NEW  
VOL. 93, No. 2457   
FRIDAY, JANUARY 30, 1942   
SUBSCRIPTION, $6.00  
SINGLE COPIES, .15

For Second Semester Courses

Harrow's Textbook of Biochemistry

Second Edition!—This text gives an unusually clear presentation of the fundamentals of modern biochemistry. The author's extensive teaching experience enables him to give facts in a manner both interesting and logical and at the same time to emphasize those points of special importance. The coverage of biochemistry is decidedly complete and thoroughly meets today's teaching standards.

By Benjamin Harrow, Ph.D., Professor of Chemistry, City College, College of the City of New York. 439 pages, 6" x 9". Illustrated. $3.75

Harrow's Laboratory Manual of Biochemistry

The purpose of this laboratory manual is to provide practical experiments that will demonstrate certain phases of the subject matter in Dr. Harrow's Textbook described above. It can, of course, also be used with any standard text on the subject. Every experiment has been tested and retested.

By Benjamin Harrow, Ph.D. 119 pages, 6" x 9". Illustrated. Acid-proof covers. Wire-O binding. $1.50

Heilbrunn's General Physiology

Students rapidly grasp the significance of modern physiological thought from Dr. Heilbrunn's text. It is systematic, logical and understandable throughout. The student is led step by step through introductory phases, into a survey of the morphology of living cells, then into a discussion of the "living machine" and so on through considerations of energy relations, environmental effects, acclimatization, etc.

By L. V. Heilbrunn, Associate Professor of Zoology in the University of Pennsylvania. 603 pages, 6" x 9". Illustrated. $5.00

Sturtevant and Beadle's Introduction to Genetics

In writing this introduction to Genetics, these authors have departed from the traditional historical approach and presented the subject in a manner both logical and convenient from the standpoint of teaching. The chromosomal basis of heredity is introduced at the beginning and emphasized and illustrated throughout. Although treatment is based largely on maize and Drosophila, examples are also given of a wide variety of organisms, including man.

By A. H. Sturtevant, Professor of Genetics, California Institute of Technology; and G. W. Beadle, Professor of Genetics, Stanford University, California. 301 pages, 5 1/2" x 7 1/2". Illustrated. $3.25

Greaves' Elementary Bacteriology

Fourth Edition!—Students will find this presentation of elementary bacteriology both absorbing and interesting. The subject is developed in detail in its application to the life of man.

By Joseph E. Greaves, M.S., Ph.D., Professor of Bacteriology, Utah Agricultural College; and Ethelyn O. Greaves, M.S., Ph.D. 387 pages, 5 1/2" x 7 1/2", with 164 illustrations. $3.50

Frobisher's Fundamentals of Bacteriology

Second Edition!—Dr. Frobisher's textbook is designed for the student who desires to become familiar with the essential facts concerning bacteria. In its treatment of the subject the book is broad and unspecialized. The knowledge is applied to problems in health, disease, agriculture and industry.

By Martin Frobisher, Jr., S.B., Sc.D., F.A.A.A.S, F.A.P.H.A., Associate in Bacteriology, the Johns Hopkins University. 653 pages, 5 1/4" x 7 1/2", with 326 illustrations. $4.00

W. B. SAUNDERS COMPANY

West Washington Square Philadelphia

Science: published weekly by The Science Press, Lancaster, Pa.
Entered as second-class matter July 18, 1925, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879.
THE HARVARD BOOKS ON ASTRONOMY
Edited by HARLOW SHAPLEY and BART J. BOK

Bok and Bok
The Milky Way

Sky says: "The subject matter of The Milky Way—the structure, dimensions and composition of our galaxy—is a topic which deserves understanding and reiteration, and no one could have done a better job of it than Dr. and Mrs. Bok."

This book presents for the first time in a popular form, a summary of our present knowledge of the Milky Way and explains some of the problems which remain to be solved. The dust and gas in the vast spaces between the stars, the compositions and dimensions of star clusters, the appearance of our galaxy to an observer in the Andromeda nebula, and the problems related to the past and future of our galaxy are discussed. Two large scale photographic maps of the Milky Way, recent photographs made with Schmidt cameras, and portraits of the leading scientists in the field are included.

Contents: Presenting the Milky Way; How an Astronomer Attacks the Problem; The Sun's Nearest Neighbors; Reaching Out—The System Takes Shape; The Whirling Galaxy; Bright and Dark Nebulae; Interstellar Gas; The General Haze; Men at Work: Explorations in Space; How Old is the Milky Way?
By Bart J. and Priscilla F. Bok, Harvard College Observatory
96 Illus.; 204 Pages $2.50

Campbell and Jacchia
The Story of Variable Stars

Sky and Telescope says: "A better popular exposition of the intricacies of these pulsating stars does not exist... in the sections on red variables and the Novae, this book really gets into its stride."

This book introduces the reader to the technique of observation and then proceeds to analyse our present knowledge of variable stars. Among the types of variable stars discussed are the Explosive Star or Nova, the giant red variables, the erratic stars and eclipsing stars. The principles of spectroscopy and a few technical aspects of variable star astronomy are explained in the appendix. A list of brighter variables, a Julian eolian calendar, and other useful tables are included.

Contents: How Variables are Found; Observing the Variables; Using the Observations; Pulsating Stars; The Red Variables; Explosive Stars; Erratic Stars; Stellar Eclipses; Epilogue; Addenda; Appendix.
By Leon Campbell and Luigi Jacchia, Harvard College Observatory
82 Illus.; 226 Pages $2.50

THE BLAKISTON COMPANY, Philadelphia

Determination of Alcohol in Blood and Urine
(According to the method of H. A. Heise)
The LaMotte Research Department has developed a new, portable, self-contained outfit for the quantitative determination of Alcohol in the blood and urine. The distillation assembly, accurate color standards, standardized reagents and all equipment is mounted in the case itself and is ready to use on a moment's notice. Standard equipment includes thermostatically controlled electric hotplate for 110–120 Volt A.C. current. This new LaMotte Outfit comes complete, ready to use, with instructions. Price $50.00 F.O.B. Towson.
Write for further information:
LaMotte Chemical Products Co.
Dept. "H" Towson, Baltimore, Md.

BIODYNAMICA MONOGRAPHS ON GENERAL PHYSIOLOGY
1. "Life and Death at Low Temperatures" by R. J. Lugoj and P. M. Geheno. 341 pages. Net $4.50
2. "Optical Activity and Living Matter" by G. F. Gause. 162 pages. Net $2.75

Order from
BIODYNAMICA, NORMANDY, MISSOURI

NEW (3d) EDITION JUST READY

VEGETABLE GROWING
By JAMES EDWARD KNOTT, Ph.D.
Professor of Truck Crops, University of California; Formerly Research Professor of Vegetable Crops, Cornell University

12mo, 356 pages, illustrated with 80 engravings. Cloth, $3.25, net.

This work makes possible the selection of a type crop and relates the material of the initial chapters to it. The text has been so written that it may be easily adapted to this system of teaching. The completeness of the index makes it possible to assemble readily the material that relates to the selected topic.

LEA & FEBIGER
WASHINGTON SQUARE PHILADELPHIA, PA.

THE SCIENCE PRESS PRINTING CO.
PRACTICAL SCIENTIFIC JOURNALS, MONOGRAPHS AND BOOKS
CORRESPONDENCE INVITED
LANCASTER, PENNSYLVANIA
CHOLINE CHLORIDE

SMACO

The importance of choline in nutrition is now more widely recognized as a result of new investigations showing its relationship to liver cirrhosis\(^1\) and renal damage.\(^2\) Under specific dietary conditions a deficiency of choline results in fatty infiltration of the liver in rats\(^3\) and perosis in chicks.\(^4\) Choline is definitely involved in the metabolism of the sulphur containing amino acids.\(^5\)\(^,\)\(^6\)

It has been suggested that choline is a factor in the B-complex\(^7\) and because of this there is increasing use of choline chloride as a routine supplement in nutritional research especially where highly purified diets are employed.

Choline Chloride synthesized in our laboratories, is available conveniently packaged for research purposes and in bulk quantities.

---

Confidence Rides With The Dawn Patrol

WHEN the bombers of the Atlantic Patrol thunder into the dawn, their pilots look ahead with confidence—confidence born of faith in their machines and the fuel that drives their motors. American fuels, like American planes, are built to bring back safely those who fly.

Somewhere, in an American refinery, one of America’s great army of behind-the-scenes workers, with a Bausch & Lomb Refractometer, is doing his part in making American oils and gasolines so efficient and safely dependable. Modern refractometric methods of control speed refining operations and maintain a greater uniformity and higher quality than ever before.

Here, again, optical science—with Bausch & Lomb instruments—is at work helping to strengthen America’s front lines of defense. Today, American manufacturers—like the nation’s forces of defense—turn to precision optical methods for critical analysis, precise measurement, quality control. Bausch & Lomb’s Contour Projectors, Metallographic Equipment and microscopes for inspection and control take their place alongside range finders, gun sights and binoculars in contributing to the vital needs of national defense.

BAUSCH & LOMB
OPTICAL CO. • ROCHESTER, NEW YORK
ESTABLISHED 1853

AN AMERICAN SCIENTIFIC INSTITUTION PRODUCING OPTICAL GLASS AND INSTRUMENTS FOR NATIONAL DEFENSE, EDUCATION, RESEARCH, INDUSTRY AND EYESIGHT CORRECTION
Immunity in Virus Infections

By Thomas M. Rivers, M.D.

HOSPITAL OF THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH

For many years it has been recognized that one attack of certain diseases, now classified as virus maladies, induces an enduring immunity. Because of this fact and since many workers believed that viruses are radically different from other types of infectious agents, there arose in some quarters the idea that immunological and serological phenomena in the virus field differ from those in other fields of infection. This was an erroneous idea because the basic principles underlying serological and immunological phenomena in all fields of biology are identical. These principles, however, may evidence themselves in different manners in the various fields, and the techniques of studying the phenomena associated with them in different fields frequently vary because of the nature and mode of action of the infecting agents. It will be impossible to discuss at this time all the different phenomena and peculiarities associated with immunity in the numerous virus diseases. Therefore, a few general remarks will be made, following which immunological and serological phenomena associated with vaccinia will be discussed in detail.

Immunity is resistance to infection or injury and is demonstrable only in a living host. Such resistance