PERSONNEL PLACEMENT

POSITIONS WANTED

Microbiologist, postdoctoral research and teaching experience. Bacteriology, protozoology, immunology. Senior position preferred in graduate school with opportunity for independent work. Box 256, SCIENCE. 12/28; 1/4

(a) **Ph.D. Biochemist** (organic chemistry), academic, clinical chemistry background; prefers teaching or clinical chemistry with research facilities. (b) **Ph.D. Entomologist** (biochemistry), medical entomology, radiation biology background; prefers teaching, research. (Please write for information regarding these and other scientists, senior and junior, in all fields; nationwide and very active service.) Science Division, The Medical Bureau, Inc., Burneice Larson, Chairman, 900 N. Michigan Avenue, Chicago 11, Illinois. X

POSITIONS OPEN

NEW JERSEY

Microbiologist

M.S. or Ph.D.—2–4 years' experience. Liberal salary and benefits with major food company. Studies in fermentation mycology and bacteriology. Pharmaceutical exp. OK. All expenses paid by Co. Write or call collect to:

Mr. R. Obus, 201 — Ge 8-5024
Bixby
EMPLOYMENT AGENCY
19 Park Ave. Rutherford, N. J.

POSTDOCTORAL TRAINEESHIPS for Ph.D.'s or M.D.'s in lipid metabolism available in the Department of Physiology, University of Tennessee Medical Units. The training program includes application of microanalytical procedures, chromatography and isotope techniques to metabolic problems. Stipends depend on previous training. Applications for 1- or 2-year periods following July 1, 1963 to be made to: **Dr. D. B. Zilversmit, Department of Physiology, University of Tennessee Medical Units, Memphis 3, Tennessee.**

POSITIONS OPEN

BACTERIOLOGISTS, BIOLOGISTS, MEDICAL TECHNOLOGISTS

Parke, Davis & Company has a number of openings in Detroit and Ann Arbor, Michigan, for female bacteriologists, biologists, and medical technologists at the B.S. and M.S. level to do laboratory work of a research nature. A knowledge of tissue culture techniques is helpful. Excellent salaries, fringe benefits and opportunities for advancement. Send complete résumé to **Personnel Department, Parke, Davis & Company, Detroit 32, Michigan.**

An Equal Opportunity Employer

THE UNIVERSITY OF ALBERTA, Edmonton campus, invites applications for positions in the **Department of Mathematics** at the Assistant Professor, Associate Professor, and Professor level.

Salaries for 1963–64 will be in the ranges:
Assistant Professors $6500–$8700
Associate Professors $9000–$11,700
Full Professors $12,000–

Appointments will date from 1 September 1963, with commencing salaries dependent on experience and qualifications. Annual increments of $400 are normally given for satisfactory service. A pension plan is in operation and a removal grant may be made for married appointees and for single persons coming from outside North America.

Applications should be forwarded to Professor M. Wyman, Mathematics Department, **University of Alberta**, Edmonton, Canada.

BIOCHEMISTS—Ph.D.

Progressive 850-bed private, university-affiliated hospital has opportunity for Ph.D. biochemists to perform research in Endocrinology or Orthopedics departments. Recent or experienced Ph.D.'s with knowledge steroid chemistry or inorganic salt metabolism and radioactive isotopes. Excellent salary, benefits and permanence. Send résumé to

J. B. King, Director—Personnel Relations
Presbyterian—St. Luke's Hospital
1753 West Congress
Chicago 12, Illinois

POSITIONS OPEN

BIOCHEMIST

Clinical chemistry research section requires Ph.D. (or M.S. with experience) to head up projects on assigned fundamental and applied problems in clinical chemistry. Will be working with leaders in the field of diagnostic reagent development and will be expected to originate ideas for new products (for the General Diagnostics Division of Warner-Chilcott). Some background in enzymology desirable.

Full benefit program includes paid relocation, medical and life insurance programs, tuition refund plan, etc. Modern, well-equipped laboratories in suburban setting.

Send resume including full educational and experience details to Employment Department

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MELPAR'S EXPANDING RESEARCH DIVISION

has created an immediate need for:

Biophysicist

To conduct research in the phenomena of surface activity of biologically active compounds. Ph.D. or equivalent experience desired.

Physical Chemist

To conduct research on biologically active compounds. Ph.D. or equivalent experience with biological materials.

Chemist

To conduct research in enzymology, organic synthesis, biophysical phenomena and psychoactive compounds. B.S. degree.

Immunochemist

To conduct research relating to the biochemistry of immune reactions. M.S. in biochemistry or immunology with experience in the other of these two areas.

Biochemist

To conduct research in the areas of enzyme mechanism and kinetics. Ph.D. or equivalent experience in enzymology desired.

Organic Chemist

To conduct basic research on inorganic polymers, coordination compounds, and organic semiconductors. M.S. or B.S. with equivalent experience desired.

Write in strictest confidence to:
John A. Haverfield
Manager - Professional Placement

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A Subsidiary of Westinghouse Air Brake Company
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Our Company in the Chicago area is looking for a versatile laboratory scientist, one principally trained in Microbiology. The position would entail direction of laboratory work of subordinates and require independent judgment and organization. We are interested in skill—therefore, an appropriate combination of degrees and/or experience would be considered. The starting salary range, commensurate with background would be $9000–$12,000. **Send complete résumés to Box 252, SCIENCE.**

YOUR SHANGRI-LA

New, growing **RESEARCH FOUNDATION** at **MENTAL HOSPITAL** seeks **SCIENTISTS** in disciplines related to **MENTAL HEALTH** and **INFECTIOUS DISEASES.** Considerable scientific background necessary. Project freedom guaranteed. **Write Box 258, SCIENCE.**

MELPAR'S

expanding Research Division has immediate need for Key Personnel to conduct research in the following areas:

- **PHARMACOLOGY**
- **VIROLOGY**
- **TISSUE CULTURE**
- **MICROBIOLOGY**

Current programs cover the challenging problems of the future. These problems are in the fields of Space Biology, Electrobiology, and Culture Biology.

Applicants with experience desired, but new graduates will be considered.

Write in strictest confidence to:
John Haverfield
Manager—Professional Placement

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an equal opportunity employer

POSITIONS OPEN

(a) **Ph.D. Microbiologist,** fermentation chemistry background; industrial R&D; Central; to $11,000. (b) **Nutritional Biochemist,** physiology, toxicology background; basic and applied food research, product development; Central. (c) **Clinical Biochemist,** Ph.D., supervisory, teaching, research duties; East. *Faculty Appointments*: (d) **Ph.D. Zoologist,** physiologist, eastern college; to $9600. (e) **M.S./Ph.D. Mathematician;** experience not required; Southeast college. (f) *Junior Scientists*: **B.S. Biology, Chemistry, Mathematics, Physics;** radiation effect research; Midwest; to $520. Please write Science Division, **The Medical Bureau, Inc.,** *Burneice Larson, Chairman,* 900 North Michigan Avenue, Chicago 11, Illinois. X

UNIVERSITY OF WESTERN ONTARIO
DEPARTMENT OF BOTANY

Applications are invited for a post in the field of Ecology dating from 1 July 1963. Depending on qualifications and experience it will be filled at the level of Lecturer or Assistant Professor, with initial salary in the region of $6000 or $7000, respectively.

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

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are needed by our library and institutional customers. Please send us lists and description of periodical files you are willing to sell at high market prices. Write Dept. A3S, CANNER'S, Inc. Boston 20, Massachusetts

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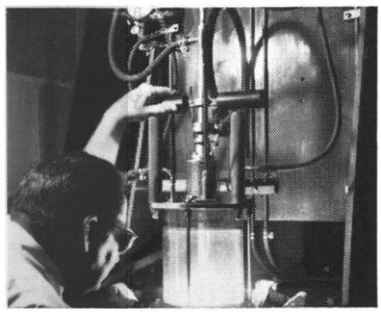
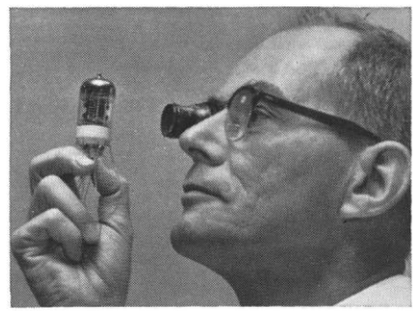
CE 3-5318

What was Bell Telephone Laboratories doing on Monday, October 1, 1962?



Murray Hill Laboratory, N. J. The search continued for new materials exhibiting superconductivity. Some of these materials have been used to produce very strong magnetic fields with the expenditure of very little electrical energy.



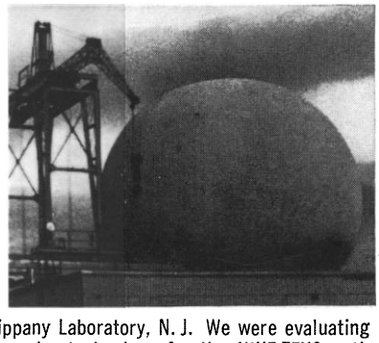
Allentown Laboratory, Pa. We were working with engineers of Western Electric, manufacturing unit of the Bell System, on the manufacture of long-life electron tubes for a new deep sea cable system.

Merrimack Valley Laboratory, Mass. We were increasing the capabilities of a new microwave system designed for low-cost telephone and television communications over distances up to 200 miles. This system is based on advances in solid state technology.

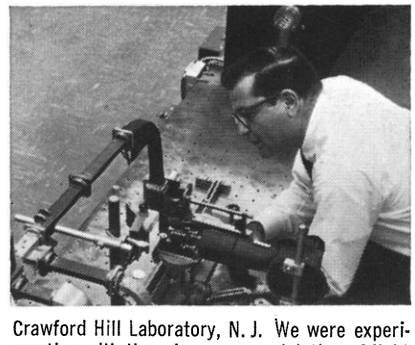
Holmdel Laboratory, N. J. We were developing an electronic switching system using new solid state devices. It will bring telephone customers a whole new range of services.

Indianapolis Laboratory, Ind. We were perfecting improved automatic dialer telephones. One model will permit the customer himself to record 50 frequently called names and numbers and then dial by simply selecting a name and pressing a button.

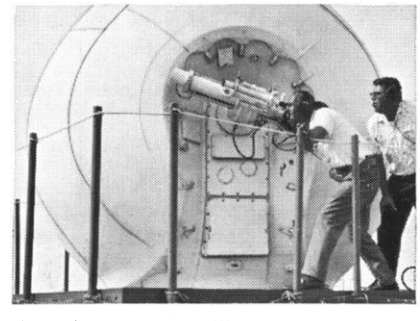
New York Laboratory, N. Y. We were studying the performance of a new data set which converts teletypewriter pulses into tones for transmission over regular voice circuits. Transmitting teletypewriter messages over voice circuits was introduced on August 31, 1962.



Whippany Laboratory, N. J. We were evaluating new radar technology for the NIKE-ZEUS antimissile missile system under development for the Army. Significant improvements are further tested at four other ZEUS test sites ranging halfway around the world.



Crawford Hill Laboratory, N. J. We were experimenting with the microwave modulation of light from a helium-neon gaseous optical maser. Modulated light may someday be used to carry large volumes of information.



Cape Canaveral, Fla. We were preparing for the 102nd successful use of Bell Laboratories-developed Radio Command Guidance System. On July 10, it was used in the NASA launching of the Bell System's Telstar. This guidance system was originally developed for the Air Force and is operational on the Titan I ICBM.

These were some of the highlights of one day. Engineers and scientists at Bell Laboratories work in every field that can benefit communications and further improve Bell System services. Their inquiries range from atomic physics to new telephone sets, from the tiny transistor to transcontinental radio systems, from the ocean floor to outer space.

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FLUIDIZED SAND BATH

for temperatures to 300°C

- ***Bath media is nonflammable and nonfuming***
- ***Ideal for multiple neck flasks or those of irregular geometry***

A multipurpose heater designed to replace oil baths and heating mantles in the temperature range to 300°C. Employs low pressure, low velocity compressed air to convert sand or similar refractory materials to a fluidized solid. The aerated sand assumes the properties of a nonvolatile, nonflammable, nonwetting insulated liquid permitting easy immersion and withdrawal of flasks and other vessels. Temperature regulation can be achieved by means of an autotransformer or simple proportional control of input to the heater coil. Built-in cut-off switch turns off heater when air pressure to bath is interrupted.

Advantages:

- **Rapid heating and cooling**
- **Bath media do not splash**
- **Vessels are not wetted or coated by bath**
- **Bath media remain clean and do not decompose**

Principle—Air diffused through the porous bottom of the bath produces a flotation effect upon the sand particles, reducing the relative density. The expanded bed behaves as a fluid; surface bubbles give the appearance of a boiling liquid. Heat is distributed through the bath by air passage and the displacement of sand particles. The fluidized bed exerts a buoyant effect upon immersed objects.

Size—Inside dimensions 7¼ inches diameter × 5¾ inches deep to heater coil. Depth is sufficient to immerse 1000 ml round bottom flasks to the neck, or 2000 ml flasks to over half flask diameter. Overall dimensions, approximately 11 inches high × 9½ inches diameter, exclusive of air valve and safety switch, which extend near base approximately 4 inches to the right and rear respectively.

Air Supply—Requires a filtered air input, free of oil and dust, of approximately 3 p.s.i. pressure, at a flow rate of 4 cu. ft. per minute. Compressor or impeller type sources are required. Diaphragm pumps do not ordinarily provide the required free air capacity.

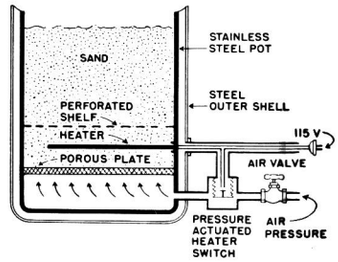
Bath Media—Clean, dry, free-flowing sand or material of similar density, screened to approximately 80 mesh, is required. Fines must be avoided. Approximately 10 lbs. required.

Wattage—Heater is rated at 750 watts at 115 volts, a.c.

Construction—Interior is stainless steel, with full diameter ceramic porous plate at bottom. Tubular immersion heater is steel jacketed. Outer shell is enameled steel.

Temperature Control—For controlling the temperature when operating the bath from 115-volt lines free of severe voltage fluctuation, an adjustable voltage transformer such as our 9708-G Type 116, 7.5-amp. Powerstat is suitable. A proportional wattage input controller can also be used; for optimum control, thermocouple-pyrometer controller is recommended.

8868. Sand Bath, Fluidized, Tecam®, as above described. With built-in heater, air pressure cut-off switch, air control valve, 10 lbs. of sand, but without air pump or temperature control device; 115 volts, a.c.; 750 watts.... **160.00**



Schematic cross-section of Fluidized Sand Bath

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