co-workers on the biochemistry of plastocyanin, the important copper-containing photosynthetic carrier molecule. At the present time, twelve complete amino acid sequences and 57 partial sequences have been determined. A striking feature of this protein is the enormous variation that occurs from species to species in the first fifty residues, compared to the invariance of the remaining 49 positions. The two similar legumes broad bean and runner bean differ in their plastocyanins in 20 residues! It is fascinating to speculate on the evolutionary significance of such variation.

While much has been written on the biochemistry of higher plants as affected by microbial infection, less attention has been paid to the biochemistry of the pathogen. J. Friend in his chapter on plant pathogens redresses this imbalance and gives us a very valuable overall perspective of the biochemical interactions of host and parasite. The remaining reviews in this book deal with electron transport in chloroplasts (D. S. Bendall), biochemistry of osmotic regulation (H. Kauss), and ion transport in plant tissues (E. A. C. MacRobbie).

In the view of this reviewer, the editor is to be congratulated in his choice of authors and topics, since these essays are both lively and provocative. This volume makes a most useful contribution to the review literature and should be widely available wherever plant biochemistry is taught or practised.

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Phytochemistry, 1978, Vol 17, p. 843 Pergamon Press Printed in England.

Plant Tissue and Cell Culture: edited by H. E. STREET. Botanical Monographs No. 11, 2nd edn. Blackwell Scientific Pub., Oxford, 1977. 614 pp. £22.

The fact that this 'bible' of plant tissue culture has gone into a second edition after only four years speaks for itself. This botanical monograph clearly leads the field, written as it is by fourteen experts in the subject and edited by a supreme master of tissue culture techniques. All those who have cherished the first edition will need to buy this new work, since it has been extensively rewritten to take into account the many new results that have flooded in since 1973. Indeed nearly a third of the references are new!

I was particularly pleased to see that the sections on the metabolism and biosynthesis of secondary products have been significantly expanded and these pages now contain very adequate accounts of topics which are of particular interest to most readers of this journal. There are, in fact, few areas of botanical research which have not been influenced in some way or other by developments in tissue or cell culture so that this second edition, like the first, will engage an extensive readership. It deserves every success.

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