TO ADVERTISERS

Academic Press		Friden, Inc.	267	Nikon Instrument Div., Subsidiary	
Ace Glass Inc.		Clas Cal Amazanton Ca	1.11	of Ehrenreich Photo-Optical	- 4
Alconox, Inc.	254	Glas-Col Apparatus Co	141	Industries, Inc.	
Allied Chemical Corp.,		TT 1 TYPE T 0 C T 0.42		Nuclear Data Inc.	
General Chemical Div		Hacker, William J., & Co., Inc. 243,		Nuclear-Chicago Corp	26:
American Optical Co		•	262		
Applied Physics Corp	147	Hewlett-Packard, Electroanesthesia Dept., Loveland Div.	256	Pace Engineering Co	
Baird-Atomic	269	Hyland Laboratories		Pfeiffer Research Instruments	
Bausch & Lomb 249, 259,				Pharmacia Fine Chemicals Inc.	
Beckman Instruments,		Instrumentation Specialties Co. Inc.	148	Phoenix Precision Instrument Co.	
Inc 118, 128, 139, 152,	154	International Equipment Co.		Photovolt Corp.	
Bendix Corp., Cincinnati Div.		international Equipment Cor		Polaroid Corp.	
Blackstone Ultrasonics, Inc.		Keithlev Instruments	245	Precision Scientific Co.	
Bronwill Scientific		•		Princeton Applied Research Corp.	
BRS Electronics		Mett Manufacturing Co., Inc.	250	Professional Tape Co., Inc.	
Die Liceromes	240	Labindustries	260	Trotessional Tape Co., Inc.	
Canal Industrial Corp. 238, 239, 240,	241	Lauda, Div. of Brinkmann	200	Radiochemical Centre	245
Chemical Rubber Co.		Instruments	237	Raytheon Co.	
Coleman Instruments Corp.		Lea & Febiger		Reeve Angel	
Coleman Instruments Corp.	137	Linde Div., Union Carbide Corp.		Revco Inc.	
Digital Equipment Corp.	127	LKB Instruments, Inc. 122, 140,		Royson Engineering Co.	
Disc Instruments, Inc.		Lourdes		Royson Engineering Co	200
Du Pont Co. 156,		Edulates	2,2	Sage Instruments, Inc.	241
Du Tont Co	157	Macalaster Scientific Corp.	254	Sanborn Div., Hewlett-Packard Co.	
E-C Apparatus Corp.	264	•		Saunders, W. B., Co.	
Economics Laboratory, Inc.		Matheson Co. Inc. 160,		Savant Instruments, Inc.	
Edmund Scientific Co.		McDonnell		Sorvall, Ivan, Inc.	
Electro-Mechanical Development	207	Measurement Research Center		Sorvan, Ivan, Inc.	143
Co	255	Mettler Instrument Corp.		Tenney Engineering, Inc	261
E & M Instrument Co., Inc.		Millipore Filter Corp.		Texas Instruments Inc.	
Esterline Angus Instrument Co.,	243	Mistaire Laboratories		Thermolyne Corp.	
Inc.	150	Wistaite Laboratories	200	rnermolyne Corp.	232
IIIC	130	Nalge Co., Inc.	253	Wong Laboratories Inc. 254	271
Flow Laboratories Inc.	121	9		Wang Laboratories, Inc 254,	
FIUW LADUFATORIES IIIC	131	National Appliance Co	213	Will Scientific, Inc.	203

If you want an automatic, refrigerated centrifuge with capacity to 3,300 ml and forces to 41,300 x G don't pay more than \$2,530.00

with the rotor included.

That's all you have to pay for a LOURDES Beta-Fuge A-2 "The best buy in centrifuges"

Write for Bulletin





# PERSONNEL PLACEMENT

## POSITIONS WANTED

Bacteriologist, 14 years of broad teaching experience. Recent postdoctorate. Desires teaching/research (immunology/virology) or administrative position. John Carr, Fresno State College, Fresno, Calif. 93726.

Biochemist, Ph.D., broad teaching experience; research publications in metabolism, enzymology, and microbial biochemistry. Desires teaching research position. Box 73, SCIENCE. 4/15

**Biochemist, Ph.D.** 1964, doctoral and postdoctoral training in protein chemistry. Teaching experience, publications. Desires teaching and/or research position. Available 1 July 1966. Box 30, SCIENCE.

(a) Biochemist Ph.D.; microbiology minor; metabolism research experience; available for academic appointment. (b) Biology Ph.D.; biochemistry minor; physiology M.S.; desires teaching or research opportunity. For details write WOODWARD MEDICAL PERSONNEL BUREAU, 185 North Wabash, Chicago 60601.

Marine Biologist, Ph.D., 1965, North Carolina State University. Age 29. Statistical training. Two years of teaching experience, ichthyology, ecology, general zoology. Publications pending. Desires teaching/research position in eastern state. Write Professor C. D. Rose, 45 Whittingham Place, West Orange, New Jersey.

Microbiologist, Ph.D., background includes research infectious diseases (chemotherapy and vaccines), veterinary and human aspects. Seeks challenging position. Box 75, SCIENCE.

Microbiologist-Virologist-Administrator, Ph.D., desires chairmanship or key academic position involving teaching, research, administration by summer 1966. Broad experience and publications. Box 76, SCIENCE.

Physician Writer/Editor, background experience includes pharmaceutical industry and advertising. Available for free-lance assignments. Box 69, SCIENCE. 4/8, 15

Physiologist, Ph.D. Experienced researcher mammalian reproduction, embryo development, genetics. Desires research/teaching position. Box 77, SCIENCE.

Protein Chemist, Ph.D. Interested in problems in microbiology and botany. Age 33. Available September 1966, desires teaching and/or research position. Two years postdoctoral research experience. G. Lew Choules, 7936 Paseo del Ocaso, La Jolla, Calif. 92037.

Scientist Engineer, successful aerospace systems engineer is seeking a career in a field with significant, challenging scientific problems. M.S. physics 1952, interested in Ph.D. Age 37. Intelligent, energetic, and exceptionally adaptable to new fields. Technical and organizational ability. Wide range of interests. Significance of problems is more important than specific field. Box 74, SCIENCE.

# POSITIONS OPEN

ONE VIROLOGIST and ONE IMMUNOLOGIST, Ph.D.'s experienced in Cancer Research. Permanent research position in privately endowed well-staffed, well-equipped Research Laboratory. You will participate in a cooperative research program and also money is available to initiate your own independent research program. Salary is above University level. Write to: Research Laboratories. Glenwood, Hills Hospitals, Minneapolis, Minnesota 55422 or phone 612-588-9401.

# POSITIONS OPEN

ASSOC. PARASITOLOGIST, Ph.D. (\$12,624). To conduct research. Temporary (Maximum 2 yrs.) Write to Parasitology Laboratory, Univ. Hawaii, 2525 Varney Circle, Honolulu, Hawaii 96822

The Botany Department of the University of British Columbia invites applications for an assistant or an associate professor in one of the following fields of study: plant biochemistry, morphogenesis, plant ecology and biophysics. Salary range from \$8,000 to \$10,000 depending on rank. Send application with complete curriculum vitae and names of referees to Dr. G. H. N. Towers, Head, Department of Botany, University of British Columbia, Vancouver 8, Canada.

Openings for histologist, cytologist or developmental biologist in State University with rapidly expanding biology program with new facilities soon available. Box 72, Science.

POSTDOCTORAL OPPORTUNITY IN BIOCHEMISTRY: Fellowships available to recent graduates in biochemistry, biophysics or organic chemistry, who desire specialized experience. Excellent facilities are available for studies in Mechanism of Hormone Action, Plasma Cell, or Lymphoid Tumors, Steroid Chemistry, and Connective Tissue chemistry. Submit curriculum vitae and references for and references to:

Dr. Vincent P. Hollander, Director Research Institute for Skeletomuscular Diseases, Hospital for Joint Diseases & Medical Center 1919 Madison Ave. New York, N.Y. 10035

## RESPIRATORY PHYSIOLOGIST

HAZLETON LABORATORIES, a leading in-dependent company specializing in the Life Sci-ences, needs a Ph.D. with 0-3 years' experience to conduct, design, coordinate, and evaluate ani-mal research programs in the field of respiratory physiology and inhalation toxicology. Opportunity for scientific meetings attendance and publica-tions. Liberal employee benefit program including profit sharing. Salary commensurate with experience and education. Please send resume to:

Hall A. Acuff Assistant Personnel Manager Hazleton Laboratories, Inc.

P. O. Box 30 Falls Church, Virginia 22046

An Equal Opportunity Employer

POSITIONS OPEN

**BIOCHEMIST** 

wanted by the State of Connecticut to direct the activities of a biochemistry laboratory. This is one of the major units in the Division of Health Laboratories. Requires a Doctorate degree in science with specialization in chemistry and I year's employment in biochemical, toxicological or other laboratory work involving biological tests applicable to the detection of industrial poisons. Applicants without Doctor's degree must have at least 8 years of the above experience.

Applications will be accepted thru May 10, 1966. For further information contact Don Heyward, State Personnel Dept., State Office Bldg., Hartford, Connecticut.

(a) Ph.D. Research Immunologist, endowed laboratory; Central; to \$13,000. (b) Ph.D. Pharmacologist, new pharmaceutical division; East; to \$15,000. (c) B.S. Biochemist, clinical; Mideast; \$9000. (d) Sanitary Engineer, industrial wastes; \$12,000. (e) B.S./M.S. Research Assistant, neurology; tuition benefits. Faculty Appoints: (f) Plant Physiology; East; \$10,500. (g) Zoologist-Physiologist, community college; East. (h) Embryologist, state college; East; to \$9000. (i) Ph.D. Physical Chemist, Southeast college. (j) Biology, small private college; Central; to \$10,000. SCIENCE SERVICE, The Medical Bureau, 900 North Michigan Avenue, Chicago, Illinois 60611. X

Predoctoral and postdoctoral (M.D.) traineeships in Biochemistry. Graduate appointments leading to Ph.D. and post-M.D. appointments for research training available for according to the product of the p

#### 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 endocrinology, gastrointestinal, water and electrolyte metabolism, cardiovascular, sensory physiology, biophysics and bioengineering. Write for details to:

Head, Department of Physiology
University of Illinois at the Medical Center P. O. Box 6598
Chicago, Illinois 60680

# 

**FELLOWSHIPS** 



# PLANT PHYSIOLOGIS'I

We are seeking someone to undertake secondary screening and field development of fungicides and growth regulators. Candidates should have an M.S. or Ph.D. with a combination of studies in Agronomy and Plant Physiology.

Liberal company benefits and starting salary Please send complete resume and salary requirement to: Mr. J. S. Laud — Personnel Administrator



MERCK & CO., INC.

Rahway, New Jersey

An Equal Opportunity Employer

#### POSTDOCTORATE FELLOWSHIP IN MICROBIOLOGICAL CHEMISTRY

The Research Council of Alberta, with laboratories on the campus of the University of Alberta, announces a fellowship for fundamental research related to lipid and hydrocarbon metabolism.

Applicants should have, or expect to have, a Ph.D. or equivalent degree before taking up the award. Fellowships are awarded on a one-year basis with a maximum tenure of two years. The appointment may be taken up any time during the year. The annual stipend is \$6,500 and is income tax free.

Please address inquiries to:

THE DIRECTOR OF RESEARCH RESEARCH COUNCIL OF ALBERTA UNIVERSITY CAMPUS EDMONTON, ALBERTA

# Director of **Pharmacology**

The Ortho Research Foundation has a challenging research management oppor-tunity for a senior Ph.D. or M.D. Pharmacologist or Physiologist who has several years of significant research experience and a high level of administrative ability.

The Director of Pharmacology will be responsible for planning and administration of diversified, well staffed programs in the fields of reproductive biology, endocrinology, pharmacology and toxicology. In addition he will be responsible for a substantial budget and the selection and development of personnel and re-

ORTHO is centrally located between New York City and Philadelphia in a desirable suburban community. Attractive compensation and benefit plans are offered. Relocation expenses will be paid.

Write in confidence to Mr. L. F. Simpkins



## ORTHO PHARMACEUTICAL CORPORATION

(A Johnson & Johnson Company) oute 202 Raritan, New Jersey Route 202

An Equal Opportunity Employer

Opportunities in academic pathology with expanding university department. Anatomic pathologists desired with interest in balanced program of service, teaching and research. Attractive salary with excellent fringe benefits. Contact T. L. Perrin, M.D., Chairman, Department of Pathology, Creighton University, 2500 California, Omaha, Nebraska.

# TRAINEESHIPS FOR GRADUATE WORK IN PHARMACOLOGY

PHARMACOLOGY

A 4-year program of course work and research training leading to the Ph.D. degree is offered. Research in fundamental mechanisms of drug action. Starting annual stipend \$2400 plus tuition and \$500 per dependent. Early application for September 1966 strongly advised. Write:

Department of Pharmacology
School of Medicine
State University of New York at Buffalo
122 Capen Hall, Buffalo, New York 14214

(a) Tropical Disease Research 500-bed hosp; \$10-\$15,000; E. (b) Asst. Prof. Virology/Immunohematology supv lab, teach; own research 50 percent; \$16-\$19,000; med sch; \$E (c) Biochemist supv dept 250-bed expand hosp, new labs; \$15,000; MidW. (d) Biology Prof Cellular/Molecular program; new univ facility: to \$16,000; E. (e) Tumor Virology immunological studies; \$10-\$14,000; research institute, Calif. (f) Supv Microbiology R&D Dept chemical mfr; \$13,000; E. Many nationwide positions at M.D., Ph.D. M.S., B.S. levels. Write WOODWARD MED. PERS. BUREAU, 185 N. Wabash, Chicago 60601.

Professional Placement Services for 70 years

# **Medical-Chemical** Literature Analyst

Advanced degree in medical or biological or chemical sciences required. Familiarity with cancer literature and especially carcinogenesis preferred. Experience with information handling techniques desirable. Must have ability to write good reports and facility to present complex data clearly to non-technical personnel. Permanent position in southeastern location. Salary open, depending on qualifications. Please send complete curriculum vitae to Box 1, SCI-ENCE.

# **MICROBIOLOGIST**

Ph.D. Level

Required By

# **SQUIBB INSTITUTE** MEDICAL RESEARCH

Splendid opportunity for qualified individual who has had exposure and post-doctorate experience in the infectious disease and chemotherapy areas. Status of Diplomate of the American Board of Microbiology highly desirable but not essential. Should have Ph.D. in Microbiology plus 7 to 10 years experience in the

## **EXCELLENT SALARY** AND BENEFITS

Send full resume including salary requirements in confidence to:

EMPLOYMENT MANAGER

E. R. SQUIBB & SONS INC.

NEW BRUNSWICK, N.J.

An equal opportunity employer

# The Market Place

SUPPLIES AND EQUIPMENT

1919 - 1966 LaMotte Chemical Chestertown, Maryland, U.S.A.

Specialists in

Colorimetric Techniques

Reagents-Standards-Comparators Send for illustrated Controls Handbook

Dept. H

#### SUPPLIES AND EQUIPMENT

#### CONTRACT STERILIZATION AVAILABLE.

CONTRACT STERILIZATION AVAILABLE.
Wilmot Castle Company offers a wide variety of
methods and equipment for sterilizing and certified sterility testing on production line basis.
Many years experience with a wide range of
products. Our R&D facilities are staffed with
skilled researchers specializing in sterilization
and ready to undertake solution of your sterilization problems. Call, write or wire, Research Lab,
Wilmot Castle Company, Rochester, New York.

#### HYPOPHYSECTOMIZED RATS

Shipped to all points via Air Express For further information write

HORMONE ASSAY LABORATORIES, Inc. 8159 South Spaulding Ave., Chicago 29, III.



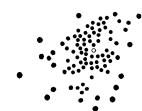
Completely new "hands-tree" MAGNIFIER has pre-cision ground, matched prismatic optical glass lenses. Tiniest details look LARGE and CLEAR! Has new "Flip-up" lens plate. Light weight!

magni-focuser

EDROY PRODUCTS CO., INC. 130 W. 29th St., New York 1 • (212) LO 5-5226

Circle 94 on Readers' Service Card

# PROFESSIONAL SERVICES



# TRACE **ELEMENT** PROBLEMS?

Contact General Atomic Division of General Dynamics.

FOR FREE BROCHURE, write to: Activation Analysis Service, Dept. AA-19 General Atomic Division, General Dynamics, P.O. Box 608, San Diego, California 92112. Or, phone: Area Code 714, 453-1000, Ext. 618.

Visit Booth G-14, Federation Meeting

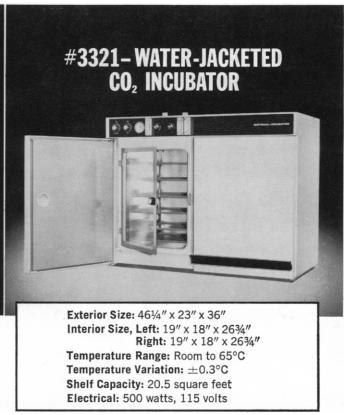
## GENERAL DYNAMICS

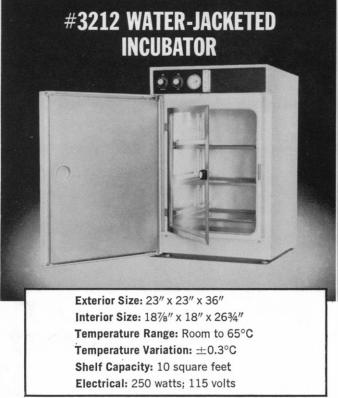
General Atomic Division

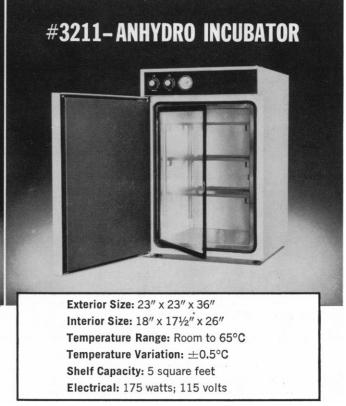
Circle 95 on Readers' Service Card



Electrical: 1500 watts; 115, 208, 230 volts







# **CHOOSE YOUR INCUBATOR HERE!**

There is a wide variety of incubators to choose from in National's line. Shown here are four of the best-known; other models are available – or may be adapted to your special needs. Your National-franchised dealer can give you all the details.



# NATIONAL APPLIANCE COMPANY Home Office and Factory: Box 23008, Portland, Oregon 97223 Eastern Sales Office: Box 3102, Stamford, Connecticut 06905 Midwest Sales Office: 2602 E. Devon Ave., Des Plaines, III. 60018

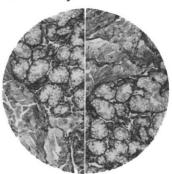
Can you recall these details . . .



when examining these?



Compare them simultaneously with AO's Duo-Star Microscope.



You view two specimens side by side with the split field of AO's unique Duo-Star Microscope. No guesswork. No back-and-forth specimen changes. No chance of memory playing tricks.

The rugged optical bridge connects two of AO's famous Microstar

The rugged optical bridge connects two of AO's famous Microstar Laboratory Microscopes. A movable vertical line divides the two images. It is moved transversely so that either field can be viewed individually, or portions of both fields can be viewed simultaneously. You can match, compare and study specific areas of interest.

Either binocular or trinocular bodies can be accommodated. An optional viewing screen fits on the third tube of the trinocular body to facilitate teaching and group observation. Or this third tube will accept an optional camera for photomicrography.

Unless you possess total recall, investigate the Duo-Star Microscope. Just contact your AO Sales Representative or write for more facts.



