

C1105/364

BACTRONIC COLONY COUNTER

All-Transistor Electronic Colony Counter Marks as it Counts Automatically In Open and Closed Petri Dishes

Four precision counting devices make this instrument indispensable for routine colony counting and in phage and bacterial genetics: an Electronic Marking Probe; A Plug-in Marking Grease Pencil or Plug-in Marking Pen; and a Pushbutton Counter.

Colonies are accurately recorded in a single probing action that leaves an identifying puncture in the agar. The Electronic Probe picks up radio impulses on contact with any agar medium and actuates the counting mechanism. Electrical splattering is completely eliminated by the low voltage input. Where puncturing is undesirable, the Plugin Grease Pencil or Marking Pen is used to mark the back of the plate as it counts.

Plates are flooded with brilliant white light that is cool, soft and easy on the eyes. Specimens are illuminated in bold relief against a contrasting agar background, revealing colony morphology. Even pinpoint colonies are easily discerned.

The instrument has an automatic numerical reset to zero, a sterilizing Probe Well and a magnifying lens.

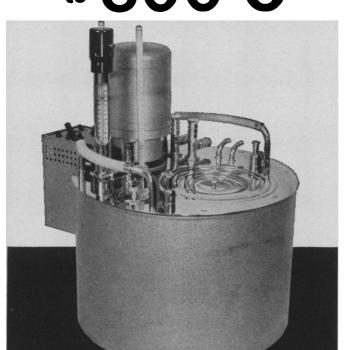


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CONSTANT TEMPERATURE CIRCULATORS

The various circulators in the Haake N Series differ from other average systems in that they were specifically designed for tempering applications where higher operating temperatures or a greater rate of liquid circulation are needed. All models in this series can be used with oils at temperatures as high as 250-300°C. Temperature stability is ± 0.01 to ± 0.05 °C. Pumps are available for pressure and/or suction circulation at maximum rates of 7 gal/min. All Haake thermostats are equipped with fast, magnetic-setting thermoregulators and with a cooling coil for circulating tap water—to obtain control at, or below, ambient temperature,

The pumps are designed for operation at temperatures down to -60° C, and accessory cooling systems using ice, thermoelectric principles or compressors can be supplied on request.



THE AUSTRALIAN NATIONAL UNIVERSITY INSTITUTE OF ADVANCED STUDIES DEPARTMENT OF GEOPHYSICS SENIOR FELLOWSHIP

Applications are invited for the post of Senior Fellow in the Department of Geophysics (Head of Department, Professor J. C. Jaeger).

The Department possesses a very well equipped palaeomagnetic laboratory, operates an extensive network of seismological stations, and has a wide range of other activities. Further information about these may be obtained from Professor Jaeger.

The salary and range of a Senior Fellow are fixed within the limits £A3,300–3,850. After each five years of service the Senior Fellow will be entitled to 12 months' study leave on full pay with a grant of up to £A1,300 towards expenses.

It may be possible to consider also applications from persons interested in appointment at a higher or lower status than that of Senior Fellow.

Superannuation is on the F.S.S.U. pattern. Reasonable travel expenses are paid and assistance with housing is provided.

Further details should be obtained from the undersigned at Box 4, G.P.O., Canberra, A.C.T., with whom applications close on 30 April 1964.

D. K. R. HODGKIN Registrar Institute of Advanced Studies

LAND AND WATER USE

Special Reference to Mountain & Plains Regions Wynne Thorne, Editor

AAAS Symposium Volume No. 73. May 1963 6" by 9", 364 pages, references, index, \$8.00

(AAAS members' cash order price \$7.00) Arranged by the AAAS Section on Agriculture

This symposium volume reports papers by leaders in research, and policy discussions relating to the nation's land and water resources, presented at the AAAS meeting in Denver, Colorado, in December 1961.

The volume centers on problems associated with the increasing competitive demands for use of publicly owned lands. The historic uses by livestock and timber processors are being challenged by groups concerned with recreation, wildlife, and water production. Adjustments in public land use in relation to uses of adjacent or intermingled privately owned lands need further consideration if the total benefits from these resources are to be maximized. These and other problems of land and water are explored by recognized leaders in the field.

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SCIENCE, VOL. 143

PERSONNEL PLACEMENT

POSITIONS WANTED

Electron Microscopist, Ph.D., Anatomist. Desires academic position with good opportunities for teaching and research. Publications. Box 327, SCIENCE. 3/6

(a) Ph.D. Pharmaceutical Chemist; chemistry teaching, research experience; publications; wishes southern faculty appointment. (b) Ph.D. Bacteriologist, strong chemistry, physiology training; research, teaching experience; prefers teaching/basic research, (c) Ph.D. Animal Science (nutrition, physiology minors), completing postdoctoral research; teaching experience; interested in teaching, research, industrial. (Please write for information regarding these and other scientists, senior and junior, in all fields.) Science Division, The Medical Bureau, Inc., Burneice Larson, Chairman, 900 North Michigan Avenue, Chicago 11, Illinois. X

Ph.D. Pharmacologist. Physiology, bacteriology minors. Postdoctoral research, teaching, and administrative experience. Prefer academic position. Box 315, SCIENCE. 3/6

POSITIONS OPEN

CHEMISTS—Several research opportunities are available to study the fate of organic pesticides in the water environment. M.S. with analytical or physical background preferred. Graduate study opportunity available. Salaries to \$7000. Write: Dr. Samuel D. Faust, Rutgers University, New Brunswick, New Jersey.

Immediate opening for **Biological Science Specialist** (GS-15) in the Science and Technology Division, Library of Congress. Graduate degree and substantial experience in analyzing interpreting, reporting, and advising on literature in the biological sciences. Annual salary \$15,665. Inquiries or Standard Form 57 should be sent to the **Director of Personnel, Library of Congress,** Washington, D.C. 20540. X

Physical Biochemist. Postdoctoral collaborator in physical-chemical studies of hemeproteins, in new chemistry laboratories at a Washington, D.C. university. Early availability preferred. Excellent salary, renewable appointment. Write

Box 339, SCIENCE

Ph.D. Biochemist, strong lipid metabolism background; eastern pharmaceutical house. (b) M.S.
 Physiologist, pharmacy degree helpful; research; potential entrance to graduate program southern university; to \$7000. (c) General Sales Manager, B.S.; broad national experience pharmaceuticals; East; \$18,000. (d) Research Biochemist, Ph.D.; bacteriology training, globulin protein fractions interest; East, \$10,420. Faculty Appointment: (e) Ph.D. Zoologist, strong research interests; large Central university; to associate professor level. (f) Ph.D. Botanist, plant physiologist; northwestern university; to \$8000. (h) Ph.D. Biologist; teach freshman, graduate courses; supervise research; publication expected; to \$8500; 9 months, summer optional; expanding Central university. Many other opportunities available for both junior and senior scientists. Please write to Science Division, The Medical Bureau, Inc., Burneice Larson, Chairman, 900 North Michigan Avenue, Chicago 11, Illinois. X

RESEARCH and DEVELOPMENT Outstanding pharmaceutical company expanding R&D Laboratories. Excellent atmosphere for research-oriented scientists desiring advancement based on ability and effort. Opportunities available now for Project Leaders. BIOCHEMIST RENAL PHYSIOLOGIST PHARMACOLOGIST TOXICOLOGIST ORGANIC CHEMIST (Medicinal Synthesis) Young organization where application and initiative are more easily recognized and rewarded. Excellent benefits and working conditions. Ph.D. degree or equivalent required. Send resume in confidence. Personnel Manager ALCON LABORATORIES, INC. P. O. Box 1959 Fort Worth, Texas An equal opportunity employer

6 MARCH 1964

POSITIONS OPEN

ANALYTICAL CHEMIST

Excellent opportunity for chemist at the B.S. or M.S. level with experience in analytical instrumentation and clinical chemistry. Duties will relate to the development of new and the modification of existing diagnostic procedures.

ORGANIC CHEMIST

Excellent opportunity for chemist at the B.S. or M.S. level with experience in organic synthetic chemistry. Duties will involve organic synthetic research and development under the direction of a senior scientist. Applicant should be familiar with modern laboratory equipment and instrumentation.

SEND RESUME TO EMPLOYMENT MANAGER

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MEMORIAL UNIVERSITY OF NEWFOUND-LAND. The Department of Biology invites applications for a position involving teaching and research in the field of Vertebrate Anatomy. Teaching responsibilities will primarily involve instruction of a course in Comparative Vertebrate Anatomy. Please send applications, along with curriculum vitae and names of three referees to the Head, Department of Biology, Memorial University of Newfoundland, St. John's, Newfoundland.

MICROBIOLOGIST

Opportunity with well-established pharmaceutical manufacturer in control section of microbiology department.

Diology department. Develop new and improved methods of microbiological testing for quality control of antibiotic, germicidal, vitamin, and enzyme preparations. Conduct and supervise control projects under section head. B.S. or M.S. degree in microbiology required, industrial experience with control methods and microbiological assays desirable.

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POSITIONS VACANT

Two junior appointments, viz. Animal Physiologist and Animal Embryologist, training to reflect strong connection with experimental approach applicable in functional biology and to associate with interest in molecular biology.

Apply: The Chairman, Department of Biology, McMaster University, Hamilton, Ontario, Canada.

RESEARCH PHARMACIST

Opening for qualified candidate to perform research and development work on a variety of dosage forms. Ph.D. or equivalent with some industrial experience desirable, but creativity and sound background in formulation and experimental design are more important. Excellent employee benefits. Adjacent to unsurpassed cultural and academic centers and recreation areas. Please send resume to Dr. James E. McDavid, Director of Pharmaceutical Research. Equal opportunity employer.

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Berkeley, California

Traineeships for Graduate Work in Pharmacology. A 4-year program of course work and research training leading to the Ph.D. degree is offered. Research opportunities include the action of drugs on kidney, circulation, autonomic ganglia, connective tissue, behavior, metabolism, and ion transport. Annual stipend (U.S. citizens) of \$2400 plus tuition, plus \$500 for each dependent. Early application strongly advised for entrance September 1964. Detailed information on request. Write: Department of Pharmacology. School of Medicine, State University of New York at Buffalo, 15 The Circle, Buffalo, N.Y. 14214. 3/6, 20; 4/,

INFORMATION SCIENTISTS

Growth and expansion of Abbott Laboratories' Science Information Service has created several fine career opportunities for Information Scientists to evaluate, abstract, and code scientific information and prepare literature surveys.

These positions afford the qualified scientist the opportunity to contribute to the development of advanced science information activities, including the electronic automation of information retrieval.

We are seeking applicants with a B.S., M.S., or Ph.D. degree in chemical or biomedical fields, with writing ability and facility in reading scientific French, German or Spanish. Starting salary is commensurate with ability and qualifications.

Abbott is one of the nation's major ethical pharmaceutical companies. Our comprehensive benefit programs provide a generous working and retirement protection for our employees.

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Professional Employment



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POSITIONS OPEN

MOUNT ALLISON UNIVERSITY Appointment in Physical Chemistry

Appointment in Physical Chemistry Applications are invited for a position in the Department of Chemistry. It is desirable that the successful candidate should take up duties on or about 1 July 1964. 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 lec-tures will be necessary to provide a suitable theoretical background for the laboratory work. Applicants should have completed all the re-guirements for the Ph.D. degree. It may be pos-sible, in a few instances, to arrange for a person-al interview at the department's expense. Applications should be forwarded to Prof. A. C. Cuthbertson, Department of Chemistry, Box 133, Sackville, N. B., Canada.

CLINICAL INSTRUMENT DEVELOPMENT

Degreed Clinical Chemist, Biochemist, or Medical Technologist with several years clinical lab experience, including instrument design or modification. To be Project Leader for clinical instrument development in R & D department of America's largest manufacturer-distributor of lab apparatus. Career position, salary commensurate with ability, fine benefits, top educational and cultural location. Send complete résumé in confidence to R. W. Chapman.

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SECTION HEAD Seeking imaginative creative scientist to conduct and supervise original laboratory research in de-velopment of new drugs having reproduction and gonadal hormone related actions. Should have Ph.D. in physiology, anatomy, zoology, or re-lated field with research experience or thesis in reproductive system physiology. Prefer 1 to 3 years of postdoctoral research experience. Oppor-tunity to publish. New expanding laboratory facilities and animal rooms. Send résumé to

Dr. Dorsey E. Holtkamp Head, Dept. of Endocrinology **THE WM. S. MERRELL COMPANY** Division of Richardson-Merrell Inc. Cincinnati, Ohio 45215

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PART-TIME EDUCATIONAL WRITER

PART-TIME EDUCATIONAL WRITER Here is an opportunity for an experienced teacher to increase his or her income through the spare-time preparation of manuscripts on techni-cal subjects. Successful applicant will demon-strate an ability to analyze subject matter, a teacher's intuition, and a fluent style. Work will be in close association with established subject-matter authorities. Experience with preparation of programmed instruction materials and a New England location desirable but not necessary. Send full details of qualifications and references to Dr. Albert E. Hickey, President, ENTELEK In-corporated, Newburyport, Massachusetts.

RESEARCH ASSISTANT

Under the general guidance of senior scientists at the Board's laboratory in Halifax, Nova Scotia, to assist in research related to biochemical and bacteriological changes in fish; identification and physiology of bacteria and other marine products. Preference will be given to applicants with an honors bachelor's degree or demonstrated research ability. Refer replies to Competition HX-32. Submit complete résumé to:

The Director Fisheries Research Board of Canada Technological Research Laboratory P.O. Box 429 Halifax, Nova Scotia Canada

APPOINTMENT IN BIOLOGY Dalhousie University Halifax, N.S., Canada

Dalhousie University invites applications for two positions in the department of Biology. Ap-pointments will be made at the rank and salary appropriate to teaching and research experience. For a recent Ph.D. the starting salary will not be less than \$7000. **Biologists** working in experimental zoology, histochemistry, electronmicroscopy, or develop-mental biology.

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

Canada. RESEARCH ASSISTANT Under general guidance of scientists at the Board's laboratory in Grande Riviere, Quebec, to assist in a program to investigate the nonbacterial spoilage or deterioration of fish muscle. Resi-dents in the area in which this laboratory is located are predominally French speaking. Preference will be given to applicants with a bachelor's degree, honors course, or demon-strated research ability. An appointment will be made in either the scientific or technical classifications at a salary commensurate with qualifications and experience. Refer to Competition HX-33. Submit complete résumé to: The Director Fisheries Research Board of Canada Technological Research Laboratory P.O. Box 429 Halifax, Nova Scotia Canada

PHARMACOLOGIST

PHARMACOLOGIST (\$10,640—\$14,064) Ph.D or M.S. with experience in Toxicology of inhaled substances for research in Environmental Health. This is a long-range program offering challenging opportunities in a research atmosphere that encourages creativity and freedom to plan and publish research results. U.S. Civil Service benefits and requirements apply. Résumés should be sent to Director, Robert A. Taft Sanitary Engineering Center, 4676 Columbia Parkway, Cincinnati, Ohio 45226. For further information, please call Chief, Lab-oratory of Medical and Biological Sciences, 1055 Laidlaw Avenue, Cincinnati, Ohio, Telephone: 871-1820, Ext. 645.

PHARMACOLOGISTS

Several administrative (nonresearch) positions open for pharmacological evaluation of metabolic and toxicity data on drugs. Starting salaries from \$6,575 to \$14,065 depending on extent of academic training and applicable experience.

Similar positions open fos biochemists qualified for toxicological evaluaation.

M.S. required, Ph.D. preferred, with experience in drug research or evaluation. U.S. citizenship required.

Send résumé and application (Standard Form 57 from any post office or Federal agency) to Personnel Office, Food and Drug Administra-tion, Washington, D.C. 20204.

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Predoctoral Assistantships and Traineeships in 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 biophysics, cellular physiology, endocrinology, muscle, water metabolism, cardiovascular, gastrointestinal and environmental physiology. Write for details to Head, Department of Physiology, University of Illinois at the Medical Center, Chicago, Illinois 60612. 3/13, 20.

Zoologist to teach Comparative Anatomy and Zoologist to teach Comparative Anatomy and other work according to preparation and inter-ests, starting September 1964. Salary and rank depending on qualifications and experience. Ap-plicants should send Curriculum Vitae and three references to Prof. W. B. Stallworthy, Head, Dept. of Biology, Mount Allison University, Sackville, New Brunswick, Canada.

FELLOWSHIPS

Biophysics Training Program Fellowships Applicants are invited from candidates with M.S. or Ph.D. degrees in either physical or bio-logical sciences. A major aspect of the program is the conduct of a specific research project and current studies include problems in radiobiology, neutron activation and neutron dosimetry, process-ing of biological data and medical engineering. Training stipends in the range of \$5000-6500. Further information from Dr. G. L. Brownell, Head, Physics Research Laboratory, Massachu-setts General Hospital, Boston 14, Massachusetts.

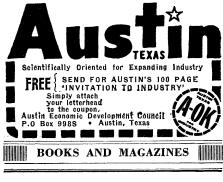
Graduate Fellowships in Biochemistry Graduate Fellowships in Biochemistry Teaching and research appointments leading to Ph.D. available for academic year 1964-1965. Varied department research programs include mammalian and microbial metabolism and enzymology, nucleic acid biochemistry, neuro-chemistry. Excellent facilities in new building. Annual stipends start at \$2400 plus dependency allowance and tuition. Address further inquiries to Head, Department of Biochemistry, University of Maryand, School of Medicine, Baltimore 1, Maryland.

Fellowships. Postdoctoral fellowships available to individuals (Ph.D., M.D., or equivalent) seek-ing research training in general field of metab-olism including diabetes, endocrinology, renal function, steroid biochemistry. Stipends \$5000 to \$6500, partly tax-exempt, and allowance for de-pendents. Apply to Dr. R. E. Bailey, Depart-ment of Medicine, University of Oregon Medical School, Portland, Oregon. 3/27; 4/24

PREDOCTORAL FELLOWSHIPS IN PHYSIOLOGY

Support is available for study leading to the M.S. and Ph.D. degrees in physiology. Oppor-tunities are available to do graduate work in endocrinology, cardiovascular or respiratory physi-ology, radiobiology, and various areas. Write to Dr. H. E. Bredeck, Department of Physiology, Colorado State University, Fort Collins, Colorado.





INDEX ANIMALIUM 1758-1800

Reprinting Spring 1964

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SUPPLIES AND EQUIPMENT

WHAT could YOU do-

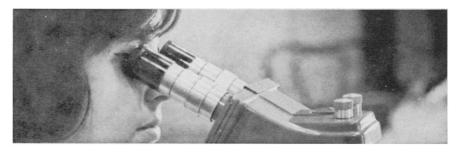
with a magnetic plasma, electronic plasma, 27mcinduction heater, $6300^{\circ}F$ O₂ furnace, dielectric heater, plastic sealer, drier, sterilizer, Hi V, Hi power AC/DC supply etc.? All in one package. Total cost \$1566. Write or phone RFC, Box 248-8, medFIELD, Mass. boston 617-762-4900.

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A simple way to answer this question would be to say "ask the man who owns one." Because thousands of users have found out "why" for themselves. But, let's start off by asking you some questions: Have you ever needed more working distance? . . . an increased real field-of-view? . . . or increased depth-of-focus? Have you ever wanted a flatter field? . . . or more image brightness? If your answer is "yes" to one or more of these, then DynaZoom[®] is for you! ■ For instance,

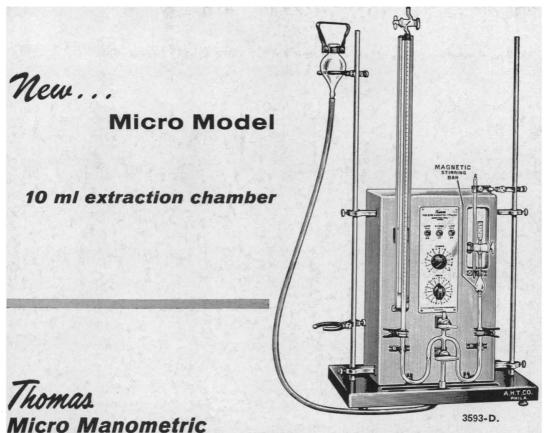


by achieving a desired magnification using a lower power objective and the plus magnification of the DynaZoom systemyou increase the working distance-the real field-of-view is increased-the depth-of-focus is increased and you have a much flatter field of view.
Or, in dark field and fluorescence microscopy-by using a lower power eyepiece in combination with the DynaZoom system and a higher power, higher N.A. objective, you get greatly increased image brightness -brightness that is an absolute necessity in these methods. Obtaining high magnification through the use of the Dyna-Zoom system, rather than using the highest power eyepiece -adds no field curvature and there is no change in eye relief. DynaZoom provides the only means of getting "in-between" magnifications, exactly . . . through a continuously variable range. ■ And more . . . many more capabilities are yours . . . that only the DynaZoom system can offer. And best of all ... IT'S FREE ... because it's standard on Bausch & Lomb DynaZoom microscopes at no extra cost. Ask for a demonstration and see for yourself. Write Bausch & Lomb Incorporated, 64203 Bausch Street, Rochester, New York 14602. In Canada, write Bausch & Lomb Optical Co., Ltd., Dept. 642, Scientific Instrument Division, 16 Grosvenor St., Toronto 5, Ont.



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Micro Manometric Blood Gas Apparatus, Thomas-Van Slyke, Magne-Matic[®]. With 10 ml extraction chamber which permits up to 95% reduction of sample size used in Van Slyke-Neill methods. Accuracy of determination is retained; standard error can be held within $\pm 0.25\%$. Analyses are generally more rapid than macro method. Technique is expected to become the preferred method even when size of sample available is not a factor. See D. D. Van Slyke and J. Plazin, *Micromanometric Analyses* (Williams & Wilkins, Baltimore, 1961).

Extraction Chamber. Of borosilicate glass, with 18/7 ball at lower end. Capacity 10 ml, graduated at 0.1, 0.3, and 10 ml. Cup at top graduated 0 to 2 ml in 1/10 ml. Straight bore stopcock is high vacuum type. No water jacket is required.

Pipets. Micro pipets 8205-L and 8205-M with long stainless steel tips are required for the technique but are not included. No. 8205-L de-

livers samples into the cup, and 8205-M delivers directly into the extraction chamber through the stopcock bore to avoid loss or aeration.

Magnetic Agitation. The micro Van Slyke model utilizes the same magnetic agitation as the standard macro Thomas Magne-Matic[®] Van Slyke Manometric Apparatus (see p. 278 of our 1961 catalog).

3593-D. Micro Manometric Blood Gas Apparatus, as described. Complete with two Kel-F coated Stirring Bars, ½-inch long but without pipets or mercury. For 115 volts, a.c. or d.c. 447.00



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