

Osten-Sacken's division of the family into Longipalpi and Brevipalpi is followed and four subfamilies are recognised, namely, Tipulinae, Cylindrotominae, Lomnobiinae and Trichocerinae. For the venation Tillyard's modification of the Comstock-Needham system is adopted.

The method of treatment of the family is by means of keys, which take the reader step by step from the subfamilies to the tribes and thence to genera and species. In the case of the larger genera the species are sorted out into groups in order to facilitate identification. The specific characters are further enumerated in a little more detail in the lists which follow the keys, and notes are given as to distribution and so on. The numerous text-figures are almost entirely devoted to the genitalia and venation, excepting two pages of illustrations which depict the larval and pupal characters of the Limnobiinae. The work will prove useful to English dipterists, as very little has been published on the British forms for nearly forty years, excepting Edward's revisional notes (1921). A. D. I.

*The Botany of Crop Plants: a Text and Reference Book.*

By Prof. Wilfred W. Robbins. Second edition. Pp. xxi+674. (Philadelphia: P. Blakiston's Son and Co., 1924.) 3.50 dollars.

THE usefulness of this volume is indicated by the fact that a second edition has been called for in the comparatively short period of seven years. Opening with an outline morphological sketch, the author proceeds to give an account of the various crops grown in the United States, gathering together information that is otherwise very scattered. The crops are dealt with under the headings of their respective natural orders, the more important, chiefly cereals, being described in some detail. Bibliographies are appended to each crop or group of crops, but do not pretend to be complete. The classification of the varieties or types of crop is simplified by the free use of keys, many of which are original. A feature of the book is the "direct" method of labelling the very clear illustrations, thus rendering them more easy of reference for the student. A glossary of botanical terms and a good index round off a book that should prove of considerable value to agriculturists as well as to botanists.

*Pecan-Growing.* By H. P. Stuckey and Prof. Edwin Jackson Kyle. (The Rural Science Series.) Pp. xiii+233+12 plates. (New York: The Macmillan Co., 1925.) 12s. 6d. net.

THE growing importance of the pecan-nut in American commerce has justified the production of this book dealing with the crop in all its aspects. The pecan, *Hicoria pecan*, is closely allied to the walnut, and now ranks second to the latter in the nut production of the United States. Propagation is not easy, and special attention is devoted to descriptions of the various methods of budding or grafting that it is necessary to employ. An interesting feature is the account of the National Pecan Growers' Exchange, an organisation for marketing the nuts by means of a grower's co-operative non-profit association without capital stock. Such a body tends to raise the standard of the crop owing to its system of careful grading and differential prices. Lax supervision in the earlier years of cultiva-

tion favoured the introduction and spread of many insect and fungus pests, which now need to be combated to prevent serious reduction of the nut crops. The volume concludes with a discussion of the food values and descriptive accounts of the many varieties of the pecan.

*Distillation Principles.* By C. Elliott. (Chemical Engineering Library: Second Series.) Pp. 166. (London: Ernest Benn, Ltd., 1925.) 6s. net.

MR. ELLIOTT'S book contains, on the whole, a clear and readable account of a subject which most students find difficult. In a few places the text is not so perspicuous as it might have been, but the general treatment is sound. Particular stress is laid on the work of Rosanoff, which the author says he has found helpful, and the methods adopted certainly appear practical and useful. A fair amount of mathematics is essential, but the full discussion of numerical results gives the treatment a sense of reality which is most gratifying. It may be noted (p. 24) that the molecular weight of hydrogen is not 2, and that 2 grams of hydrogen do not occupy 22.412 litres. Biot's vapour pressure formula (p. 21) is the only one given, whilst Kirchhoff's is perhaps more useful; Avogadro's law does not state (p. 34) that "the volumes of gases are proportional to their molecular weights." Useful tables are given in an appendix. The book can be recommended as a concise and accurate account of a difficult subject.

*An Introduction to the Literature of Chemistry: for Senior Students and Research Chemists.* By Dr. F. A. Mason. Pp. 41. (Oxford: Clarendon Press; London: Oxford University Press, 1925.) 2s. net.

THE idea of assisting the research student by explaining how to make use of the literature is a good one, and a satisfactory book on these lines would be most useful. Unfortunately, Dr. Mason has not made the most of his opportunity. He has omitted to mention many of the best works of reference, and his critical remarks are not always such as would meet with general agreement. The section on physical chemistry is particularly unsatisfactory, and no guidance as to consulting the literature is given in this part. In future editions, the author would do well to seek advice from specialists, and to find out what books are, in fact, most consulted in the large libraries. His lists read as though based on a rather arbitrarily selected private library.

*Acid-Resisting Metals.* By Sydney J. Tungay. (Chemical Engineering Library: Second Series.) Pp. 136. (London: Ernest Benn, Ltd., 1925.) 6s. net.

MR. TUNGAY deals with various types of acid-resisting metals, such as silicon-irons, lead and regulus metal, aluminium, stainless steels, monel metal, cast iron and steels, nickel and chromium alloys, copper and copper alloys, in an interesting way, and has succeeded in giving a large amount of useful information in small compass. The use of acid-resisting metals has changed many aspects of chemical engineering practice and holds out prospects of further applications. The information in the book, when it is not directly based on the author's own experience, is carefully compiled from good authorities, and the result is that one can rely on the correctness of the statements. The book can be warmly recommended.