All the standard and test solutions regularly prepared in Eimer and Amend’s laboratories are described in the new booklet shown above. The list is but a small portion of the hundreds of solutions which are prepared and standardized; it includes, however, those solutions which laboratories generally obtain to save time and insure greater accuracy.

Eimer and Amend’s solutions are accurately prepared and very carefully standardized by means of the latest approved methods and electronic instruments. The Volumetric Standards are guaranteed to be within ± 0.05% of the normality stated on each label.

If your laboratory has not received "Eimer and Amend Standard and Test Solutions," write for a free copy today.
THE GENUS CREPIS
By ERNEST BROWN BABCOCK

Part I: The Taxonomy, Phylogeny, Distribution, and Evolution of Crepis.
A general treatise on a group of related species, based on evidence from morphology, cytology, genetics, geographic distribution, and paleontology. It will be the standard work for many years to come.
About 200 pages, illustrated.
Probable price, $3.00

Part II: Systematic Treatment.
About 800 pages, 34 plates, 300 figures.
Probable price, $8.00

University of California Publications in Botany, volumes 21 and 22.
Both volumes will be ready late in 1945.
Advance orders are now being taken.

UNIVERSITY OF CALIFORNIA PRESS
Berkeley 4 Los Angeles 24

Please send all mail to the Berkeley office.

If YOU Need
LABORATORY FURNITURE
—Get More for Your Money by this Sensible Plan

You want the enduring qualities and working conveniences that have made Kewaunee Laboratory Furniture the choice for America’s Finest Laboratories.... Now you can have them without extra cost, thanks to—

KEWAUNEE’S "CUT-COST" PLAN OF UNIT ASSEMBLY

By quantity production of matching units, Kewaunee lowers the cost—gives you finest materials and workmanship ... plus modern streamlined design, which enables your Laboratory to “grow gracefully.” Kewaunee prices are competitive.
Your inquiry is invited.

EDUCATIONAL DIVISION

C. G. CAMPBELL, President
5013 S. Center St., Adrian, Mich.
Representation in Principal Cities

KIMAC VIEWER
for ... 2 x 2" Kodachromes, 35 mm. strip films, micro film, 8 and 16 mm. Movie Films, Microscope Slides, Dental X-rays, stamps.

Made of attractive black plastic with removable black wood handle. Accommodates either a 4x or 10x (A-1672) lens which can be focused. The 10x lens gives higher magnification for 8 and 16 mm. movie film, postage stamps, and microscope slides, or the central area of 2 x 2" slides and 35 mm. film strips. Built-in slot for viewing 35 mm. strip film. Accessory attachment (A-1674A) fits into the 35 mm. slot for viewing either 8 or 16 mm. movie film.

A-1671 Kimum Viewer with 4x eyepiece ......... Each $3.00
A-1672 10x Eyepiece for Kimum Viewer ............ 5.00
A-1674A 8 or 16 mm. Movie Film Adapter ........... 1.00
A-1674 X-Ray Film and Postage Stamp Adapter 1.00

CLAY-ADAMS CO. INC.
44 EAST 23rd STREET, NEW YORK 10, N. Y.
ON SALE AT YOUR BOOKSTORE NOW

The official narrative (the "Smyth Report")

ATOMIC ENERGY

FOR MILITARY PURPOSES

A GENERAL ACCOUNT OF ITS DEVELOPMENT
UNDER THE AUSPICES OF THE UNITED STATES GOVERNMENT, 1940–1945

By Henry DeWolf Smyth
Chairman, Department of Physics,
Princeton University
Consultant, Manhattan District,
U. S. Corps of Engineers

THE FULL TEXT of the official
“report to the nation” made
by Dr. Smyth at the direction of
Maj. Gen. L. R. Groves, in charge
of the Atomic Bomb project. This 280-page book contains all
of the information released to
date, and is the only official basis
for all of the newspaper and
magazine articles that have ap-
ppeared.

Starting with a quick survey of
developments in nuclear physics

from 1896 to 1940, it tells the in-
credible story of scientific research
and technical development that
went into the making of atomic
bombs.

An historic document that
makes fascinating reading for
anyone with even elementary
scientific knowledge.

About 280 pages, 8 drawings, 11 photographs.
Paper bound $1.25;
Cloth bound $2.00

PRINCETON UNIVERSITY PRESS
Princeton, New Jersey
THE CARVER LABORATORY PRESS

Standard for Research and Development

The Carver Press is designed to fill a vital need in laboratory equipment. Small (only 125 lbs.) but powerful, it provides accurately controlled pressures up to 10 tons. Carver Press accessories include electric and steam hot plates and test cylinders or molds. Additional interchangeable equipment includes bearing plates, cage and filtering equipment, etc. Send now for complete catalog giving details about Carver Press and applications. Prompt Deliveries.

FRED S. CARVER
HYDRAULIC EQUIPMENT
341 HUDSON ST. NEW YORK 14

NEW CATALOG

Reagents catalogued alphabetically—also according to subjects and techniques, plus medical reference guide. Catalog comprises full line blood testing sera including anti-Rh, anti-M and anti-N; also reagents for Wassermann, Kline, and Kahn tests. Write for your copy. FREE ON REQUEST.

GRADWOHL LABORATORIES
R. B. H. Gradwohl, M. D. Director
3514 Lucas Av.
St. Louis, Mo.

New Work Just Ready

A PRIMER OF ELECTROCARDIOGRAPHY

By GEORGE BURCH, M.D., F.A.C.P.
Associate Professor of Medicine
and TRAVIS WINSOR, M.D.
Instructor in Medicine
Tulane University School of Medicine
New Orleans, La.
Octavo, 215 pages, illustrated with 235 engravings.
Cloth, $3.50.

This new work is in every sense a primer. Its object is to enable the student who is entirely unfamiliar with the subject to acquire fundamental knowledge of electrocardiography in the most direct manner. The material is presented from a mechanistic point of view. Although every effort has been made to keep this presentation both simple and brief, it is both authoritative and fundamental.

LEA & FEBIGER
WASHINGTON SQUARE, PHILADELPHIA 6, PA.
Crystallized Bovine Plasma Albumin is the first of the purified bovine plasma proteins to be offered for investigational use. Of the various proteins it has received by far the most intensive study and has been obtained in a high degree of purity by means of crystallization. Although crystallized bovine plasma albumin has not yet been made safe for injection into human beings, it has been used successfully in animal experiments requiring a non-toxic, non-diffusible agent having a powerful osmotic effect. Other applications include its use as a test material in the comparison of analytical methods employed in protein research; as a constituent of special media in tissue culture; in immunological studies; and in special applications as an adhesive.

Crystallized Bovine Plasma Albumin having the following characteristics is now available in limited quantities.

- Sedimentation Constant: $S_{20,w}^w 4.5$
- Electrophoretic Mobility: (pH 7.7 phosphate buffer, $I/2 0.2, 0^\circ C.$) $5.2$
- Molecular Weight: 69,000
- Intrinsic Viscosity: 0.039
- Specific Rotation: $[\alpha]_20^\circ = 5461$ $\lambda = 20^\circ$ $= 78^\circ = 1^\circ$

An annotated bibliography on bovine plasma albumin and prices are available on request.

THE ARMOUR LABORATORIES
Chemical Research and Development Department
CHICAGO 9, ILLINOIS
The Von Nardroff Color Apparatus is a convenient device for the study of color phenomena. The single beam of light from an optical disk illuminator is divided into three independent beams of light, each of which can be modified in intensity or color by means of diaphragms and color screens. By moving the lens arms these modified beams of light may be overlapped either in whole or in part as desired, and by adjusting the diaphragms the intensity or strength of each color can be regulated to produce a wide variety of shades in the mixed colors. Shadow effects can be obtained by holding an opaque object in the path of the light beams.

The Von Nardroff Color Apparatus is furnished complete with six color filters and directions for use.

No. 87380 ..................... $36.00

CENTRAL SCIENTIFIC COMPANY

SCIENTIFIC INSTRUMENTS CNS CO LABORATORY APPARATUS

NEW YORK TORONTO CHICAGO BOSTON SAN FRANCISCO
MUZZLE FURNACE
With built-in Rheostat and attached Pyrometer

Recommended as an adjunct to large standard muffle furnaces or for use in laboratories where the number of ashings, fusings or ignitions does not justify the purchase of a larger furnace.

SPECIFICATIONS

Dimensions—9½” wide, 10½” deep, 13½” high.
Muffle Size—4” x 3¾” x 3¾”.
Top Temperature—1850°F. intermittent; 1500°F. continuous.
Rheostat—“Low,” “Medium,” “High,” and “Booster” Buttons. Snap switch on cord.
Door—Counterpoised, providing 4½” square platform when opened.
Pyrometer—2¼” scale, in both Centigrade and Fahrenheit.
No. 8715—For 110 volts A. C. or D. C. ......................................................... $42.50

WILL CORPORATION, ROCHESTER, NEW YORK
Offices and Warehouses
BUFFALO APPARATUS CORP., Buffalo, N. Y. • WILL CORPORATION, 596 Broadway, New York City

LABORATORY APPARATUS AND CHEMICALS
GAERTNER

RESEARCH SPECTROMETER

* with precision tangent screw *

Tangent Screw has 5° range permits direct reading to 6 seconds. Convenient Manipulation. Stable Adjustments. Excellent Optical Parts. Rigid Construction.

Other types of Spectrometers are available.

We manufacture a variety of optical instruments such as spectrosopes, spectrographs, spectrophotometers, etc., also precision measuring instruments for industrial and educational laboratories.

THE GAERTNER SCIENTIFIC CORPORATION
1204 WRIGHTWOOD AVENUE • CHICAGO 14. U.S.A.

INTERNATIONAL MICRO CENTRIFUGE

* For Micro and Semi-Micro Analysis *
- Quick starting — 1780 r.p.m. in 10 seconds. Smooth performance.
- Powerful brushless type motor for continuous operation.
- Four tube capacity 0.5, 1, 2, 3 and 5 ml. and ½” x 4” test tubes. Either horizontal or angle sedimentation.
- Mechanical brake for rapid stopping.
- Steel protective guard bowl—Sturdy base—Rubber suction feet. Attractively finished in baked brown wrinkle.

Selling Price $29.00

INTERNATIONAL EQUIPMENT COMPANY
352 Western Avenue
Boston, Mass.

Makers of Fine Centrifuges for More than Forty Years
VITAMIN TEST CASEIN

In vitamin experimentation the type of protein used may well be the most important dietary factor. When Vitamin Test Casein GBI is the protein of choice in the deficiency diet, uniform and consistent depletion of test animals occurs well within the required time interval specified by the U.S.P. or other standard test methods.

Vitamin Test Casein GBI is prepared by a special hot alcohol extraction method, which removes not only the fat soluble but the water soluble vitamins as well. It is therefore free of vitamins A and D as well as the known factors of the B complex and vitamin K.

Vitamin Test Casein GBI is supplied in: 1 lb. bottles, 5 lb., 25 lb., and 100 lb. fiber drums.

PROMPT DELIVERY

GENERAL BIOCHEMICALS, INC.
DIVISION WYETH INCORPORATED
LABORATORY PARK, CHAGRIN FALLS, OHIO
GENERAE ET SPECIES PLANTARUM ARGENTINARUM

edited by Fundación Miguel Lillo (R. A.)

H. R. DESCOLE, director

in folio 20 x 12 inches with beautiful full-colored plates

VOL. I.

CONTENTS:

Zygophyllaceae by H. R. Descole, C. A. O’Donell and A. Lourteig

Cactaceae by A. Castellanos and H. Lelong

Euphorbiaceae by A. Lourteig and C. A. O’Donell

300 pages and 149 lithographed plates (28 in full-color); original descriptions.

VOL. II.

CONTENTS

Asclepiadaceae by T. Meyer

Valerianaceae by E. O. Borsini

384 pages and 173 lithographed plates (32 in full-color); original descriptions.

VOL. III.

CONTENTS:

Eriocaulaceae, Mayacaceae, Xyridaceae, Bromeliaceae by A. Castellanos

129 lithographed plates (56 in full-color); original descriptions.

PRICE PER VOLUME: Standard edition: $ 160.— (pesos argentinos)

De Luxe edition for Bibliophiles, restricted to 100 copies, leather bound $ 350.— (pesos argentinos)

Please make checks payable to any Bank with branches in the Argentine to the order of

Fundación MIGUEL LILLO

Miguel Lillo 205

TUCUMAN, R. ARGENTINA
automatic tissue processing by any histologic technique effecting routine twenty-four hour reports on all sections

automatic fixation ... formalin, Bouin, Zenker, or any other elective method
automatic washing ... thorough cleansing by flush-action, constant change system automatic dehydration ... alcohols, dioxane, acetone or any other preferred technique, and in any sequence automatic clearing ... chloroform, benzine, xylol, cedarwood oil, aniline oil, or alternates automatic infiltration ... paraffin, celloidin, etc. automatic decalcification ... nitric, formic, picric acids, or other fluids automatic staining of slides with any staining agents.
SINCE 1941

NOTHING has been so important as the winning of the war. Now that it is won, it is fitting that we pause to pay tribute to all those Americans who have fought and worked and died to bring Peace to the world.

Like most American manufacturers, Bausch & Lomb has had a vital part in the struggle—a part which you as a peacetime user of Bausch & Lomb Instruments have shared by your willingness to wait for the instruments you have needed. For your consistent patience and splendid co-operation we are sincerely grateful.

Facing the future and the problems of reconstruction, we now dedicate our efforts, our greatly enlarged facilities, and our production skills to the manufacture of the precision optical instruments which are necessary to your efforts in building a better world. Bausch & Lomb Optical Co., Rochester 2, New York.

BAUSCH & LOMB
ESTABLISHED 1853

Makers of Optical Glass and a Complete Line of Optical Instruments for Military Use, Education, Research, Industry, and Eyesight Correction and Conservation
On the Problem of Applied Mathematics: DR. JAMES H. TAYLOR .......................... 315

Obituary:
Florence Bascom: PROFESSOR IDA H. OGINIE. Recent Deaths .................. 320

Scientific Events:
Public Lands Containing Radioactive Minerals; The Coordinating Committee of the United Nations Standards; Placement of Veterans by the National Roster of Scientific and Specialized Personnel; News from Abroad ........................................ 321

Scientific Notes and News ....................................................... 324

Special Articles:
Role of Unsaturated Fatty Acids in Changes of Adipose and Dental Tissues in Vitamin E Deficiency: DR. HENRIK DAM and DR. HUMBERTO GRANADOS. Arterial Anomalies in Dogs Employing Vein Grafts from Chickens and Turkeys: DR. ALFRED LEWIN COLEY and PAUL L. STEFKE. The Effect of Penicillin in Experimental Rabbit Syphilis: The Late Professor GEORGE W. RAIZIS. Non-toxicity of DDT on Cells in Cultures: DR. WARREN H. LEWIS and DR. A. GLENN RICHARDS, Jr. .......................................................... 327

Scientific Apparatus and Laboratory Methods:
Improvement in Keeping Quality of Succulent Plants and Cut Flowers by Treatment under Water in Partial Vacuum: DR. C. L. HAMNER, R. F. CARLSON and H. B. TUCKY. Modified Method of Extracting Cholesterol: LOUISE F. POTTER ........................................... 332

Discussion:

Scientific Books:
Culture Growth: DR. WARREN S. THOMPSON. Chemical Embryology: PROFESSOR ALBERT TYLEE. Radio: DR. S. REID WARREN, JR. Books Received 336

Science News .................................................................................. 14

SCIENCE: A Weekly Journal, since 1900 the official organ of the American Association for the Advancement of Science. Published by the American Association for the Advancement of Science every Friday at Lancaster, Pennsylvania.

Editors: JOSEPHINE OWEN CATTELL and JAQUES CATTELL.

Policy Committee: MALCOLM H. SOULE, ROGER ADAMS and WALTER R. MILLS.

Advertising Manager: THEO. J. CHRISTENSEN.

Communications relative to articles offered for publication should be addressed to Editors of Science, The Science Press, Lancaster, Pa.

Communications relative to advertising should be addressed to Theo. Christensen, Advertising Manager, Smithsonian Institution Building, Washington 25, D. C.

Communications relative to membership in the Association and to all matters of business of the Association should be addressed to the Permanent Secretary, A.A.A.S., Smithsonian Institution Building, Washington 25, D. C.

Annual subscription, $6.00 Single copies, 15 cents

ON THE PROBLEM OF APPLIED MATHEMATICS

By Dr. JAMES H. TAYLOR
THE GEORGE WASHINGTON UNIVERSITY

Almost anything is tremendously complicated. Frazier set out to write a monograph on a certain cult of ancient Greece and ended up with his famous work of twelve volumes entitled "The Golden Bough." Consider a simple hobby like stamp collecting. One is soon involved in a maze of pertinent details such as kinds of paper, methods of printing, types of perforations, colors and shades which even the Bureau of Standards might find difficult or impossible to determine, and finally watermarks, overprints, surcharges and forgeries.

In comparison with any other well-recognized body of knowledge, mathematics must be relatively simple. Consider for instance a given mathematics, that is, a branch of mathematics like Euclidean geometry or projective geometry or real variable. You perhaps know how any one of these subjects may be set up. After two thousand years of experience the "natural" way appears to be as follows. One lists a set of undefined elements and relations, and a set of unproved propositions involving them; and from these all other propositions or theorems are to be obtained by the methods of formal, deductive logic. The unproved propositions which are imposed are called axioms, postulates or assumptions. For example, in projective or in Euclidean geometry "point" and "line" are undefined elements; the relation "on" is an undefined relation. One of the axioms reads as follows: If A and B are distinct points there is at least one line on both A and B.

It is important to appreciate that a mathematics seems to be completely determined once the postu-