THURSDAY, SEPTEMBER 17, 1914.

THE CRETACEOUS FLORA.

Catalogue of the Mesozoic Plants in the British Museum (Natural History). The Cretaceous Flora. Part i., Bibliography, Algæ and Fungi. By Dr. Marie C. Stopes. Pp. xxiii+285+ii plates. (London: British Museum (Natural History): Longmans, Green and Co., 1913.) Price 12s.

DR. MARIE STOPES set herself a severe task in deciding to include in the catalogue of Cretaceous plants an exhaustive bibliography and list of species. The list of species from Cretaceous beds, described up to December 31, 1910, occupying nearly two hundred pages, affords a striking illustration of the large amount of material in palæobotanical literature that serves no useful purpose. While acknowledging that a list of this kind is valuable as a source of information, it is difficult to repress a certain suspicion that the result obtained is scarcely a fair return for the labour expended. As Dr. Stopes continues her investigations the value of the list will be considerably increased by the addition of critical remarks on such of the records as come under her purview. As it stands the catalogue of names may mislead the unwary who have not learnt by experience to regard with distrust a large proportion of determinations based on fragments of fossil Angiosperms; but as a storehouse of bibliographical information the list will be of real service to students. In the Introduction Dr. Stopes gives a useful summary of literature dealing with Cretaceous floras, and the stratigraphical table is a particularly welcome contribution which will do much to clear up the confusion caused by the adoption of different terms for subdivisions of the Cretaceous system in different countries. The publication of a list of dates of the parts of Brongniart's "Histoire des végétaux fossiles" is a much needed step towards a greater uniformity in systematic work: in the preparation of this bibliographical note the author expresses her indebtedness to Mr. C. Davies Sherborn.

The latter part of the catalogue is concerned with descriptions of Cretaceous thallophyta, in many instances accompanied by helpful illustrations. The author restricts the use of the generic name Algites, proposed in 1894 in a comprehensive sense for fossils which cannot be referred with any degree of certainty to a particular recent genus or family, to flattened impressions, and employs Sternberg's designation Chondrites for "algæ, or fossils which suggest algæ, with a

much-branched dichotomous or sympodial thallus which is cylindrical." Having regard to the worthlessness, from the point of view of relationship to Chondrus, of most of the fossils referred to Chondrites, it would seem preferable to discard the name in favour of a general designation such as Algites if used in the wider sense in which it was first proposed. The concise summary of the characters of several types of algæ belonging to the Siphonaceæ and the Rhodophyceæ will serve to direct attention to the possibilities of a neglected branch of palæobotanical research. Among the fungi included in the catalogue the two most interesting are the Japanese species, *Pleosporites shirainus* and *Petrosphaeria japonica*, the former being represented both by perithecia and septate vegetative hyphæ.

Dr. Stopes carries into practice her suggestion (*Annals of Botany*, 1911) that "all fossil plants for which there is no good, scientific reason for association with given families and genera, and to which, nevertheless, names indicative of such affinities have been given, should be printed henceforth in Gothic characters." If this plan were adopted in the list of Cretaceous species in the first part of the volume as well as in the descriptive portion, very serious demands would be made on the printer's Gothic fount. It is doubtful whether this method will find favour: the use by palæobotanical writers of designations implying affinities that are assumed on wholly insufficient grounds seriously detracts from the value of published lists; but, it may be urged, the better course would be to discard the misleading names rather than to dignify them by the employment of Gothic letters. Moreover, this attempt to institute an *Index Expurgatorius* is based on an individual opinion and has not the sanction of supreme authority.

Dr Stopes has made an excellent beginning: the less interesting and more laborious work has been accomplished, and we confidently expect that the later volumes will add greatly to our knowledge of the vegetation of a period which is of exceptional importance. The flora of the preceding Wealden period is, in its general facies, a continuation of the Jurassic floras: flowering plants had undoubtedly been evolved, but they occupied a subordinate position and, so far as we know, were unrepresented in the Wealden flora of Britain. It was in the succeeding stages of the Cretaceous system that this remarkably successful group rapidly rose to the position of dominance that it now occupies in the floras of the world.

A. C. SEWARD.

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