fresh-water formations, comprising the hygrophile forest, with its two types, the black gum swamp and the juniper swamp, and the fresh-water marsh formation, with the reed marsh and the low-marsh types. The phytogeographical affinities of the flora are discussed at some length, touching upon the position of the species in the various vegetation zones. The northern limit of Dismal Swamp species is tabulated in an exhaustive manner. The broader relationship of the flora receives some attention also, a number of interesting comparisons being made. The agricultural products of the region are touched upon briefly, special consideration being given to the influence of drainage and soil composition upon the native and cultural vegetation.

Anatomical notes upon the leaf structure of a number of the most interesting species ecologically constitute a very important feature of the work. The notes treat chiefly of the adapted structures of the leaf, embracing a brief description of the leaf, the epidermis, mesophyll, mestome and stereome. Much is to be said in commendation of thorough histological work of this sort, a field of investigation which must come to play an increasingly important part in all comprehensive ecological work. The text closes with a list of the plants of the region, a bibliography of the books and papers consulted, and a full index.

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Monographie der Termiten Afrikas. By Yngve Sjöstedt. Köngl. Svenska Vetenskaps-Akademiens Handlingar, Vol. xxxiv., No. 4, 1900 (received late in 1901). Pp. 236. Plates IX.

Africa, the classic land of Termites, has, in recent years had its termitid fauna quite thoroughly explored. New species have been coming thick and fast from the pens of Sjöstedt, Wasmann, and Haviland; and now the work is capped by an excellent monograph from the hands of the Swedish student.

The author has had at his disposal practically all of the available material, and with great care has produced a work that will always be the basis for the future study of African white ants. Descriptions are given of 82 species, arranged in six genera; and tables are given for the determination of the species. One of the notable features of the work is the attention paid to biology. The habits of each species, when known, are detailed at considerable length, and four of the plates represent nests or parts of them. We are accustomed to think of Termite nests as being pyramidal in shape, but this applies only to certain species of *Termes;* the nests of *Eutermes aurivilli* and *E. fungifaber,* which are illustrated, are larger at the top than at the base, and have the appearance of some gigantic mushroom. The tree-nests of *E. arborum* and *E. arboricola* are also figured, the former attached to the twigs, the latter to the trunk of a tree. Accounts are given of how the natives collect certain species for eating, and of how other species collect grass and leaves, and conduct their mushroom gardens. Two bibliographies are appended: One, a list of papers on African termites; the other, a list of termitid literature published since Hagen's 'Monograph of the Termites' in 1855.

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SCIENTIFIC JOURNALS AND ARTICLES.

THE January number of the *Botanical Gazette* (the first of Volume XXXIII.) opens with an article on 'Binucleate Cells in Certain Hymenomycetes,' by R. A. Harper, of the University of Wisconsin. Dr. Harper confirms and extends the results of Maire, finding the young cells of numerous Hymenomycetes to be binucleate. On the basis of these and other observations he then discusses the relationship of the Basidiomycetes with the Ascomycetes, controverting the conclusions of Massee, and holding that "the widespread occurrence of regularly binucleated cells in the Basidiomycetes, with the additional evidence that these cells reproduce by conjugate division and constitute the reproductive series in each individual through at least a considerable part of its life-history, leading up to the formation of basidia, while no such binucleated cells are found in Ascomycetes, in either vegetative or ascogenous hyphæ, shows that the two groups are widely separated phylogenetically. * * *