Phytochemistry, 1980, Vol. 19, p. 493. © Pergamon Press Ltd. Printed in England.

BOOK REVIEW

Photosynthesis and Plant Development: edited by R. MARCELLE, H. CLIJSTERS and M. VAN POUCKE. Dr. W. JUNK b. v. Publishers, The Hague, Boston, London, 1979. 376 pp. 130 Dutch Guilders ($68.45).

This book contains the proceedings of a symposium, held in the Limburgs Universitair Centrum, Diepenbeek, Belgium in July 1978. One of the editors and many of the speakers were also associated with the similar symposium held in 1974 which resulted in the publication *Environmental and Biological Control of Photosynthesis* (Dr. W. Junk b.v. Publishers, The Hague, 1975) which was, with the exception of a co-ordinated session on 'Crassulacean Acid Metabolism', rather disjointed. However, the present volume is a great improvement, with about thirty well-presented relevant contributions divided into the following topics: I. Photosynthesis and Leaf Development: II. Photosynthesis and Flowering; III. Photosynthesis and Mineral Nutrition and Growth Regulators; IV. Photosynthesis and source-sink relations; V. Photosynthesis and Nitrogen Metabolism; and VI. Photosynthesis and Pesticides, Photosynthesis and Pathogen Infection. In addition the book contains an inaugural address entitled 'Plant Development and Crop Yield' given by P. F. Wareing. It is a useful concise summary of the current thinking in relation to the influence of plant development on dry matter production and crop yield which is considered in respect of (1) direct effects upon photosynthesis, (2) effects on the efficiency of light interception, (3) effects on source/sink relations, (4) effects on the partition and distribution of assimilates. Of particular interest is a contribution by G. Bernier and R. M. Sachs entitled 'Photosynthesis and Flowering'. According to the authors it is a relatively loose account of a 90 min tape recording of the discussion which followed papers on this topic presented at the second session. Running to about 12 pages it is much more than the usual abbreviated and rather stilted questions and answers which often appear under the heading of discussion. It is a pity that it was not possible for a similar addition to be made to the other sections.

The title of the book might possibly have been more informative if it had been 'Photosynthesis *during* Plant Development'! The emphasis throughout is on aspects of carbon assimilation and yield and how this is affected during growth and development by factors such as flowering, nitrogen status, etc. as listed above.

In contrast to other treatments of photosynthesis and development, this book contains no electron micrographs of etioplasts and no considerations of changes during greening or chloroplast development. In general, the approach taken by the various authors is physiological rather than biochemical and directed towards practical applications rather than extension of basic knowledge. This is particularly true of the final sessions dealing with effects of pathogens. I often feel that this is a neglected aspect of photosynthesis, although the gross effects of severe infection are obvious. As shown by D. Habeshaw, leaf symptom responses are not necessarily indicative of equivalent responses in the changes in net photosynthetic carbon dioxide uptake by the leaf during the course of the disease.

In general, this is a well-produced attractive book although, as is so often the case in volumes of this kind, the index is poor. It is better in both presentation and co-ordination of content than the proceedings of the previous conference, and the organisers, editors and publishers should be congratulated in this respect. I hope that if a third conference of this type is held it will be possible to include detailed discussions related to a greater number of topics. Meanwhile, editors and organisers of other conferences might like to consider the possibility of including such material, particularly when many contributions may have been made in poster sessions.

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