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NOTICES SIGNALÉTIQUES

BIOGÉOGRAPHIE

HOPKINS, Brian. **Forest and Savanna.** London, Heinemann, 1965, 100 pages.

One of the inherent difficulties of introducing university students to problems of tropical ecology and biogeography is the general lack of relevant text books. Brian Hopkins' short book on *Forest and Savanna*, directed at first-year university students, is one attempt to alleviate this situation.

The book briefly describes the major physiognomic types of forest and savanna which occur in West Africa, and evaluates the physical and human factors which have affected their evolution and distribution. In pointing out early the fact that untouched, primary forest is rare in West Africa, the author quickly establishes the main theme of the book, which is that man, with his agricultural and grazing techniques, and the use of fire, has left his mark on all the major vegetation associations of West Africa, as they are now constituted. But he does not neglect the climatic, edaphic and topographic factors, which give rise to variations within vegetation associations in certain areas.

After a brief introduction, Dr. Hopkins arranges his material under four main chapter headings. *The West African Environment* is discussed in terms of its human and physical components. The major sub-types of vegetation are presented under the general chapter headings of *The Forest* and *The Savanna*, and are analysed according to their structure and physiognomy, floristic composition, species morphology, related climates, and the effects of man's activities. Finally, a chapter entitled *The Relationship between Forest and Savanna* is concerned with the nature of the forest/savanna boundary, and its successional development. Two short appendices describe several field methods of vegetation analysis which are particularly useful in West Africa, and certain related projects which students could develop in similar environments. The book has an ample number of well-chosen diagrams, but more photographs of selected vegetation subtypes would have increased the pertinence of some comments to those students unfamiliar with this area.

Dr. Hopkins admits that any discussion of ecological features in West Africa is severely restricted by the current lack of relevant research ; in particular, it is doubtful whether some of his more general statements concerning the physical environment will still hold true when more detailed knowledge is available. Moreover, his conclusions concerning the role of man in savanna formation may not be entirely applicable in other parts of the world e. g. in South America. But, given these minor drawbacks, his book can be recommended as an admirable introductory survey of the problems associated with forest and savanna environments in the tropics, particularly in West Africa.

David Watts,
University of Hull, England.

DAVIS, P. H., CULLEN, J. **The Identification of Flowering Plant Families.** Edinburgh and London, Oliver & Boyd, 1965, 122 pages.

This is an excellent small book, which students in biogeography and ecology, as well as those interested in identifying plants for other reasons, will find most useful. It is the only small, compact book, currently in print, concerned with the genus identification of angiosperms in the northern hemisphere, and includes descriptions in key form of all related plant groups, excluding those of Mexico, Florida, India, and parts of subtropical China ; in short, it deals with flowering

plants which grow predominantly north of latitude 30° North. The key is easy to follow, being dichotomous throughout, and the book is pocket-sized, both useful features for the field workers.

For those not too familiar with techniques of plant identification, short sections explain the major vegetative and floral characteristics of plants, and the taxonomic significance of certain terms, particularly those relating to the relative positions of floral organs, and placentation. Summaries of the characteristic features of each genus, and their geographic distribution, are also included, together with well-chosen diagrams, a glossary of technical botanical terms, and a pertinent bibliography.

David WATTS,
University of Hull, England.

BURNETT, John H. (ed.) **The Vegetation of Scotland.** Edinburgh and London, Oliver and Boyd, 1964, 614 pages.

All vegetation studies in Scotland owe a great deal to the pioneer phytosociological work of Robert Smith, dating from the turn of the present century. It was he who first introduced to that country the idea of change from a purely phytogeographical or regional approach towards vegetation studies to a more strictly ecological approach, through developing an emphasis on such important facets of the physical environment as elementary food and energy relationships, the influence of the biotic factor, the relationships between species, and so on — as well as attempting to refine the delimitation of factors which cause geographical variation between vegetation communities. In *The Vegetation of Scotland*, Professor Burnett acknowledges his debt to Smith, and to later analytical research by Poore, whose attempt with McVean in 1957 to relate Scottish Highland communities with European continental equivalents was based on techniques developed from Braun-Blanquet and Nordhagen. But in itself the book under review represents a significant advance over all previous vegetation studies of Scotland inasmuch as it brings a more complete analysis of major communities and sub-communities, and their relationships with continental equivalents, than anything which has hitherto been attempted. It is especially important in providing for each community synoptic floristic tables giving dominants and constants where they are known, in describing community distribution, and the related altitudinal and edaphic ranges, and in giving the relationships between each community and other similar communities (especially in Scandinavia), and their respective ecological histories.

Following an introductory chapter by Professor Burnett, the book is organised into three major divisions. The first of these consists of two chapters on the physical environment, one on climate written by F. H. W. Green, and the other on soils by E. A. Fitzpatrick. Climatic influences such as rainfall distribution, temperature variations, wind and snowfall patterns, and the effects of exposure, are analysed in detail, together with the important hydrological considerations of totals of potential evapotranspiration, and the distribution of areas with an annual potential water deficit. The two latter features, which are not always noted in ecological treatises, are dealt with adequately, if not at length, and passing note is made of the restriction not only of certain communities but also of certain plants (e. g. *Drosera anglica*) to areas of annual potential water deficit. Soil morphology and development is analysed according to a synoptic classification based on recent research completed by continental workers such as Kubiëna, Mückenhausen, Duchaufour, and Tavernier.

A series of chapters on the major vegetation communities of Scotland comprises the second, and major division of this book. C. H. Gimingham writes on the maritime communities and dwarf shrub heaths, D. N. McVean on the montane zone, and on woodland and scrub associations, J. King and I. A. Nicholson on grasslands within the forest and sub-alpine zones, A. J. Brook and D. H. N. Spence on the lowland acquatic communities, D. A. Ratcliffe on mire and bog vegetation. Each of these is analysed in detail by means of using phytosociological techniques, and additional specific references are made to further areas or topics of particular importance, e. g. those areas of old forest and woodland which still exist ; the Culbin sands area ; the nutrient balance and hydrological considerations of vegetation succession in grassland areas ; the relationships between dwarf-heaths on both sides of the North Sea ; and so on.