

New Products

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither Science nor the writer assumes responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to the manufacturer. Include the department number in your inquiry.

Temperature programmer, for gas chromatographs, operates by following a curve traced on a transparent plastic sheet with india ink or a strip of black tape. The program sheet is placed on a rotating drum. The slope of the curve determines the rate of rise; a zero potentiometer determines the starting temperature; a span potentiometer determines the heat rise. Rate of increase of temperature may be as high as 30° to 60°C per minute. A single program may include step functions and curvilinear rates of rise interrupted by intervals of isothermal operation while closely spaced peaks are being eluted. (Beckman Instruments Inc., Dept. Sci325, 2500 Fullerton Rd., Fullerton, Calif.)

Inductance and capacitance meter is a direct-reading instrument that covers the L and C ranges from 0 to 300 μ h and 0 to 300 pf, respectively. The total range is covered in five steps; the smallest full-scale range is 0 to 3. Accuracy of ± 3 percent is said to be maintained with resistance loads of 20 kohm (shunt) and 10 ohms (series) on inductance measurements and 0.1 megohm (shunt) on capacitance measurements. A guard voltage sufficient to drive to 200 pf eliminates effects of stray capacitances. (Solartron Laboratory Instruments Ltd., Dept. Sci319, Cox Lane, Chessington, Surrey, England)

Frequency meter is direct reading over the range 3 cy to 1.65 Mcy/sec with accuracy said to be ± 0.1 percent. Input sensitivity is 20 mv, and discriminator residual noise is 100 db below full scale. A d-c output for operating a recorder is provided. (General Radio Co., Dept. Sci305, West Concord, Mass.)

Photo-recording paper is designed to be developed by heat. According to the manufacturer, a visible image forms with as little as 1.5-sec development. Development chemicals are incorporated in the silver photographic emulsion. Enough water is contained in the emulsion and paper support to activate the chemicals. The paper is fast enough for exposure in high-speed oscillograph recorders with high-intensity mercury

25 AUGUST 1961

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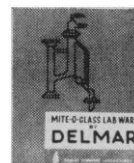
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lamps. For permanence longer than several months, the prints may be stabilized or fixed by conventional methods. (Eastman Kodak Co., Dept. Sci-304, 343 State St., Rochester 4, N.Y.)

Perforated-tape reader (Fig. 1), for automatic programming with eight-level standard perforated tape, reads 80 bits of information at six tests per second and will locate a test program at a rate of 12 in./sec. The tape is advanced one frame at a time on a switch-closure command signal. A verifier panel shows a full frame hole pattern on the front of the unit. A resettable frame counter is provided. (Electronic Engineering Co. Dept. Sci290, 1601 E. Chestnut Ave., Santa Ana, Calif.)

Strain-measuring bolt consists of an electric strain gage bonded and sealed in a small hole along the longitudinal neutral axis of the bolt. It is designed to indicate continuously tensile stress or load induced by tightening or otherwise loading or unloading the bolt. According to the manufacturer, no reduction in allowable bolt load is imposed by either the drilled hole or the gage

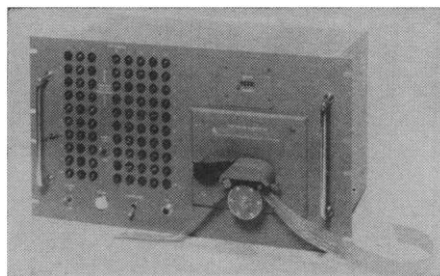


Fig. 1. Perforated-tape reader.

installation, but a minimum grip length is required for proper performance. Electrical specifications include: resistance, 240 ± 0.4 ohms; gage factor, 2.00 ± 0.01 ; maximum excitation, 30 ma and 7 volts, a-c or d-c; output sensitivity, $0.5 \mu\text{V/volt per } 10^{-6}$ in. Accuracy is said to be within ± 1 percent of allowable bolt load. (Strainsert Co., Division of Plyphase Instrument Co., Dept. Sci307, E. 4 St., Bridgeport, Pa.)

Synchro standard is electrically equivalent to an accurate ideal synchro transmitter. The standards are connected in the circuit exactly as are synchro transmitters. Output angle is selected by a single detented control

knob; all models may be specified in 5-, 10-, or 15-deg increments. Typical output impedance unbalance is $0.01 + 0.001$ ohm. Accuracy is 2 sec of arc. Frequency ranges are 45 to 120, 200 to 800, and 200 to 1200 cy/sec. (Astrosystems, Inc., Dept. Sci294, 220 E. 23 St., New York 10)

Digital voltmeter features capability of averaging applied voltage over a definite selected sample period. Range, sample period, and sample rate can be programed externally by contact closures. Binary-coded decimal output is provided to drive recording and control equipment.

Five voltage ranges extend from 0.1 to 1000 v full scale. Stability is said to be better than ± 0.01 percent per day on ranges of 1 volt or higher, and accuracy ± 0.05 percent. The instrument operates by converting voltage to frequency and then counting the frequency. The counter section can be used separately. (Hewlett-Packard Co., Dept. Sci301, 295 Page Mill Rd., Palo Alto, Calif.)

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National Bureau of Standards

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Openings in Terre Haute, Indiana; Groton, Connecticut; and Maywood, New Jersey. At least three years post-graduate experience required.

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1. M.D. or Ph.D. with knowledge of clinical or laboratory virology. Experience in tissue culture and immunology essential. Will conduct research in general fields of virus propagation and synthesis, viral attenuation, development of serologic methods, and cell cultivation.
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3. Ph.D. or M.D. to work on mode of action of antiviral compounds and antimetabolites. Good background in nucleic acid or pyrimidine chemistry as well as familiarity with quantitative viral techniques essential.
4. Ph.D. with sound classical training in virology to work in cancer research program.

Address resumes (salary requirements included) to:

W. H. Harrington
235 E. 42 St., New York 17, N.Y.

Pfizer

Calcification in Biological Systems

AAAS Symposium Volume No. 64

Edited by R. F. Sognnaes

July 1960

526 pp., 283 illus., \$9.75,

AAAS members' cash orders, \$8.50

This monograph deals comprehensively with the mechanism of mineral deposition throughout the animal kingdom. Current research approaches, findings and hypotheses are presented by investigators representing disciplines ranging from physical chemistry and histochemistry to electron microscopy and tissue culture. The central theme revolves about the question, "Why do certain normal and pathological tissues calcify?"

The 22 chapters are organized in an evolutionary sequence; (1) calcification within unicellular organisms and various lower animals, that is, the shells of the mollusc, the gastrolith and exoskeleton of the lobster, the mineralizing leg tendon of the turkey and the otolithic organ of the rat; (2) elements and mechanisms involved in the calcification of cartilage, bone, dentin, enamel and various pathological concretions; (3) experimental observations in organ transplants and in tissue culture; and culminating with (4) the physical and chemical nature of and relationship between the ultimate inorganic and organic building blocks most typical of normal calcification in the human organism.

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Biochemical Pharmacologist, recent Ph.D. Desires industrial position within New York City or vicinity; 6 years' experience enzymology of C.N.S. Box 175, **SCIENCE**. X

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All qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

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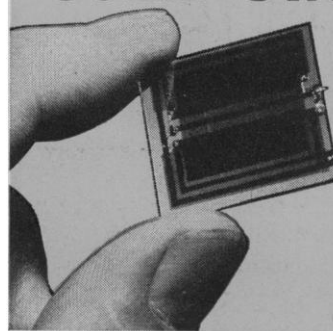
An appointment of Assistant Professor rank is open in **Biology** at the University of New Brunswick. Starting salary will be determined by experience and qualifications of the successful applicant. The field of interest in teaching and research of the applicant may be within any of the recognized divisions of biology. Direct inquiries to C. W. Argue, Head, Department of Biology, University of New Brunswick, Fredericton, N.B., Canada. 9/1

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Director of Research, Diamond Laboratories, 2538
S.E. 43rd, Des Moines, Iowa

COMPANY-SPONSORED RESEARCH: THIN FILMS AND SOLID STATE



Senior Scientists are needed for immediate openings in the General Dynamics/Astronautics Electronics Research Laboratories.

A large company-sponsored program in thin film and solid state research for applications to *Micro-miniaturization*, *Solar Energy Conversion*, and *Magnetic Computer Components* is in progress. Included are: (1) studies of the kinetics and structures of films using advanced electron microscope techniques; (2) epitaxy studies using pyrolytic vapor decomposition and ultra-high vacuum deposition of thin film crystals; (3) materials research for thin film passive and active components prepared by vacuum deposition, sputtering, anodization and electron beam graphics and cathodolysis; and (4) techniques for accurately monitoring and controlling the fabrication conditions and film characteristics for thin film microcircuit and large area energy conversion device fabrication.

If you are interested and have experience in these tasks and are trained in solid state physics, metallurgy and ceramics, physical chemistry or electronics, inquire now. Advanced degrees preferred but not necessary if talent and experience in these areas are indicated.

Please write Mr. R. M. Smith, Industrial Relations Administrator-Engineering, Dept. 130-90.

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1)—NEUROPHYSIOLOGY GROUP:

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2)—GENERAL NEUROPHARMACOLOGY GROUP:

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Send résumé & salary requirements to Personnel Department

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60 Orange St. Bloomfield, N.J.

ASSISTANT PROFESSOR OF PHYSIOLOGY

The University of Alberta invited applications for the position of Assistant Professor of Physiology, to become effective after 1 January 1962 at a salary, depending on qualifications and experience, within the range of \$6500-\$9200 per annum, with annual increments. Duties include a limited amount of undergraduate and graduate teaching, while the new staff member will be encouraged to pursue his own program of research. The department is interested in obtaining a staff member with some training in the field of cellular physiology but this should not exclude applicants with other special fields of interest. Inquiries for further information should be addressed to Dr. J. W. Pearce, Department of Physiology.

Applications for the above position, including a curriculum vitae, the titles of publications, a recent photograph and the names of three referees, should be sent to the DEAN OF MEDICINE, UNIVERSITY OF ALBERTA, EDMONTON, ALBERTA, CANADA.

9/1

POSITIONS OPEN

LABORATORY TECHNICIANS

For expanding slide department of biological supply company. Training in botanical technique and/or whole mount preparation required. Will consider short-term employment (2 years) as well as permanent employment. Salary commensurate with education, training, and experience. Excellent working conditions, suburban area, employee benefits, paid holidays and vacation, opportunities for advancement.

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Box 169, SCIENCE

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Cleveland Metropolitan General Hospital
3395 Scranton Road, Cleveland 9, Ohio

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Master's or doctorate degree in chemistry and/or bacteriology. Hospital clinical laboratory or educational experience necessary. To direct laboratory training school. Medical school appointment possible. Salary arranged. Write giving details to Personnel Director, New England Medical Center, 37 Bennett Street, Boston, Mass.

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922 pp., 256 illus., 1959 \$14.75
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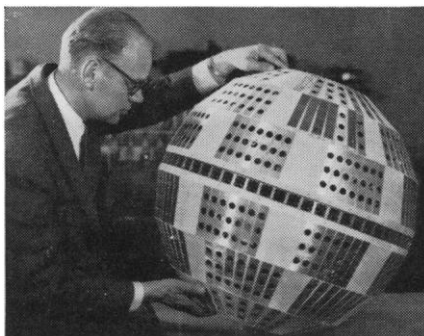
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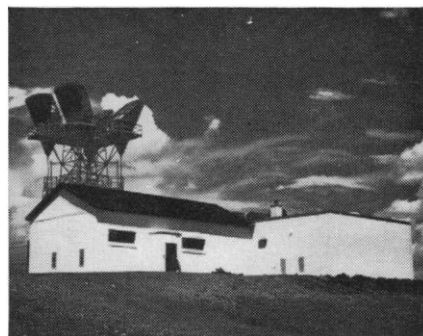
What was Bell Telephone Laboratories doing ON FRIDAY, JUNE 30, 1961?



It was exploring the communications possibilities of the gaseous optical maser — a device which generates continuous coherent infrared radiation in a narrow beam.



It was preparing an experiment in world-wide communications using "active" satellites powered by the solar battery, a Bell Laboratories invention.



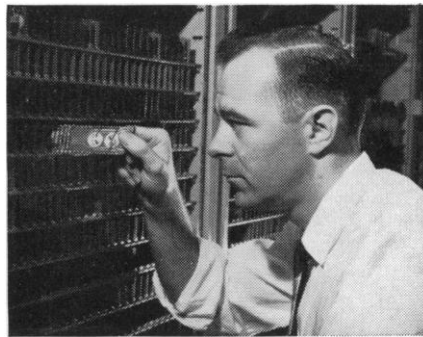
It was completing the development of a new "heavy route" Long Distance microwave system capable of handling over 11,000 two-way conversations at once.



It was developing an anti-missile defense system designed to detect, track, intercept and destroy an enemy ICBM — in a matter of minutes.



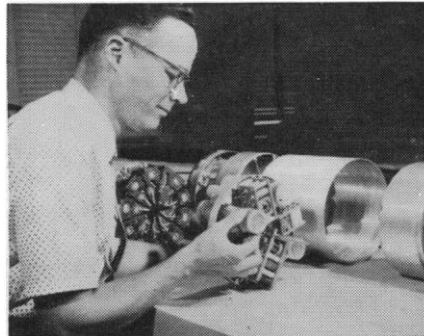
It was demonstrating the potentialities of the superconducting compound of niobium and tin for generating, with little power, magnetic fields of great strength.



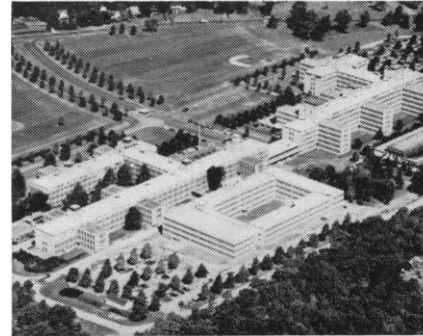
It was experimenting with an electronic central office at Morris, Ill., which is capable of providing a wide range of new telephone services.



It was perfecting the card dialer which permits, through insertion of a punched card into a slot, automatic dialing of frequently used numbers.



It was developing improved repeaters or "amplifiers" to increase greatly the capacity and economy of undersea telephone cable systems.



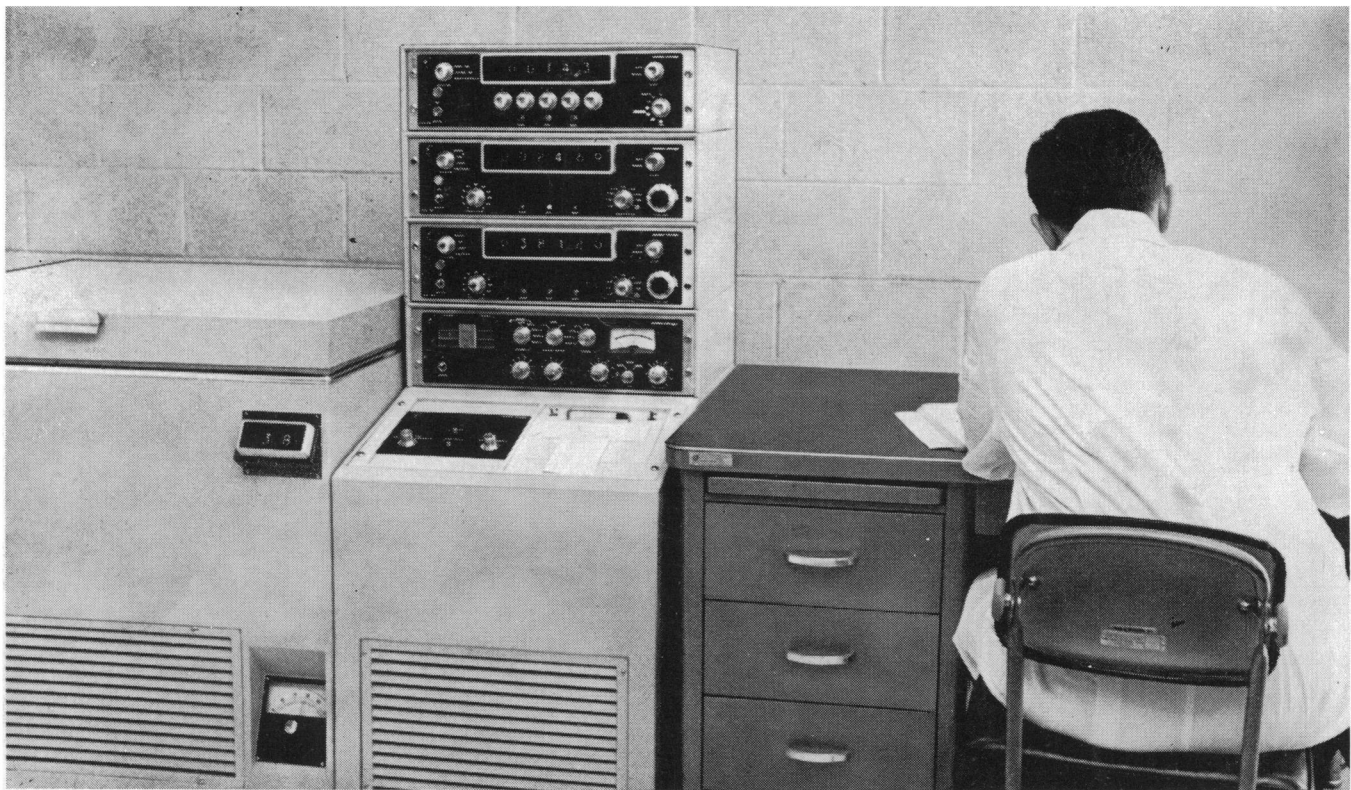
It was continuing its endless search for new knowledge under the leadership of scientists and engineers with world-wide reputations in their chosen fields.

Bell Laboratories scientists and engineers work with every art and science that can benefit communications. Their inquiries range from the ocean floor to outer space, from atomic physics to the design of new telephone sets, from the tiny transistor to massive transcontinental radio systems. The goal is constant—ever-improving Bell System communications services.

BELL TELEPHONE LABORATORIES

World center of communications research and development





Nuclear-Chicago's new family of liquid scintillation counters—

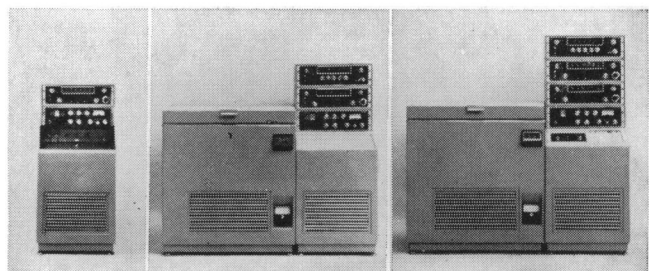
Just months old and already meeting the critical demands of exacting research

Although introduced and well received just last April, Nuclear-Chicago's new family of liquid scintillation counters is already hard at work. At varying levels of work load and within widely differing budgets, these three systems are setting new standards of precision, sensitivity and convenience for demanding scientists.

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Model 701 is a modestly priced, basic system for manual, room-temperature counting of limited numbers of samples. Uniquely sensitive detector assembly and advanced, transistorized circuitry provide high counting efficiency for carbon-14, tritium, and other soft-beta emitting isotopes. **Model 702** adds a precision-controlled low-temperature chamber for increased tritium-counting efficiency. The third member of the family, **Model 703**, provides fully automatic sample handling and varied options of readout.

Field conversion to upgrade Models 701 and 702 as work load and budget permit requires only the addition, first, of the custom-built, compact cooling chamber, and then, of the automatic sample changer mechanism.



Model 701

Model 702

Model 703

Model 701—manual operation, shown with 8250 scaler

Model 702—manual, temperature-controlled operation, shown with 8250 scaler and 8600 timer

Model 703—automatic, temperature-controlled operation, shown with two 8250 scalers, 8600 timer and 8401 digital recorder

Please request literature on these integrated systems.



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