Book Reviews

Chemistry of Wood. Erik Hägglund. New York: Academic Press, 1951. 631 pp. $13.50.

The author, a staff member of the Swedish Forest Products Research Laboratory, is well known for his research and writing in the field. This book is an English translation of a new and revised edition of *Holzchemie,* which first appeared in 1928 with a second German edition appearing in 1939.

The first two chapters outline the general physical properties and structure of wood and include a brief account of the growth, function, and morphology of the wood elements. The microphysical and chemical structure of the cell wall is discussed in a later section.

Chapter III, which constitutes about one third of the book, is concerned primarily with the chemical structure and reactions of cellulose and lignin and includes a short discussion of wood polyoses, polyuronic acids, and minor constituents such as resins, terpenes, tannins, phenolic heartwood extractives, and organic coloring matter.

The discussion of lignin is in greater detail than any of the other phases of wood chemistry, and in studying this section the reader might be left with a feeling of confusion. This is, however, not a reflection on the author but rather the result of an inherent confusion in the literature of this enigmatic material. The author has given a well-organized summary of present knowledge.

The remainder of the book is concerned with the chemical utilization of wood and includes discussions of wood saccharification, chemical pulping, pulp bleaching, pyrolysis, and alkaline degradation. Of these, pulping is given most attention, and the sulfite process, including the utilization of the spent sulfite cooking liquor, is discussed in detail. The soda process is only briefly mentioned, but the sulfate process is described at some length, particularly with respect to the role of sulfur in the delignification, and the nature of thiolignin.

The book concludes with a short section devoted to the natural decomposition of wood as related to fungal attack and the somewhat controversial interpretations, in the literature, of the biological and chemical changes that occur.

This monograph should not be considered a complete treatise on the complex subject of wood chemistry. Within the limits of a single volume, however, the author has done a commendable job of assembling and evaluating the literature. The discussions of several of the many subjects such as the swelling of wood and the significance and interpretation of analytical data are brief to the point of minimizing their importance. However, Hägglund has shown his awareness of this shortcoming through appended suggestions for further reading. In a few spots the writing takes somewhat the form of annotated bibliography, but for the most part the author has endeavored to interpret and consolidate the literature in the light of his own experience and research, and the book has gained in readability thereby. The subject matter is well indexed and profusely punctuated with references to the literature, particularly of recent European publications.

RALPH L. HOSSFELD

School of Forestry, University of Minnesota, St. Paul

Ruwenzori Expedition 1934–5: Muscidae, Vol. II, No. 6. F. I. van Emden. London: British Museum (Natural History), 1951. Pp. 325–710, 10 plates. £2 5s.

This is the concluding part of the classification of the Muscidae, the two preceding parts having appeared as contributions in Nos. 3 and 4 of the present volume published in 1939 and 1940. Keys to the species of all the genera revised for the first time are presented, but in the case of several genera, particularly *Phaonia* and *Dichaetomyia,* the keys are to be found in a preliminary report in Series 11, Vols. 9 and 10 of the *Annals* and *Magazine of Natural History,* published in 1942 and 1943.

With the publication of this series of papers Dr. van Emden has rendered a great service to students of the Muscidae of the Ethiopian region. His keys include all the described species he was able to place, and there are few omissions. As a result, it is now possible to bring together a complete review of the African fauna in only five publications instead of the scores that were previously required. A very important feature of the work was the examination of a goodly proportion of the types of previously described species, so that those that could not be recognized with certainty can now be properly placed. It naturally follows that some of the more recently described species fall into synonymy.

Of the 172 species and subspecies collected by the expedition and recorded in Part C, 94 are described as new. Add to these the 69 described in the preceding parts and we have a total of 163 new forms from a total of 302 species. An additional 48 new forms are described from other sources. The 106 text figures of distinctive characteristics are excellent and provide great assistance in identifying the species. The plates (with the exception of Plate X, on which the wings of 12 species are shown) show typical collecting localities for various species.

Dr. van Emden is to be highly congratulated for producing a volume that will prove of such great value to systematic and economic entomologists in Africa.

C. H. CURRAN

Department of Insects and Spiders
American Museum of Natural History