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BOOK REVIEW

The Molecular Biology of Plant Cells: edited by H. SMITH. Botanical Monographs, Vol. 14. Blackwell Scientific, Oxford, 1977. 496 pp. £13.50.

A textbook written by a number of different authors and not merely a collection of unconnected articles; so aspires the editor. Each of the seventeen chapters is written by a different specialist but within pre-defined editorial guidelines. The aim is to provide a modern survey of the structure and function of plant cells including genetic aspects. The final three chapters relate these considerations to the physiological manipulation of plant cell cultures and isolated protoplasts. Paradoxically, the text is said to cover the basic biochemistry of plant cells without dealing with metabolic pathways. On the whole, the authors write effectively and interestingly about their special subjects and there is a coherence between their respective topics but, with few exceptions, the approach is not biochemical. For this reason, it is difficult to accept the claim that the book provides a text on crucial areas of plant biochemistry. Rather it reviews present knowledge of the relationship between the physiology of plant cells and their structure. In places, I would have liked to have seen the specialist authors write a little more critically. For example, nitrogen continues to disappear without trace or comment in the glycollate scheme; cytochrome b_{559} is shown in the Z-scheme of photosynthetic electron transport as though an established part of photosystem II; and the only paper cited on the possible involvement of cyclic AMP in hormone action is incorrectly represented. There are also a number of typographical errors, some of which seriously scramble the text at critical points. The meaning of two paragraphs on page 163 is obscured in this way. Because of the multi-authorship, it is difficult to generalize about this book. Some of the reviews are excellent and others sketchy. Despite the criticisms, however, the book will provide a useful collection of reviews on the cell structure-function field. It is especially suitable for the advanced undergraduate in plant sciences.

Department of Biochemistry,
University College of Swansea
E. G. BROWN