

ma and plasma membrane, microbodies and peroxisomes, cytoplasm, protoplast, cytoplasm and protoplasm, male, sperm, generative and reproductive nucleus, are used interchangeably. Angstrom units and nanometers are used equally, and no scales are included on the photographs, only a magnification (e.g. $\times 20,000$) in the text.

Word usage is also rather annoying at times; 'locust' is used to refer both to *Taxus canadensis* (pp. 57, 100) and *Robinia pseudocacia* (p. 88), solubilizing is used instead of dissolving (e.g. p. 183) and is there such a thing as 'negative tension' (p. 57) in the xylem?

If one can disregard these largely stylistic deficiencies in the text, then this book offers a collection of photographs which would be invaluable for demonstrations in any course on fine structure of plant cells. It can also be warmly recommended to phytochemists and other non-botanists as a good pictorial introduction to this aspect of plant science.

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The Biochemistry of Fruits and their Products. Vol. I: edited by A. C. HULME, Academic Press, London and New York, 1970. 620 pp. £10.

THE biochemistry of fruit ripening is a topic which is often neglected in general biochemistry books and even in plant biochemistry texts it usually receives scant treatment. The ripening fruit, however, is an important experimental material, since it provides a unique means of studying aspects of ageing and senescence under controlled conditions for long periods. Economically, the subject has many ramifications in horticulture and in food science. This volume, the first of two, is the first attempt to provide a comprehensive account of fruit biochemistry and is therefore most welcome.

The book is divided into four sections: fruit constituents, growth factors, ripening and physiological disorders. The first section is by far the longest and contains a series of chapters by leading authorities on sugars, pectins, organic acids, amino acids, proteins and enzymes, lipids, volatiles, phenolics, terpenoids and vitamins. Of these, I found H. E. Nursten's account of aroma principles particularly interesting. He illustrates the enormous range of compounds that have been detected in the volatile fractions of fruits by a listing of 160 substances in the apple alone. One learns that the characteristic flavour of banana is due to a mixture of isopentenyl acetate and eugenol, that of cucumber to *trans*-2,*cis*-6-nonadienal; and that those of such well-known fruits as the strawberry and blackcurrant have so far defied scientific description.

The other two sections of the book are shorter and have chapters on nutrition (E. G. Bollard), hormonal factors (J. P. Natsch), ethylene (W. B. McGlasson), the climacteric (M. J. C. Rhodes), physiological disorders (B. G. Wilkinson) and apple scald (D. F. Meigh).

This is a successful production and while one might quibble with a few minor faults (e.g. the taxonomic treatment of fruit names is sometimes incorrect and inconsistent), it is nevertheless a considerable achievement of the editor. The book will be a valuable reference not only to those plant scientists working with fruits but to biochemists generally.

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