

SCIENCE

20 June 1958

Volume 127, Number 3312

Editorial	Members $\times 2$	1417
Articles	Near Eastern Prehistory: <i>R. J. Braidwood</i>	1419
	The swing from food-collecting cultures to village-farming communities is still imperfectly understood.	
	New Reference Nuclide: <i>T. P. Kohman, J. H. E. Mattauch, A. H. Wapstra</i>	1 31
	The use of ^{12}C as the basis for a unified scale of nuclidic masses and atomic weights is proposed.	
	George Malcolm Stratton, Social Psychologist: <i>C. W. Brown</i>	1432
News of Science	United Nations Radiation Report; other events	1434
Book Reviews	<i>The Tao of Science</i> ; other books	1438
Reports	Experimental Mucormycosis in the Healthy Rat: <i>E. J. Josefak and J. H. S. Foushee</i>	1442
	Evidence for a Blue-Sensitive Component in the Retina of the Gecko, <i>Oedura monilis</i> : <i>F. Crescitelli</i>	1442
	A Mechanism for Pyridine-Nucleotide-Dependent Dehydrogenases: <i>J. van Eys, A. San Pietro, N. O. Kaplan</i>	1443
	Production of Sterility in Mice by Deuterium Oxide: <i>A. M. Hughes and M. Calvin</i>	1445
	Dating of Zawi Chemi, an Early Village Site at Shanidar, Northern Iraq: <i>R. S. Solecki and M. Rubin</i>	1446
	Nucleolar Chromosome in the Rust Fungus <i>Scopella gentilis</i> : <i>M. M. Payak</i>	1446
	Histochemical Localization of Acid Phosphatase in Bone Tissue: <i>F. Schajowicz and R. L. Cabrini</i>	1447
	Transmission of Internal Cork of Sweet Potato by the Cotton Aphid, <i>Aphis gossypii</i> Glover: <i>E. J. Kantack, W. J. Martin, L. D. Newsom</i>	1448
Departments	Meetings; Letters; Equipment	1450



1948—Early “point contact” transistor.

The remarkable transistor observes its 10th birthday

In 1948, Bell Telephone Laboratories announced the invention of the transistor. In 1958, the transistor provided the radio voice for the first United States satellite.

To advance the transistor to its high level of usefulness, Bell Labs had solved problems which, in themselves, approached the invention of the transistor itself in scientific achievement.

First, there had to be germanium of flawless structure and unprecedented purity. This was obtained by growing large single crystals—and creating the “zone refining” technique to purify them to one harmful part in *ten billion*.

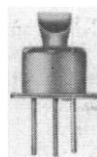
The “junction” transistor, another radical advance, spurred transistor use. Easier to design, lower

in noise, higher in gain and efficiency, it became the heart of the new electronics.

An ingenious technique for diffusing a microscopically thin layer on semiconductors was created. The resulting “diffused base” transistor, a versatile broadband amplifier, made possible the wide use of transistorized circuits in telephony, FM, TV, computers and missiles.

In telephony the transistor began its career in the Direct Distance Dialing system which sends called telephone numbers from one exchange to another.

For Bell System communications, the transistor has made possible advances which would have been impossible or impractical a brief decade ago.



1958—Satellite transistor,
incorporating 10 years of
Bell Labs research and development.



BELL TELEPHONE LABORATORIES

WORLD CENTER OF COMMUNICATIONS RESEARCH AND DEVELOPMENT

Get light of needed wavelength at the turn of a dial

Bausch & Lomb Grating Monochromators

with

CERTIFIED PRECISION GRATINGS

Pure, intense light . . . ultra-violet, visible, or infra-red—just turn the micrometer drum to set the grating to the desired wavelength. Wide choice of gratings for full range coverage (2000Å-14,000Å), or for more intensive U-V or infra-red study. Nine monochromator models, with linear dispersion from 66Å/mm to 16.5Å/mm, first order.

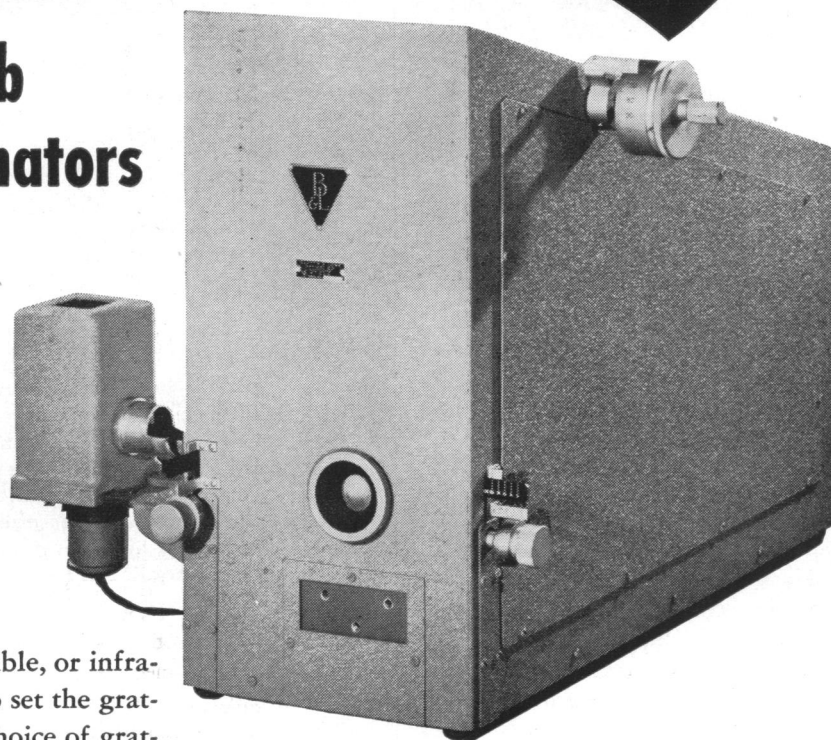


B & L OPTICS FOR ULTRA-VIOLET WORK

Complete accessories for critical study under high intensity U-V illumination. Twice the resolving power attainable with visible light.

WRITE FOR INFORMATIVE DATA!

For your copy of Catalog D-259, for an obligation-free demonstration, for expert advice on specific applications, write to Bausch & Lomb Optical Co., 75930 St. Paul St., Rochester 2, N. Y.



- Direct irradiation
- U-V microscopy
- Photo-chemistry
- Physical chemistry
- Spectro-photometry

BAUSCH & LOMB



America's only complete optical source . . . from glass to finished product

SCIENCE, VOL. 127

Stoelting

SERVO-GRAPHIC STRIP CHART RECORDER

Solves your recording problem

in the 10 to 100 Millivolt DC range
at the Lowest Cost

The principle of operation is based on a null balancing system using a multi-turn potentiometer and servo-motor. The simple basic design and rugged construction provides utmost reliability. Features: long life photo-electric chopper, rectilinear recording, variety of chart speeds and drives, mounts and writes horizontal or vertical, all components readily accessible.

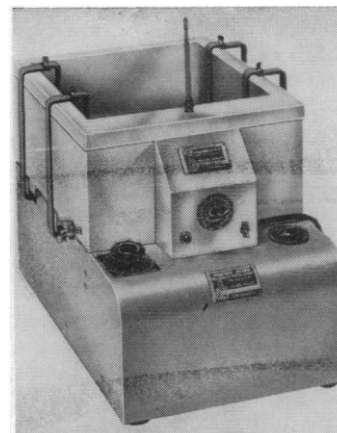
C. H. STOELTING CO.
424 N. HOMAN AVE. • CHICAGO 24, ILL.

CATALOG No. 22700

- HIGH IMPEDANCE INPUT
- 5" USEFUL CHART WIDTH
- PEN TRAVEL 2" SECOND STD.
- RAPID PEN CHANGING
- TABLE OR PANEL MOUNTING
- HIGH STABILITY

ROTARY WATER BATH SHAKER

- Variable speed range 85 to 285 osc. per min.
- Temperature range 30°C. to 100°C. $\pm .5^\circ$
- Available for shaking various size flasks.



A shaking apparatus that is extremely useful for cultivating micro-organisms under conditions of aeration and with more precise temperature control than is possible in an incubator. It is particularly valuable in obtaining bacterial growth curves.

Detailed information available upon request
Write for Bulletin RW-SI



NEW BRUNSWICK SCIENTIFIC CO.

PRECISION LABORATORY APPARATUS

P. O. BOX 606 • NEW BRUNSWICK, N. J.

A Portion of the Sigma Reagent Catalog

One of a series of advertisements which will reproduce the complete list. Complete list available promptly on request.

p-CHLOROMERCURIBENZOATE, Sodium Crystalline. This Crystalline Sodium Salt is much easier to dissolve than the Free Acid. Free Acid is still available if you tell us not to substitute the Sodium Salt. Ask for Bulletin No. 300. 1 g 7.25 5 g 34.00 10 g 61.00

p-CHLOROMERCURIPHENYL SULFONIC ACID. An interesting SH inhibitor; more soluble than pCMA. 1 g 35.75 5 g 178.75 10 g 357.50

6-CHLOROPURINE (pfs) 1 g 7.50 5 g 35.00 10 g 65.00

8-CHLOROXANTHINE (pfs) 1 g 5.00 5 g 22.50 10 g 45.00

CHONDROITIN SULFATE, Purified. 100 mg 5.00

Per Einbeinder & Schubert (pfs) 1 g 25.00

CHOLINESTERASE (Acetyl) From Bovine Erythrocytes (pfs) **Inquire**

CHONDROITIN SULFATE Sodium Salt (pfs) 1 g 2.00 5 g 8.75

α -CHYMOTRYPSIN, Cryst. (pfs) Salt Free. Bovine Pancreas. 500 mg 12.00 1 g 20.00

CHYMOTRYPSINOGEN, Cryst. 6X (pfs) Salt Free. Bovine Pancreas. 500 mg 7.50 1 g 12.00

CITRIC ACID BUFFER, Stock No. 104-4 pH 4.8 25 ml 1.25

CITRULLINE, DL (pfs) 1 g 2.00 10 g 12.00

COCARBOXYLASE, Sigma (pfs) (Thiamine Pyrophosphate C1) 100 mg 6.00 250 mg 12.00 1 g 45.00

COENZYME-I — See Diphosphopyridine Nucleotide

COENZYME-II — See Triphosphopyridine Nucleotide

COENZYME-A — From Yeast 70-75%. 10 mg 8.50 25 mg 20.00

COENZYME-A — Crude — See Liver Concentrate or Yeast Concentrate.

COLLAGEN (Tendon) (pfs) 1 g 3.00 5 g 10.00

COLLAGENASE (pfs) 100 mg 9.50 500 mg 30.00 1 g 50.00

CORTISONE ACETATE (pfs) 100 mg 3.00 1 g 8.00

CORTISONE (Alcohol) (pfs) 100 mg 3.50 1 g 10.00

COZYMASE — See Diphosphopyridine Nucleotide

COZYMASE, REDUCED FORM — See Dihydro Diphosphopyridine Nucleotide

CREATINE PHOSPHATE — See Phosphocreatine

L-CYSTEINE HCl (pfs) 25 g 2.25 100 g 7.00

CYCLOC DIANHYDRO DIADENYLIC ACID **Inquire**

CYTIDINE DIPHOSPHATE, Sodium Salt Sigma Grade 5 mg 18.00

CYTIDINE-(5')-DIPHOSPHO-CHOLINE, Sodium, Sigma Crystalline; from Yeast. Almost 100% pure. Isolated and crystallized by Sigma for the first time. 10 mg 9.00

CYTIDINE-5-PHOSPHATE, Sodium Salt Sigma Grade 10 mg 6.50

CYTIDINE TRIPHOSPHATE, Sodium Salt Sigma Grade 10 mg 16.50

CYTOCHROME-C, Sigma — Free of Ammonium Sulfate and Sodium Chloride. Purity 90-100% based on Mol. wt. of 16,500. Higher purities may be available. **Inquire.**

From Horse-heart 100 mg 6.45 250 mg 15.30 1 g 41.75

From Beef-Heart 100 mg 11.00 250 mg 21.50 1 g 60.00

CYTOCHROME-C — Special Purity, Sterile Pyrogen-free Saline Solution. Contains 10 mg Horse Cyto-C per cc, based upon Mol. Weight of 12,270. 5 cc vial 6.25

CYTOCHROME-C — Special Preparations Made to Order

CYTOSINE (pfs) (4-Amino-2-hydroxypyrimidine) 1 g 3.00

CYTOSINE-5-CARBOXYLIC ACID (4-Amino-5-carboxy-2-hydroxypyrimidine) 500 mg 5.00 1 g 8.00 5 g 30.00

DEHYDROISANDROSTERONE (Alcohol) (pfs) 1 g 5.50

DEHYDROISANDROSTERONE ACETATE (pfs) 1 g 4.00

16-DEHYDROPREGNEOLONE (pfs) 1 g 2.75

16-DEHYDROPREGNEOLONE ACETATE (pfs) 1 g 2.50

DEOXYADENOSINE (pfs) 250 mg 3.75 500 mg 6.00 1 g 10.00

DEOXYCORTICOSTERONE ACETATE USP (pfs) 1 g 5.50

DEOXYCORTICOSTERONE (Alcohol) (pfs) 1 g 5.50

DEOXYCYTIDINE HCl (pfs) 500 mg 7.50 1 g 12.00

DEOXYGUANOSINE (pfs) 250 mg 4.50 500 mg 7.50 1 g 12.00

DEOXYINOSINE (pfs) 100 mg 7.00 250 mg 15.00

DEOXYRIBONUCLEASE, Cryst. (pfs) 100 mg 75.00 1 g 600.00

DEOXYRIBONUCLEIC ACID (pfs) (DNA) From Calf Thymus — Highly Polymerized 100 mg 15.00 1 g 100.00

2-DEOXY-D-RIBOSE (pfs) 99.85% min. 100 mg 5.00

2-DEOXY-D-RIBOSE ANILIDE (pfs) 1 g 20.00 5 g 90.00

DEOXYURIDINE (pfs) 250 mg 9.00 1 g 25.00

Other package sizes shown in complete catalog

TELEPHONE COLLECT from anywhere in the world
Day, Station to Station PRospect 1-5750
Night, Person to Person Dan Broida—
WYdown 3-6418

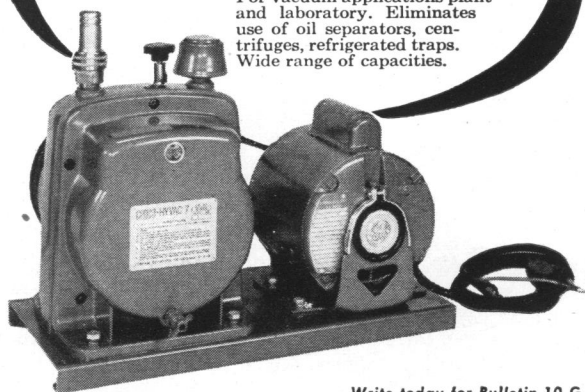


SIGMA CHEMICAL COMPANY

3500 DeKalb Street, St. Louis 18, Mo., U.S.A.

MANUFACTURERS OF THE FINEST BIOCHEMICALS AVAILABLE

NEW!
CENCO® HYVAC
GAS BALLAST PUMPS



For vacuum applications plant and laboratory. Eliminates use of oil separators, centrifuges, refrigerated traps. Wide range of capacities.

Write today for Bulletin 10 G.



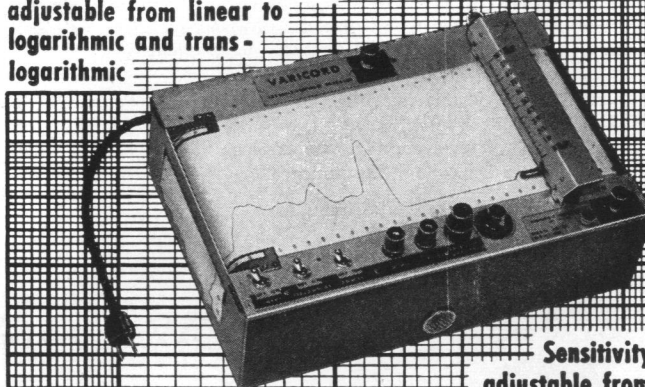
the most complete line of scientific instruments and laboratory supplies in the world.

CENTRAL SCIENTIFIC CO.

1718 N. Irving Park Road • Chicago 13, Illinois
Branches and Warehouses — Mountainside, N. J.
Boston • Birmingham • Santa Clara • Los Angeles • Tulsa
Houston • Toronto • Montreal • Vancouver • Ottawa

VARICORD
VARIABLE-RESPONSE RECORDER
for densitometry in paper electrophoresis

Recording function electrically adjustable from linear to logarithmic and trans-logarithmic



Sensitivity adjustable from 10 to 200 millivolts

Designed specifically to be used with scanning densitometers for correctly-compensated quantitative evaluation of electrophoretic patterns on filter paper

Write for Bulletin #1100

Also: Densitometers pH Meters Colorimeters Fluorescence Meters Electronic Photometers Multiplier Photometers

PHOTOVOLT CORP.

95 Madison Ave.

New York 16, N. Y.

LARGE
500 DIVISION SCALE FOR
SMALL
WEIGHTS — 2 MG TO 20 GRAMS



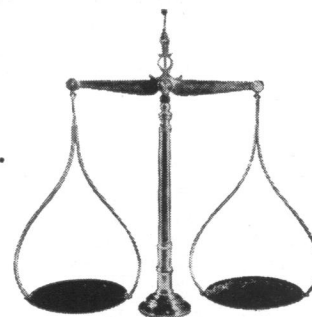
VDF MICRO TORQUE
BALANCES

1 Scale Division from .002 mg to .02 grams

C. A. BRINKMANN & CO., INC.

Cutter Mill Road, Great Neck, L. I., N. Y.

*There Is a
Delicate
Balance...*
between
**QUALITY and
ECONOMY**



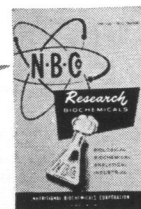
NUTRITIONAL BIOCHEMICALS CORPORATION always assures you the economy of lowest possible prices... yet never sacrifices their proudest asset — quality of product.

- OVER 225 AMINO ACIDS
- OVER 90 PEPTIDES
- OVER 200 NUCLEOPROTEINS, PURINES, PYRIMIDINES
- MISCELLANEOUS BIOCHEMICALS
- VITAMINS
- ENZYMES
- GROWTH FACTORS
- STEROID HORMONES
- BIOLOGICAL SALT MIXTURES
- BIOLOGICAL TEST MATERIALS



**NUTRITIONAL
BIOCHEMICALS
CORPORATION**

21010 Miles Avenue . . . Cleveland 28, Ohio



Write For
New Catalog
May 1958
Over 2300 Items
Write Dept. 102