States. We have asked the European circulation managers to provide us for this purpose with extra copies of articles published in their countries. A complete series of recent numbers of the *Bulletin* of the Astronomical Instituts of the Netherlands has already been mailed to England; another set has gone to Canada.

The council of the Royal Astronomical Society has accepted the offer of our committee to send on to the circulation managers in continental Europe copies of current British publications. Eight copies of a recent issue of the *Monthly Notices* of the Royal Astronomical Society and some of the Publications of the Dominion Astrophysical Observatory have already been sent on in this way.

Directors of observatories and editors of astronomical journals are urged to send to the committee a dozen copies of every publication for distribution abroad. The committee is already receiving the generous cooperation of the editors of the *Astrophysical Journal*, the *Publications of the Astronomical Society of the Pacific*, *Popular Astronomy* and the *Telescope*. A small grant from the American Astronomical Society is paying for the current costs of mailing, but the committee will have to ask for further support if it is to continue its work beyond the summer.

B. J. BOK, *Chairman*
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SCIENTIFIC BOOKS

VITAMINS

What Are the Vitamins? By WALTER H. EDDY. iii + 247 pp., with six illustrations. New York: Reinhold Publishing Corp. 1941. $2.50.

WITH the tremendous increase in our knowledge of and interest in vitamins a large number of books on this subject are appearing. Most of these books may be grouped into two large classes: those which give a very complete and detailed picture of one vitamin, such as Williams and Spies on Vitamin B_1 and Reed, Struck and Stick on Vitamin D, and those which contain only the significant facts about all the vitamins. "What Are the Vitamins?" by Eddy falls into the latter class and, as the author states, it is the result of his personal effort to condense the subject of vitamins without sacrificing accuracy. With the exception of a few minor errors the author has accomplished the task he set for himself.

After two introductory chapters, which contain an excellent list of the known vitamins and a brief outline of the relation of vitamins to enzymes, each individual vitamin is discussed. In each case a complete description is given of the various symptoms which one may expect to find during a deficiency of the vitamin in question. Some attention is given to the daily human requirements for each of the vitamins, but the survey of the experimental evidence upon which these figures are based is not extensive. A fairly complete table of vitamin values of foods is given in the appendix.

There is some repetition in the book since chemical formulae for the same vitamin appear in several different parts of the book. Each chapter contains a fairly complete bibliography, although in a few cases papers referred to do not appear in the references. The author seems to have some difficulty in getting the structural formulae exactly correct. On page 66 a CH_2 group is omitted from the thiamin molecule and on page 119 the formula for the hydroxy acid part of pantothenic acid is somewhat deformed.

Any one interested in obtaining the latest information about vitamins in the shortest time possible will do well to consult this book.

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COMMERCIAL TIMBERS

Commercial Timbers of the United States, Their Structure, Identification, Properties, and Uses. By H. P. BROWN, professor of wood technology, New York State College of Forestry, and A. J. PANSHIN, assistant professor of forestry, Michigan State College. First edition. 554 pages, 387 figures. New York: McGraw-Hill Book Company. 1940.

THIS book, which supersedes the "Identification of the Commercial Timbers of the United States" by the same authors, is another addition to the growing list of the American Forestry Series of books which are prepared under the guidance of Professor Walter Mulford, University of California, as consulting editor. It is intended, as the authors say, for use by students in forestry and plant anatomy and also by others who wish to become thoroughly conversant with wood.

It covers the anatomy of wood beginning with the grosser features visible with the unaided eye, such as sapwood and heartwood, annual rings, pores, resin canals, grain and texture, and leading the student into the finer structure visible only with a microscope, such as the shape, size and configuration of the different types of cells found in wood, and briefly into the ultramicroscopic conceptions of the cell wall as determined by x-ray diffraction. The general discussion of wood anatomy is not limited to native species but has universal application.

In addition to the discussion on anatomy, ten pages

are devoted to color, luster, odor, taste, weight and hardness with particular reference to their aid in wood identification.

The part dealing with the identification of species is limited to those of native origin but includes a larger number of genera than other publications on the same subject. Two identification keys of the dichotomous type are provided, one for use with a hand lens and the other for use with a microscope.

As a result of the conservative nature of wood no attempt is made in many cases to carry the identification any farther than the genus or a group of species within a genus. Only in a limited number of cases can the individual species be identified by the wood alone. For example, the numerous species of deciduous oaks are classified into only two groups, the red oaks and the white oaks, and the southern pines are grouped under one head without distinction as to species. Although the wood of two closely related species may show no single reliable diagnostic feature, the possibility of distinguishing species by means of a statistical combination of several features of the wood that show slight variation in averages or extremes has not yet been thoroughly investigated and may some day open up a new field of research in wood structure.

A large part of the text is devoted to descriptions of the wood of over 80 native species covering the gross and minute structure, a brief discussion of properties and principal uses with reasons for such uses. This part, no doubt, would be of interest to engineers, architects, manual training instructors, lumbermen and woodworkers who want more than a superficial knowledge of the various species of wood.

The text is amply illustrated throughout. The key based on gross features is accompanied by illustrations of cross sections magnified 5 times of 86 species and several tangential views natural size. The key based on minute features is accompanied by 32 photomicrographs of special microscopic diagnostic features. Photomicrographs of transverse and tangential sections of 92 species magnified 75 times accompany the descriptions of the different kinds of wood.

A chapter on figure in wood classifies and describes the more common types of ornamental figure found in lumber and veneer, and a chapter on defects gives their definitions, causes, if known, and detrimental effects.

The book is strictly a scientific publication. Technical terms are freely used, as should be the case in a student's manual, but they are carefully defined. The terminology used follows principally that adopted by the International Association of Wood Anatomists several years ago. A glossary of technical terms is appended. The language of the text is in a free-flowing, simple, narrative style which makes it easy to read. Only occasionally do the authors indulge in the use of "high-brow" nontechnical words, but that should not only be excusable but even justifiable in a college textbook.

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SOIL PHYSICS

Soil Physics. By L. D. BAVER. New York: John Wiley and Sons, Inc. London: Chapman and Hall, Ltd. ix + 370 pp. $4.00.

AT long last there is available a satisfactory work on soil physics written primarily for use as a text-book for advanced undergraduates and graduate students in agricultural colleges. It is the only book on soil physics that has come to the writer's attention since Keen's "Physical Properties of the Soil" appeared some ten years ago. The new edition of Keen announced over a year ago is reported to have been delayed.

Baver's text is essentially a comprehensive review of carefully selected material from the extensive literature of soil physics research. Conclusions and the interpretation of results are stressed, with less attention being given to apparatus and methods. A liberal list of references is given at the end of each chapter. Frequent reference is made to the pioneer work in soil physics of the last century, particularly to Wollny, whose contributions to soil science should receive more attention than they now do. The book is written from the agronomic viewpoint, there being little material upon the engineering aspects of soils other than those pertaining to soil conservation. A few topics dealing with mathematical operations and thermodynamic processes are not presented with the conciseness and precision desired by some physicists perhaps, but in the manner which the author, in his nine-year experience in teaching the subject, has found to be best suited to soils students.

The subject-matter is divided into ten chapters. After an introductory chapter, largely of a historical character, the author takes up the mechanical composition of soils and the physical characteristics of soil colloids. Next is a chapter on soil consistence and then one on soil structure, the longest in the book, with many references to Russian work. Unfortunately the simple soil structure and soil consistence classifications of Nikiforoff were omitted. Chapters on soil water, soil air and soil temperature are followed by two chapters on some physical and technological aspects of tillage and soil erosion.

Teachers and students of soil physics will appreciate