

2005 HOPKINS ST.

BERKELEY 7, CALIF.

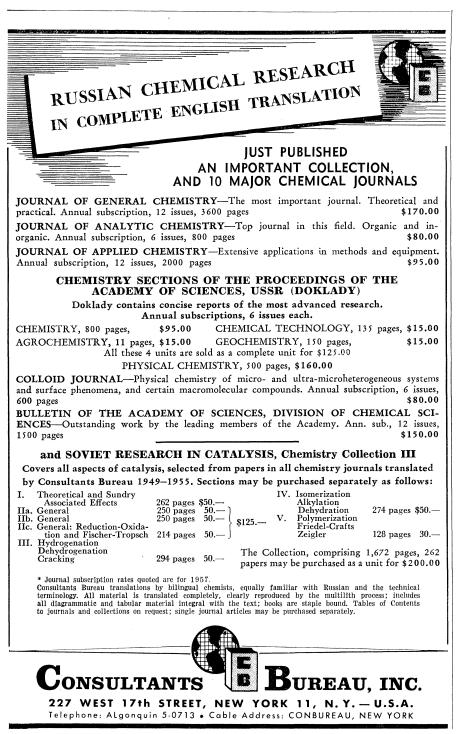
18 OCTOBER 1957

#### EQUIPMENT NEWS

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Science does not assume responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to Science, Room 740, 11 W. 42 St., New York 36, N.Y. Include the name(s) of the manufacturer(s) and the department number(s).

• SPECTROSCOPE, for visual spectrochemical analysis, features a solution excitation chamber with an indexing assembly for easy alignment of electrodes. The electrodes can be replaced after cleaning without readjustment. Thirty-nine elements can be detected. (Fisher Scientific Co., Dept. S665)

■ MIRROR GALVANOMETER, manufactured by Hilger and Watts Ltd., has sensitivity up to 2000 mm/µa. The scale image reflected from the galvanometer moves below a stationary index line. A darkened room is not required for reading. Antivibration support is provided within the instrument. (Jarrell-Ash Co., Dept. S654)



CAPACITANCE BRIDGE covers the range of capacitance from 0 to 120  $\mu$ f in seven ranges. Accuracy is better than 0.2 percent and within 0.01  $\mu\mu$ f in the lowest range. Dissipation factors from 0 to 1.05 at a frequency of 1 kcy/sec can be measured in three ranges. Excitation generators and detectors are included in the instrument. (Electro Measurements, Inc., Dept. S649)

AUTOMATIC FRACTION COLLECTOR consists of an indexing mechanism, a turntable for holding the receiving tubes, and a volumetric siphon. Turntables are available for collection of up to 500 fractions in one run with fraction size ranging from 1 to 100 ml. Drop counting or constant time control are interchangeable. The drop-counting unit may be preset for counts up to 400. The constant timing unit is operative over a range from 18 sec to 120 min. (Research Specialties Co., Dept. S644)

■ PLASTIC TUBING, reinforced with metal, will bend around a 5/16-in. diameter spindle without reduction of internal bore. Sizes range from ½ to 1 in. internal diameter. Working temperature ranges from 170° to -5°F and working pressure ranges from 100 to 200 lb/in.<sup>2</sup> The tubing is resistant to gasoline, oils, and sea water and is self-extinguishing. (Newage International Inc., Dept. S666)

■ DIFFERENTIAL TRANSFORMER features less than 2-mv null voltage. Displacement range is ± 0.02 in. Output is linear within 0.1 percent. Input is 6.3 v at 400 cy/sec. The transformer may be operated at any temperature to 400°F. Micrometer threads on the case permit precise positioning. (Automatic Timing and Controls Co., Inc., Dept. S655)

CYTOANALYZER is designed to detect abnormal cells by microscopically scanning slides on which specimens from vaginal smears have been placed. The instrument is still in the experimental and testing stage. The scanner examines the pertinent area of the smear and converts optical signals into electrical signals that are fed to a computer. The computer applies certain rules to the signals, measures nuclear size and nuclear optical density of the cells, and distinguishes between normal and suspected cells. Scanning and simultaneous computation take less than 0.2 msec. (National Institutes of Health, National Cancer Institute, Dept. S661)

ULTRAVIOLET STREAK SPECTROGRAPH provides a two-coordinate photographic record of ultraviolet spectrum versus time. The spectral range is 3050 to 4350 A. Time resolution is variable, with a lower limit of 0.1 µsec. Linear dispersion on the film is 45 A/mm, and spectral resolution is 0.7 A. A grating is used as the dispersing element. The spectrum formed is brought to focus on a drum camera by a six-element, fused-quartz objective. The instrument will provide trigger signals for initiation of events to be studied. (Tropel Inc., Dept. S662)

**RADIOACTIVITY SCANNER**, for mapping specific organs or locating neoplastic lesions, covers an area up to 40 by 32 cm. The record is in constant view during operation. A background-erase circuit permits contrast improvement. Either a standard scaler or a pulseheight analyzer and a highly collimated detector are supplied. The equipment is mobile and narrow enough to pass through doorways. (Nuclear Corporation of America, Dept. S663)

SMOKE-POINT LAMP, for testing hydrocarbon fuels, is equipped with a calibrated chimney so that the smoke point, the maximum height (in millimeters) of the flame at which the fuel will burn without smoking, can be read off directly. (Central Scientific Co., Dept. S677)

BATTERY "ELIMINATOR" is designed to replace storage battery and floater combinations for spectrometers and for other applications in which severe stability, low-noise, and transient requirements

exist. Outputs are 6 v, adjustable to  $\pm 5$ percent at 0 to 5 amp, and 2 v, adjustable to ±5 percent at 0 to 100 ma. Ripple and noise are 1 mv r.m.s. at 6 v and 0.5 mv r.m.s. at 2 v. Recovery time is 0.001 sec for 63-percent recovery. Line regulation for 105- to 125-v or 210- to 250-v input is 0.01 percent. Load regulation is 0.05 percent for 6 v output and 5 percent for 2 v output. (American Electronic Laboratories, Inc., Dept. S672)

DIALYZING VESSEL for small quantities consists of two Pyrex parts with ground surfaces between which a membrane is held. The compartment beneath the membrane, which is 60 cm<sup>3</sup> in volume, is filled with buffer. The solution to be dialyzed is placed above the membrane. A solution volume of 1 ml can be dialyzed in 1 hr. (Kern Company, Dept. S664)

ALPHA-BETA SURVEY METER is transistorized, operating for 150 hr from two standard 1.5-v D-size flashlight cells. Three sensitive ranges have maximum values of 0.5, 5.0, and 50 mr/hr. The detecting element is a halogen-quenched tube with 1.4- to 2-mg/cm<sup>2</sup> window. (Universal Transistor Products Corp., Dept. S669)

JOSHUA STERN National Bureau of Standards

for the fields of basic radiological research

#### **DETECTOLAB DZ46**

#### Automatic Gamma Ray Spectrum Recorder

• Automatic single or repetitive scan • Front panel selection of five scan-ning speeds and limits • Automatic repetitive charting with no mirror image.

#### DETECTOLAB DZ4

**Coincidence** Circuit

• Fastest commercially-available co-incidence circuit (.01  $\mu$  sec.) • Capable of measuring minute radiation samples • Reduces background 99% • Operates with conventional gamma spectrometer.

#### DETECTOLAB DS8

**Precision Binary Scaler** 

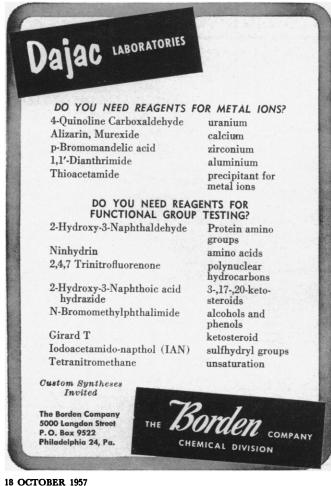
• Less than 2  $\mu$  sec. resolving time • Positive or negative input • Front panel discrimination adjustment • Lightweight and compact for relay rack mounting.

#### **Detectolab Instruments are** products of

#### **BJ ELECTRONICS** BORG-WARNER CORPORATION

3300 Newport Blvd., Santa Ana, Calif.

Export Sales: Borg-Warner International, Chicago, Ill.





new instruments for infusion and retracting of liquids

#### FOR GENERAL APPLICATION

HERE is an economical and convenient means for delivering small quantities of liquids at accurately controlled rates.

A threaded shaft, carrying a syringe holder and a pusher, is mounted in place of the regular drum spindle and rotated in the same manner. Syringes are clamped in place, or released by turning a single thumbscrew. The unit is designed to be attached to, and driven by, our Bird Kymograph #70-060. This propeller may be used with equal facility on our older model (four-speed kymograph.

Since any Luer syringe, from 5 ml. to 50 ml. capacity may be used, and since the kymograph drive provides a

Syringe Driver

choice of five speeds, a wide range of delivery rates is available, as indicated in the following table.

This instrument has clinical applications in anaesthesia, surgery, gynecology, radiology and neuropsychiatry. It is particularly useful for administering small volumes of injectible drugs which are to be given over a period of time.

71-04990 Syringe Driver and Kymograph (less drum and drum shaft) and without syringe.

71-0499 Syringe Driver

only.

Approximate	Delivery	Rates in	Millilit	ers per	minute.	
Syringe Capac	ity 5	10	20	30	50	
Speed No. 1	.0046	.0059	.0118	.0157	.024	
Speed No. 2	.023	.030	.059	.078	.12	
Speed No. 3	.116	.148	.29	.39	0.6	
Speed No. 4	.58	.78	1.48	1.96	3	
Speed No. 5	2.9	3.7	7.4	9.8	15	

#### SYRINGE RETRACTOR

Similar to the Bird Syringe Driver, (Catalogue No. 71-0499), but is designed for withdrawing samples of blood (or other liquids) at accurately controlled rates.

71-04492—Syringe Retractor and Kymograph (less drum and drum shaft) and without syringe. 71-04991—Syringe Retractor, complete with change-gears.

Manufacturers & Distributors of Scientific Equipment (P) 6th & Byrd Streets - Richmond, Va.

## PERSONNEL PLACEMENT

CLASSIFIED: 18¢ per word, minimum charge \$3.60, Use of Box Number counts as 10 additional words. Payment in advance is required.

**COPY** for classified ads must reach SCIENCE 2 weeks before date of issue (Friday of every week).

**DispLAY:** Rates listed below — no charge for Box Number. Monthly invoices will be sent on a charge account basis — provided that satisfactory credit is established.

Single insertion \$22.00 per inch 13 times in 1 year 21.00 per inch 26 times in 1 year 20.00 per inch 52 times in 1 year 19.00 per inch For PROOFS on display ads, copy must reach SCIENCE 4 weeks before date of issue (Friday of every week).

Replies to blind ads should be addressed as follows: Box (give number) Science 1515 Massachusetts Ave., NW Washington 5, D.C.

POSITIONS OPEN

#### Assistant Neuro-Physiologist

Interesting assignment in our new pharmacology laboratory for young scientist with M.S. degree or equivalent in physiology or related field. Familiarity with human nervous system and EEC techniques essential. Excellent benefit program including educational assistance. In confidence send complete résumé to Personnel Department.

Schering Corporation Manufacturer of Fine Pharmaceuticals 60 Orange Street Bloomfield, N.J.

#### POSITIONS OPEN

Biological Scientist. M.S. or equivalent in physiology, pharmacology, or biochemistry, or some combination thereof, to participate in the analysis of scientific data in connection with research and development activities of large manufacturer. Eastern location. Liberal benefit program. Send complete personal data. Box 279, SCIENCE. 10/25

(a) Biophysicist or Biochemist trained in radioisotopes, health physics, familiar with instrumentation and statistical methods in tracer methodology; medical school research department; West. (b) Biochemist and Microbiologist, Ph.D.'s preferred; 600-bed teaching hospital; staff has two Board pathologists; Midwest. (c) Neurophysiologist or Physiological Psychologist interested in career in audition research; preferably Ph.D.; new laboratory; university affiliation; long-range research program; West. (d) Pharmacologist or Biochemist, preferably Ph.D.; new research department, pharmaceutical company established 82 years; expansion program; suburb, university city, Midwest. (e) Pharmacologist, Ph.D., research laboratory, pharmaceutical company; \$7500-\$10,000; if M.D., \$10,000-\$12,000. S103 Medical Bureau, Burneice Larson, Director, 900 North Michigan Avenue, Chicago. X

(a) Clinical Bacteriologist. M.S., Ph.D. to establish and supervise bacteriology laboratory, medical consultation service; exceptional research facilities, opportunity independent projects; 150-bed approved hospital; to \$8000; popular summer resort community 10,000; Midwest. (b) Biochemist. Ph.D. for new research laboratory now being developed; initially cardiovascular research, will vary projects later; affiliated large hospital; to \$12,000; Mideast. (c) Chemist. B.S., M.S. experienced toxicology, clinical chemistry, physical methods, capable of all latest chemical procedures; county health laboratory; \$6200; city 25,000; East. Woodward Medical Bureau, Ann Woodward, Director, 185 N. Wabash, Chicago. X

#### POSITIONS OPEN

#### VENEZUELAN INSTITUTE FOR NEUROLOGY AND BRAIN RESEARCH CARACAS, VENEZUELA

invites applications for the position of Scientific Director of Reactor Operations

Candidates should have a degree in one of the physical sciences or engineering and experience in the operation of nuclear reactors and in the direction of research activities relating to the use of reactors and associated equipment.

For further details regarding terms of employment, salary, living conditions, etc., candidates should submit detailed applications to

W. H. Zinn General Nuclear Engineering Corporation

P.O. Box 245, Dunedin, Florida

NEW WORLD-WIDE GRADUATE AWARD DIRECTORY. First compilation ever prepared for American scientists, teachers and librarians to subsidize their education and research in over 350 universities in 45 states, 30 foreign lands. Stipends \$200-\$10,000. Complete information. Pre-publication price before 15 Nov. 1957, \$1.50. Regular price, \$2. CRU-SADE, SCI., Box 99, Station G, Brooklyn 22, N.Y. 10/4, 11, 18, 26; 11/1 A special pre-publication offer to "scientists, painters, poets, philosophers, engineers, businessmen, teachers, tinkers"\* and others—on the five new

## **SCIENTIFIC AMERICAN books**

#### These are the 5 new SCIENTIFIC AMERICAN

#### books

**THE PLANET EARTH.** Required reading in this International Geophysical Year. This book ignores the thin film of ever-changing animal and plant life on the Earth; it considers the forces, tides, and currents that stir our planet's core, crust, oceans, and atmosphere. 176 pages. Illustrated.

LIVES IN SCIENCE. Here the reader will meet two or three authentic giants, a hero or two, a saint and a rascal, sunny men of action, sour recluses, and a collection of eccentrics, prodigies and sages. Each man made his contribution to the 400-year history of science. 288 pages. Illustrated.

**THE NEW CHEMISTRY.** Current activity in the new chemistries of high speeds and temperatures, of "outlaw particles" and "free radicals," and rare earths, and of exquisitely sensitive analyses that detect an atom or two at a time. 244 pages. Illustrated.

PLANT LIFE. Plants furnish us with cheap and invaluable laboratory subjects for studying growth and form, genetics and evolution and the underlying chemistry of life — with its revolutionary impact upon agriculture and human nutrition. 256 pages. Illustrated.

**THE UNIVERSE.** How the two contending schools of modern cosmology (one of which believes that the universe is expanding) are putting their theories to the test of observation. 160 pages. Illustrated in gravure.

And here are the first 5 SCIENTIFIC AMERICAN BOOKS (more than 40,000 of each already sold)

AUTOMATIC CONTROL. About the mechanical "nervous systems" that make machines and factories regulate themselves.

**ATOMIC POWER.** The peace-loving atom: how nuclear reactors will be used to light homes and turn the wheels of industry.

THE NEW ASTRONOMY. The birth and death of stars, red giants and blue dwarfs, double stars and solar systems, globular clusters, errant comets, interstellar dust, galaxies.

THE PHYSICS AND CHEMISTRY OF LIFE. Life is explained in terms of the structure and behavior of the molecules that make up cells and tissues. 270 pages. Illustrated.

A TWENTIETH CENTURY BESTI-ARY. A new look at the behavior of animals, from the language of the bee to curiosity in monkeys. 240 pages. Illustrated. The brilliantly-acclaimed new series in which the world's leading scientists, writing in clear, non-technical language, report to the layman (and to their colleagues in other fields) news of the latest investigations on the frontiers of science.

#### S IMON AND SCHUSTER will shortly publish five new paperback books in the first science library of its kind. They are briefly described in the panel. Each book, superbly written, edited, and illustrated, gives a comprehensive view of new discoveries and con-

clusions in one major field of science. Each book derives from articles that have appeared in *Scientific American Magazine* – the century-old periodical which, 10 years ago was, in the words of the *New York Times* "miraculously transformed by new hands into one of the most remarkable ventures in the history of scientific publication. Its roster of contributors reads like a Who's Who of contemporary science." The *New Yorker* has called it "without much doubt our most satisfactory link between the general public and the laboratory."

#### How a publishing experiment became an instant success

The first 5 SCIENTIFIC AMERICAN BOOKS were published last year.

They were an instant success. Over 40,000 copies of each have already been sold.

## The *Times* calls the series "a stimulating source of information and reflection" for the reader who is "curious to learn about himself and the world he lives in."

\* The Bulletin of the Atomic Scientists wrote: "They are of interest not only to the non-scientist but to the professional who wishes to be *au courant* with the latest developments outside his specialization. One hopes Scientific American will be encouraged to expand its coverage with more books of this quality."

And here are typical reactions from readers: New Orleans: "It almost literally opened a new world for me. I'm a sociologist and

according to the Times, are likely to enjoy SCIENTIFIC AMERICAN BOOKS.

\*A partial list of the people who,

knew nothing about any of the physical sciences. Intelligible, exciting." . . . A New York reader praises the attractive format – adding "but I would read this kind of writing on wrapping paper."

To these thousands of readers – as well as to thousands more who are about to discover SCIENTIFIC AMERICAN BOOKS for the first time, we are happy to present the five new books in the second series.

#### A special pre-publication offer

The new titles, described in the panel, will soon be off press. They are handsomely printed, and illustrated, bound in strong paper covers. A large first printing enables us to price these books (size  $5\frac{1}{2} \ge 3$ ; 160 to 288 pages) at only \$1.45 each.

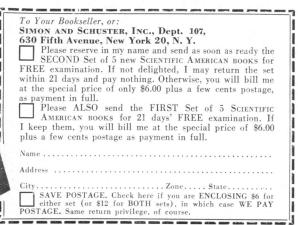
Readers who order the complete set of five, now, will be billed at only 6 - a saving of \$1.25 on the five books.

#### SEND NO MONEY Examine for 3 weeks, free

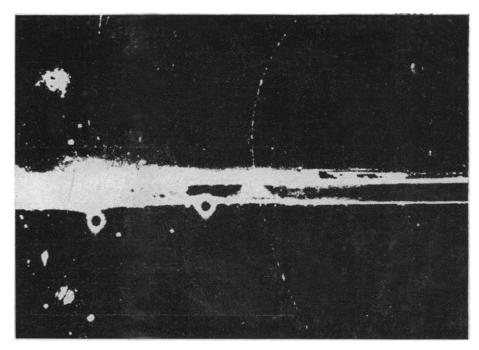
You need send no money with the reservation form. But do mail it today. The books will be sent to you as soon as possible. Examine them, read them, enjoy them for 21 days.

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If you are not delighted with them, send them back and pay nothing. Otherwise we will bill you at only \$6 plus a few cents postage. SIMON AND SCHUSTER, Publishers, Dept. 107, 630 Fifth Avenue. (Company and Institutional inquiries invited.)



On Television, Friday Night, October 25



Featured in the program on cosmic-ray research is this classic scientific photograph of positron tracks taken by Dr. Carl D. Anderson in 1932. Photograph courtesy of The Physical Review.

# "The Strange Case of the COSNIC RAYS"

"The Strange Case of the Cosmic Rays" is the third program in the Bell Telephone System's new TV Science Series.

The two earlier programs—"Our Mr. Sun" and "Hemo the Magnificent"—were widely acclaimed by educators, scientists and the general public.

Scientific accuracy is assured by a Scientific Advisory Board and distinguished advisors,

including Dr. Carl D. Anderson, Dr. Bruno Rossi and Dr. Marcel Schein. The program was produced and directed by Academy-Award-winning director Frank Capra.

Everyone associated with the sciences will find "The Strange Case of the Cosmic Rays" of unusual interest. Don't miss it—and remind your colleagues to see it on Friday, October 25.

In color and black and white on the **NBC-TV** network, Friday, **October 25**, **9-10 P.M.**, **E.D.T.** Please check your local listing for time and station.

### Sponsored by BELL TELEPHONE SYSTEM