

### REVIEW

P.F. YEO: Secondary pollen presentation: form, function and evolution. *Plant Systematics and Evolution/Supplementum 6*. Springer-Verlag, Wien/New York, 1993. viii + 268 pp., 55 figs., 16 tabs. Clothbound. Price DM 220 (DM 198 for subscribers to *Pl. Syst. Evol.*). ISBN 3-211-82448-0.

Secondary pollen presentation is a taxonomically widespread phenomenon that is unknown to many botanists. As defined by the author, it embraces those cases in which pollen is transferred within the flower, and presented to pollinators on or by floral structures other than the thecae. The intraflower transfer often involves intriguing adaptations of petals, androecium and distal parts of the gynoecium.

The present book is largely a case of secondary presentation itself, being actually a review of the literature on the subject, supplemented with unpublished data and drawings. The main part (208 pp.) extensively describes familywise all taxa known to have secondary pollen presentation, with many comments inserted. Papaveraceae, Leguminosae, Proteaceae, Campanulaceae, Goodeniaceae and Rubiaceae provide relatively many examples, whereas secondary presentation is general in Compositae. A discussion and separate list of references conclude each family. Although the descriptions are very detailed and many cases nicely illustrated, usually with drawings from the source publications, it is sometimes hard to imagine the structures and mechanisms. It would facilitate understanding if more symbols had been used in the drawings.

So many factors interact in secondary pollen presentation, so much diversity exists, and so much of flower biology is still unknown (a special section is devoted to future research), that discussing the phenomenon is a precarious enterprise. Nevertheless, the author succeeded in composing an interesting overview of the functional, taxonomic, and evolutionary aspects in a general discussion. Unfortunately, nothing is said about the role of the pollen itself. In the last decades attention has been paid to the relation between pollinators and pollen ornamentation. After reading the book, we suspect that in taxa with secondary pollen presentation, the pollen grain coherence and adherence to various flower parts may be an equally important factor in the evolution of the ornamentation of the pollen wall.

The book is a very useful reference work on the subject, and is recommended to all fascinated by flower structure and pollination. One would wish also primary pollen presentation to be treated in such an overview.

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