Hymenoptera and other groups. In carrying out this task he has brought together the work of many investigators over a diverse field. Much of the original information is based on researches the results of which have appeared in bulletins and other publications seldom found in libraries in Europe. It is therefore gratifying to find much of this work thus brought together in a convenient compass and shown in its true perspective, accompanied by the original high-class illustrations. At the end of the book there is a very complete bibliography and an adequate index. A. D. IMMS.

Short Reviews

Handbuch der Klimatologie. Herausgegeben von W. Köppen und R. Geiger. In 5 Bänden. Band I, Teil A: *Mathematische Klimalehre und astronomische Theorie der Klimaschwankungen.* Von Prof. M. Milankovitch. Pp. iv + A176. 27 gold marks. Band 1, Teil D: *Mikroklima und Pflanzenklima.* Von Dr. Rudolf Geiger. Pp. iii + D46. 9 gold marks. Band 1, Teil E: *Einfluss des Klimas auf den Menschen.* i. *Medizinische Klimatologie,* von Dr. W. Borchardt; ii. *Klima und Kultur,* von Prof. Dr. K. Wegener und Prof. Dr. W. Köppen. Pp. iii + E80. 11·70 gold marks. Band 1, Teil F: *Klimatologie der freien Atmosphäre.* Von Prof. Dr. A. Wagner. Pp. iii + F70. 12·60 gold marks. Band 4, Teil R: *Klimakunde von Hinterindien und Insulinde.* Von Dr. C. Braak. Pp. iv + 125. 31·20 gold marks. (Berlin: Gebrüder Borntraeger, 1930–1931.)

SINCE the last (third) edition of Hann's "Climatology" appeared in 1908–11, the observed data have enormously increased for nearly all parts of the earth. The need for a critical comparative compilation of this mass of facts is evident, and Profs. Köppen and Geiger have therefore planned a large handbook of climatology, dealing with the whole subject, including many more meteorological elements than were tabulated by Hann. The complete work will be more than twice as large as Hann's last edition. Naturally it is to be a co-operative work, and although the main language used in it is German, several British and American authors, dealing with parts of the British Empire and North America, will write in English. It is hoped that the whole handbook will be published in 1934. It will occupy five volumes, each comprising several parts appearing separately; the quoted prices for these parts are for separate sales, there being a reduction of one-third if the whole handbook is ordered; even so, the prices seem high, particularly for the part last issued (vol. 4, part R, costing more than 20 gold marks, reduced price, for less than 130 pages, in paper covers). At present, four parts of volume 1, and one of volumes 2, 4, are issued.

An unfortunate feature of this piecemeal production is that most of the parts, which in some cases are of considerable length, have no alphabetical authors' or subject index; these are apparently reserved for the completion of the whole handbook, since the concluding part (F) of volume 1 (of which two parts are still missing) has no index. The first volume deals with general climatological questions, and the remaining four with regional climatology. Part A of volume 1 is largely devoted to a lengthy exposition by Prof. Milankovitch of the radiative equilibrium of the atmosphere, and of his astronomical theory of the ice ages (a much-disputed topic), and contains no mention of Simpson's important work on these subjects. S. C.

Some East African Coniferæ and Leguminosæ. By Dr. L. Chalk, Dr. J. Burtt Davy and H. E. Desch. (Forest Trees and Timbers of the British Empire, 1.) Pp. 68 + 10 plates. (Oxford: Clarendon Press; London: Oxford University Press, 1932.) 5*s.* net.

THIS is the first of a series dealing with the forest trees and timbers of the British Empire, edited by Dr. L. Chalk and Dr. J. Burtt Davy, of the Imperial Forestry Institute, Oxford. The series will supply a want which has long been felt, a lack of correlation between our knowledge of the systematy of the tree and the anatomical structure of the wood, in the forestry of various parts of the British Empire. In his preface to this brochure, Prof. R. S. Troup, director of the Institute, remarks that no one has yet perfected an ideal form of description of wood anatomy. The subject is complicated by differences obtaining in different parts of the section, and by the considerable range in the dimensions of individual elements even at the same point in a tree; but with the development of a uniform system it should be possible approximately to determine a species from adequate material of the timber.

The present publication deals with some important east tropical African timber trees, *Juniperus procera* and *Podocarpus gracilior* and *milanjianus,* which form the cedar forests especially on Mt. Kenya, and *Widdringtonia Whytei,* the Milanje cypress, which with *Podocarpus milanjianus* characterises the forests of Mt. Milanje in Nyasaland. Descriptions are also given of ten species belonging to the family Leguminosæ of greater or less importance commercially. Good botanical descriptions of the species are included, with notes on distribution, climatic conditions, etc., but the most valuable feature is the detailed description of wood structure. The illustrations showing habit of the tree, anatomical structure, leaf and floral characters, are a helpful feature, and the introduction of keys to the African species of the various genera will be welcomed by the working botanist or forester. Incidentally, we commend the decision of the authors to regard the East African *Widdringtonia* as generically distinct from the Australian *Callitris* and the North African *Tetraclinis.*

The success of the task undertaken by the editors —the systematic description of the trees and woods of the Empire—will depend largely on a supply of reliable material and on the collaboration of workers with local experience in various parts of the Empire. A. B. R.