BOTANICAL MONOGRAPHS.

Das Pflanzenreich. Regni vegetabilis conspectus. Edited by A. Engler.

41. Heft. (iv. 56*a*) Garryaceæ; (iv. 220*a*) Nyssaceæ; (iv. 220*b*) Alangiaceæ; (iv. 229) Cornaceæ. By W. Wangerin. Pp. 18+20+25+110. Price 9.20 marks.

42. Heft. (iv. 147) Euphorbiaceæ-Jatropheæ. By F. Pax. Pp. 148. Price 7.40 marks.

43. Heft. (iv. 228) Umbelliferæ–Apioideæ–Bupleurum, Trinia et reliquæ Ammineæ heteroclitæ. By H. Wolff. Pp. 214. Price 10.80 marks.

46. Heft. (iv. 94) Menispermaceæ. By L. Diels. Pp. 345. Price 17.40 marks.

(Leipzig: Wilhelm Engelmann, 1910.)

THE four volumes of which the titles appear above are sufficiently diverse to indicate various general features of this elaborate series. In the first place, sufficient material for the first volume on the Euphorbiaceæ is supplied by the account of the tribe Jatropheæ, while Mr. H. Wolff includes no more than a portion of the subtribe Ammineæ in the first volume dealing with the Umbelliferæ. The termination Jatropheæ follows the official rules that tribe names shall end in -eæ, and the suffix, -ineæ, indicates that Ammineæ is a subtribe. The Menispermaceæ are amenable to treatment in a single volume, while the inclusion of four families under one cover is due to the circumstance that certain genera, formerly included in Cornaceæ—notably by Dr. Harms in the "Pflanzenfamilien"—are now severed from that family and placed in three distinct families. Of these, Garryaceæ and Alangiaceæ are both monogeneric, while Nyssaceæ comprises Nyssa, Camptotheca, and Davidia. Garrya has always been a puzzle, and even now Dr. Wangerin expresses himself somewhat dubiously as to the proposed location in the Amentales near Salicaceæ. Alangiaceæ and Nyssaceæ are referred to a relationship with the Combretaceæ in the order Myrtifloræ, the only doubtful point being the exact position of the monotypic genus Davidia. With regard to the Cornaceæ, the author has no hesitation in placing them at the very bottom of the Umbellifloræ, immediately anterior to the Caprifoliaceæ. Dr. Wangerin pays special attention to the various forms of inflorescence in the Cornaceæ, and submits an analytical key to the genera founded upon anatomical characters. The family consists of ten genera, of which Cornus is the largest with fifty species.

The tribe Jatropheæ comprises thirteen genera, including the well-known Hevea and two small new genera; Jatropha far outnumbers the other genera with 156 species, as Hevea approaches next with 17 species. Prof. F. Pax has worked out a phylogenetic arrangement of genera and species based upon a detailed study of the geographical distribution. Seven genera are wholly American, five are palæotropic, and Jatropha is tropically cosmopolitan. The chief centre of development is situated in Brazil, but other centres occur in Central America and East Africa, chiefly owing to the species of Jatropha found in those regions. Diagrams are provided to illustrate natural affinities of the genera and of different sections and subsections of the genus Jatropha.

The elucidation of the genus Bupleurum, which now extends to 100 species, is the chief feature of the Ammineæ-heteroclitæ. It is interesting to note that in a family showing such diverse fruit characters the most satisfactory characters for splitting up the genus are furnished by the leaves. The criticism of unnecessary diffuseness must be urged against the author; the extreme instance is supplied by the description of subspecies and varieties under *Bupleurum falcatum*, extending over thirteen pages.

As might be expected from a botanist of such wide experience, Prof. L. Diels has produced one of the most interesting monographs. The various sections in the general introduction of the Menispermaceæ are carefully elaborated. The family contains a very large number of lianes, not one of which climbs by means of tendrils; twining is the usual device; the extent of anomalous stem development is still a matter for investigation. The value of Miers's contributions to the classification of the family is generously emphasised, although the author finds it necessary to make a number of alterations in the constitution of the tribes. Much useful information is supplied in the notes inserted after the diagnoses of the genera. One new genus is proposed, and several new species are indicated which are scattered generally through the genera.

OUR BOOK SHELF.

The Animals and Man: an Elementary Text-book of Zoology and Human Physiology. By Prof. V. L. Kellogg. Pp. x+495. (New York: Henry Holt and Co., 1911.)

ALTHOUGH written from an American point of view, with American animals as the chief types, this well-illustrated volume may be confidently recommended to the English student on account of its lucid style, orderly arrangement, and the method of treatment of the various sections of its subjects. Based on two still more elementary text-books of zoology by Prof. Kellogg, the volume includes chapters on human structure and physiology by Miss McCracken, a fellow professor of the author at Stanford University; this lady's contribution forming eight chapters in the fourth part. The other chapters on physiology are by Prof. Kellogg.

The first six chapters are devoted to the constituent parts of animals and their respective functions; the subject being introduced by contrasting the organisation of a grasshopper—or rather a locust—with that of a snail; while in subsequent chapters a so-called sunfish (in reality a member of the perch group), a sparrow, a toad, a crayfish, and an amœba are made to serve as types of their respective classes. With part ii., containing three chapters, we have summaries of the life-histories of certain kinds of animals; mosquitoes and caterpillars, with their transformations, serving to illustrate insects, while frogs and birds are taken as examples of two vertebrate groups broadly distinguished by the great divergence in their development.

Systematic zoology and the classification and habits of animals form the subject of part iii., with eleven chapters; the author commencing his survey with the protozoa and concluding with mammals. The account of the former group is well up to date, and particular attention may be directed to the excellent description