

REVIEW

B. M. MOELIONO, Caulinary or carpellary placentation among Dicotyledons. Part I Text, Part II Plates. — Royal Van Gorcum Ltd., Assen, The Netherlands. 1971. I: XIV, 292 pages; II: VIII, 92 pages; 18½ × 25½. — Price: cloth f 83,00. ISBN 90 232 0568 5.

This book is an exploration into the field of Plant Morphology. It deals with the placentation of the ovules in ten families of *Centrospermae* — including the *Cactaceae* — and in the *Primulaceae*. The core is formed by a very close observation and a complete documentation of the histogenesis of the ovary wall, the septa, and the placenta in four Caryophyllaceous species. Furthermore, the result is compared with similar known and newly discovered features in other species and in the other families.

It appears that the ovary is composed of a cup of sterile phyllomes which surrounds a central body. This central part is built up by two alternating sets of five axial placenta bearing the ovules. The septa grow from the cup inwards and fuse with the placenta and their ovules. The pattern of the vascular bundles is in full accordance with the histogenetic results. Variations on this theme occur in the other species and families, the ultimate stage in reduction being an ovary with a solitary terminal ovule. However, the *Primulaceae* do not fit in this scheme; they cannot be considered as *Centrospermae*.

Since the author adopts a possible polyphyletic origin of the Angiosperms, he is in favour of the use of a stringent homology concept. As a consequence the results are held to be valid for Centrosperms only. The author is an adherent of the New Morphology, which takes into account the findings of Paleobotany. However, at the same time he adheres to the high research standards of Classical Morphology. It is his opinion that the study of the external form, the anatomy — the vascular bundle system — and the morphogenesis should not only be fully integrated but also be done comparatively.

The work of several authors is discussed in detail, for instance that of Eckardt, Roth, Boker, Meeuse, and Zimmermann. Moreover, various topics receive special attention, such as the terminal ovule, the parietal placentation, the postgenital fusion, the 'Gestalt' typology, the homology concepts, the New versus the Old Morphology, the Telome Theory, and the Stachyosporry Phyllosporry issue.

In the second half of the book the evidence is presented, in the form of the numerous line-drawings made from microscopical slides, that accumulated during this painstaking study. The list of references is a treasure.

To the reader it will be immediately clear that the revolutionary findings of the author have found most thorough and patient attendance in this book. The author appears to master this field of plant morphology and its intricate theoretical backgrounds completely. Yet I would have welcomed a few good photographs supplementing the fine drawings. They should have shown the ontogenetic fusions between the septa and the central body. As the author informed me, anatomical studies by means of the electron microscope are being made in order to substantiate this critical part of his work. After having worked through the whole book — which offers no easy reading — I do not yet have a clear picture of how the two sets of placenta together constitute the central body. The amount of learning embodied in this book seems almost baffling. However, I do not understand what the author means by the expression 'interpretative morphology'. I think this term should be avoided as it is suggestive of guess-work, which it is definitely not.

This book merits reading by all those interested in flower morphology. It is a must for specialists and maintains a very high standard in morphological research.

W. A. VAN HEEL