

REVIEW.

G. ERDTMAN, *Pollen Morphology and Plant Taxonomy — Angiosperms (An introduction to Palynology. I)* — Stockholm (Almqvist & Wiksell) and Waltham (Chron. Bot.) 1952. Printed in Sweden. XII + 539 pp., coloured title plate and more than 1000 figures in 261 illustrations. Price Sw. cr. 73.—.

For more than thirty years the well-known Swedish palynologist Dr G. Erdtman has consistently gathered facts about pollen types. Pollen-analysis led him, naturally, and necessarily, to pollen morphology, so as to lay a safe basis for further palaeobotanical work.

It will be a surprise to many a reader of the above book that the term "palynology", already very familiar among botanists, was only coined in 1944. This term, mostly but apparently erroneously applied in a palaeobotanical sense only, just means "pollen science" and is therefore more or less synonymous to pollen (external) morphology s.l.

The book, announced here, adorned with a foreword (in French) by Prof. H. Humbert, of Paris, and dedicated to three well-known botanists (L. W. Bailey, C. Skottsberg and R. P. Wodehouse), who in some way or other are connected with the author or his work, comprises the results of his many and painstaking investigations in a much condensed but very efficient form. It is a worthy successor of Wodehouse's pioneer book of 1935. In some respects, notably in a descriptive, morphological and taxonomic sense, it is much more complete than the latter; on the other hand it purposely omits other facts, either since these have been circumstantially discussed by Wodehouse or because they will be treated, as far as fitting in the critical context of Erdtman's book, in a second volume which will deal with the Lower Cormophyta and literature on pollen statistics and palynology.

The bulk of the work consists of an alphabetical list of 327 families. This list is preceded by short but quite indispensable introductory chapters in which first of all the contacts of palynology and its possible use for other disciplines is pointed out. Other paragraphs are dealing with the way in which pollen preparations are to be made. Since Wodehouse's work great progress has been made, both in this field and in the description and terminology of details. As to the latter Erdtman has introduced a whole system of terms, many of which are newly coined. I would not venture to say that this system (and some similar systematizations) almost seem too perfect and formalistic, for every one item is probably essential and indispensable; but I could not help being sometimes reminded of another valuable work of Swedish thoroughness, in which the terminology is so much elaborate that its practical usability seems somewhat doubtful (G. E. Du Rietz, *Life Forms of terrestrial Flowering Plants I*, 1931; as far as I know discontinued). It is fortunate that, beside the illustrated introductory paragraph on terminology, there is, at the end of the work, an extensive glossary, comprising more than 200 entries (in 14 pages) for most of which reference is made to elucidating figures in the text. Wodehouse's glossary only explained some 60 terms.

However this may be, Erdtman's terminology, though rather complicated, is exceedingly clear and logical and is obviously the outcome of a very meticulous scrutiny, the result being an admirably trustworthy basis for future research.

Taxonomical specialists will probably disagree with the delimitation of certain families, with which they are thoroughly familiar; a delimitation which is, admittedly, not always in accordance with current, still less with recently expressed views. It should, however, be realized that the author is not a taxonomical specialist and the main point is, that all major groups have been dealt with — though to a rather variable extent — and that after all, every taxonomist will be able to find what he is looking for, either in the index (down to genera) or in the very extensive if yet incomplete bibliography (42 pp.), to which the short indications in the text repeatedly refer.

Being fully aware of the fact that he is not a taxonomist by profession, Erdtman has carefully refrained from expressing opinions on taxonomical relationships; but he provides us with all data which may be of use as auxiliary evidence, showing in which direction the "palynological compass-needle" points and in which it clearly does not. Though gross taxonomy of the old (macromorphological) style, has proved to be fairly self-sufficient, it has, regarding details, greatly profited in recent decennia by the results of cytogenetics and anatomy. Like the latter, palynology may give additional help but it has likewise to be applied critically and carefully, for in some cases its results seem irrelevant, though in others it is able to provide us with evidence of a clearly elucidating or corroborating nature.

The illustrations are all original, very clear and of standard enlargement but the user of the book will, of course, have to make himself fully familiar with the technique of making preparations and with the terminology, if he is to get full profit out of the book for his own purposes.

While we are looking forward to Vol. II, we may congratulate both Dr Erdtman, the editors and botanical science on the publication of this work, whose usefulness to palaeobotanists, above all, is evident. Erdtman's unique creation, the Palynological Laboratory at Bromma, Sweden, will, at an increasing degree, be an indispensable source of information for taxonomists, for many data had to be left unpublished; on the other hand, this Laboratory may rely on the co-operation of numerous taxonomists, "refunding" — to quote an Erdtmanian complimentary phrase in the reverse sense — "in taxonomical currency, our debts to this outstanding palynologist".

H. J. LAM.