

BOOK REVIEWS

L. VAN DER PIJL: *Principles of Dispersal in Higher Plants*. 2nd edition, 162 + XI pages, 26 figures, Springer Verlag, Berlin, Heidelberg, New York, 1972. Price (cloth) DM 39.50; US \$ 12.60.

The first edition of van der Pijl's "Principles" was published in 1969. The fact that a second edition has become necessary so shortly after the first shows that the book fills a need. Virtually nothing of the kind has appeared since Ridley's famous "Dispersal of Plants" (1930). This volume is still a mine of factual information but does not formulate general principles which van der Pijl's book aims to do. Little has been changed in the new edition, some chapters have been extended to take up the latest literature. The list of references has consequently raised from 201 in the first to 261 in the second edition.

Dispersal biology has always been subject to (often justified) suspicion by students in other fields of botany. Experiments in this field are mostly time consuming, and difficult to carry out. I could not agree more with the author when he says (p. 4): "... dispersal and its attendant phenomena require much more study". It is van der Pijl's merit that he has stepped from behind the writing desk and off the "trodden path of temperate ecology" (p. 2) and has produced a highly original work that has had ample benefit from the author's nearly 30 years of tropical (Indonesia) experience.

An enumeration of the main chapters gives an idea of the contents: I Introduction, II General terminology, III Units of Dispersal, IV Relation between Flowers, Seeds and Fruits, V Ecological Dispersal Classes, established on the Basis of the Dispersing Agents, VI Combination, Limitation and Cooperation, VII Establishment, VIII Evolution of Dispersal Organs, IX Ecological Developments in Leguminous Fruits, X Man and his Plants in relation to Dispersal.

Although mostly critical the author sometimes gets carried away by his enthusiasm, for instance when he says that "...in anticipation of dispersal function... in anemochorous *Gyrocarpus* they (i.e. the calyces) are already winged", or (p. 25) "The anemophily of *Juncus* has not yet caused monovuly".

Some inaccuracies have to be mentioned. On p. 29 he states that Phillips records *Olea*–*Oleac.* and *Eleaocarpus*–*Elaeoc.* seeds as dispersed by African birds, but the latter genus does not occur in Africa. Perusal of Phillips's paper learns that this author mentions *Elaeodendron*–*Cel.* On p. 10 discussing bulbils of *Dentaria* and *Cardamine*–*Cruc.*, *Dioscorea*–*Diosc.*, and *Globba*–*Zing.* he says: "...in such grasses...". On p. 93 dealing with Compositae of Hawaii he gives as examples *Bidens*, *Stenogyne* and *Tetraplasandra*. Only the first belongs to Compositae the other two are respectively Labiatae and Araliaceae, which van der Pijl surely knows.

Such shortcomings could be obviated by providing family names after the scientific names in the index.

The book is packed with ideas and suggestions that invite further investigation. Reading, however, is not too easy for the uninitiated on account of the terminology. This could be helped by providing a glossary of terms at the end.

One would wish the book to be more abundantly illustrated, preferably with coloured photographs, but this would perhaps put it beyond the reach of a wide public. As it is the book is cheap considering the amount of information and ideas it contains.

The execution is excellent and printing errors are very few.

M. M. J. VAN BALGOOY

R. BORNKAMM, *Einführung in die Botanik*. 171 p. 104 fig. 14 tab. (Uni- Taschenbücher Band 114). DM 14.80 Eugen Ulmer, Stuttgart, 1973.

In this brief introduction to Botany Prof. Bornkamm has preferred to discuss physiology, anatomy and morphology together, in stead of in separate sections. The author takes the life cycle of the seed plant as a guide, thus beginning the first chapter, comprising the main part of the book (117 p.), with a description of the seed and of cells and cell structures in general. Then comes germination which gives the opportunity to deal with metabolism and growth. This part is followed by a discussion of the vegetative development, including regulation, water uptake, salt uptake, transport, and the chapter is naturally concluded with a few pages on flower induction, flowering, fructification and heredity. The second chapter (28 p.) is a survey of the other members of the plant kingdom, and the book ends with a brief account (11 p.) of "the plant in the biosphere".

Although the level of the treatment generally is between secondary and tertiary education, it is often even more elementary, in any case by the dutch standard (hormones, tropisms, permeability). The effect of temperature on life processes (the optimum curve), for instance, is treated purely descriptive, without even mentioning enzymes.

I fear, on the other hand, that in other cases consultation of special text-books will be needed to be able to understand this book, being called in the preface just an introduction to them (hydrature, water potential, citricacid cycle). Anyway, it remains an admirable achievement to present so many things on so few pages without often becoming obscure. I hope the beginning student will be of the same opinion.

L. ANKER