tions, are well reproduced. The author is to be congratulated upon a fascinating record of scientific observation. It probably won't rank with the "Voyage of the Beagle" in importance, but it certainly evidences the same motivation of intellectual and scientific curiosity.

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TIMBER

Timbers of the New World. By SAMUEL J. RECORD and ROBERT W. HESS. xv + 640 pp., 58 plates, 75 figs., 8 maps. New Haven: Yale University Press. 1943. $10.00.

"TIMBERS of the New World" is the successor to but not a second edition of "Timbers of Tropical America," published in 1924. The new work contains more than twice the amount of material as in the old and is treated differently. In the old work a detailed macroscopic description is given for each individual wood with very little anatomy. Since the publication of "Timbers of Tropical America," Record and Hess and other investigators interested in the comparative anatomy of wood have devoted more time to detailed anatomy. However, in order to limit the descriptions of so many woods to one volume, the old plan could not be adopted for the new work because its field is extended to include species north and south of the tropics of the entire Western Hemisphere. This is the first attempt by any one to deal with all the larger woody plants of the Americas.

The new work is an encyclopedia of the best information available concerning the trees and larger shrubs native to South America, Central America, Mexico, the West Indies, U. S. A. and Canada. There are descriptions of the trees and woods of more than 1,100 genera and 155 natural families. For convenience of the reader the arrangement is alphabetical by families and genera. Under each family is listed the number of genera and species, their geographic location and a general description of flowers, leaves and fruit. The genera of greatest economic importance are emphasized. There follows a general macroscopic description of the woods. In fine print is given a detailed anatomical description of the family by genera followed by a reference such as that given for the Anacardiaceae: "For anatomy of the different genera see Tropical Woods 60: 16–45." Following the anatomical description of the woods of the family the various genera are listed alphabetically. Under each genus are given the important economic species with descriptions of the tree, flowers, fruits and leaves, and a macroscopic generic description of the woods. The important economic products such as drugs, oils, resins, fruits, etc., together with the uses of the woods are listed for each species. At the end of each generic account is given an alphabetical list of trade and common names for the woods by countries.

The latest accepted terminology is used doing away with much confusion which existed concerning the nomenclature of certain genera, such as: *Tecoma* and *Tabebuia* in the Bignoniaceae; certain species of *Cordia* in the Boraginaceae; *Amburana* and *Torresia, Cajoba* and *Pithecolobium, Libidibia* and *Caesalpinia, Vatairea, Andira* and *Tipuana* of the Leguminosae. Other examples could be mentioned. Furthermore, the botanical identities of timbers which have been known to commerce for a long time, such as Cocobolo, the Rosewoods, Brazil wood, Kingwood, etc., have been cleared up.

In recent years certain investigators have attempted to correlate anatomical characters of the stem with gross morphological characters in a natural system of classification. Toward this end the results obtained from anatomical studies, approached from the point of view of phylogeny, have given striking results. The authors state in the preface:

> Taxonomic botanists base their concepts of families, genera, and species on morphological characters of the reproductive and vegetative parts of a plant, and are not always in agreement as to the constitution of particular groups. . . . The present authors have considered these taxonomic problems from the standpoint of wood anatomy, and when confronted with alternative proposals by different botanists, have made their choice on the basis of anatomical characteristics.

As an example, the species of *Picrodendron* have been variously referred to the Juglandaceae, Anacardiaceae, Sapindaceae and Simarubaceae, are similar in wood structure, and do not indicate close affinity to any of the four families to which the genus has been referred. The genus, therefore, has been placed in the family Picrodendraceae established by Small in 1917. Several other examples concerning inconsistencies in current classification are called to the attention of specialists in those groups.

Toward the end of the book is an explanation of the terms used in the wood descriptions. The terms are illustrated with 75 excellent photomicrographs prepared especially to show variety of anatomical details. Also at the end of the book are lists of families classified with reference to special properties and uses of their bark, leaves and timber. The special lists are designed for convenience in locating trees and woods having special properties and uses or suitable for the same purposes as better-known kinds. The wood descriptions are based upon specimens in the collections of the Yale School of Forestry. The total number of samples available for comparative study is about 40,600, of which 22,000 are American. At the end is a complete bibliography of the principal publications arranged by countries.

The book is indispensable as a general reference for taxonomists, teachers and students of economic botany and wood technology, and others who are interested in the economic products of the forest, including wood utilization.

DAVID A. KRIBS

SOCIETIES AND MEETINGS

THE ANNUAL MEETING OF THE ROYAL SOCIETY OF CANADA

THE annual meeting of the Royal Society of Canada was held at McMaster University, from May 25 to 27. The scientific sections of the society held their meetings in the Science Building of the university and the general meetings took place in Convocation Hall. The president of the society, Professor J. B. Collip, F.R.S., presented the medals at the evening meeting on May 25. The Flavelle medal was awarded to Professor B. P. Babkin for his outstanding work in analyzing the secretory mechanism of the digestive glands. Professor John L. Synge received the first award of the Henry Marshall Tory medal for outstanding contributions to applied mathematics, and the Willet G. Miller medal, also awarded for the first time, was presented to Professor Norman Levi Bowen in recognition of his contributions to geology. Following the presentation of the medals, Dr. Collip read his presidential address on "Science and War." After briefly reviewing the part played by science in former conflicts, Dr. Collip emphasized the important contributions of physicists, chemists and other scientists in the present war. He dealt in some detail with aviation medicine and the cooperation between the men of science and the armed forces in solving many of the problems which modern warfare presented. He referred to the recognition and support that scientists were now receiving as an integral part of the war effort and pointed out that much of this research work is producing results that will be equally important in the post-war period.

A further feature of the meeting was the symposium, held after the dinner on May 26, on "Medical Investigations as Applicable to the Armed Forces," at which Surgeon Captain A. McCallum, Medical Director General of the Royal Canadian Navy, spoke in general terms of the organization for research in this service and of the work already accomplished. Surgeon Commander C. H. Best, F.R.S., director of the Royal Canadian Naval Medical Research Unit, gave a more detailed account of some of the results achieved in connection with nutrition, night-vision and similar problems. Brigadier J. C. Meakins outlined briefly the medical research going on in the army and Group Captain J. W. Tice, director of Medical Services (Air), spoke of some problems of interest to the Air Force in particular. This was followed by Squadron Leader K. A. Evelyn, who discussed in further detail many of the special problems in aviation medicine, at the conclusion of which he showed a moving picture film entitled "Oxygen." This film was shown as a special feature, permission for which had been specially granted. The film was prepared under the auspices of the Associate Committee on Medical Research of the National Research Council for use in training enlisted aircrew in the essentials of physiology and the effects of high altitude flying, pointing out the importance of the special precautions required.

Professor J. K. Robertson delivered the presidential address in Section III (Chemical, Mathematical and Physical Sciences) on "The Role of Physical Optics in Research," in which the speaker reviewed the discoveries into the nature of light, atomic and molecular structure and in astronomy that have resulted from the application of physical optics in spectroscopy, interferometry and diffraction. This historical account was followed by an address on "Chemical Reactions of Excited Atoms," by Dr. E. W. R. Steacie, and a paper on "Molecular Spectra and their Applications," by Dr. Andrew McKellar, who spoke particularly of applications in astronomy. Thirty-eight papers were presented to the section, the majority of which were read by title. Owing to the pressure of war work few physicists and chemists were in attendance, but mathematics and astronomy were well represented. Among those papers which were read, mention may be made of a few of some general interest. Professor Lachland Gilchrist and J. W. Britton gave an account of further experiments on the use of drill holes in electrical methods as an aid to the location of mineralized bodies and rock structure. Dr. J. A. Pearce announced the orbital elements of H.D. 222107 lambda Andromedae as revised on the basis of recent measurements and also the orbital elements of the spectrographic Binary H.D. 34333. A paper of particular interest was given by Dr. L. M. Pidgeon on the production of light metals, in which he reviewed the methods for the separation of magnesium and the difficulties which had to be overcome. He gave an account of his own experiments which resulted in the present method used in obtaining large quantities of magnesium metal in Canada since the outbreak of hostilities. Dr. H. F. Manske and L. Marion reported the isolation of eight alkaloids from *Lycopodium annotium* L. Several papers were presented by Dr. Paul E. Gagnon and