Phytochemistry, 1968, Vol. 7, p. 1437. Pergamon Press. Printed in England

BOOK REVIEW

Harvesting the Sun. Edited by A. SAN PIETRO, F. A. GREER and T. J. ARMY. Academic Press, New York, 1967. pp. 341. Price 60/–.

THIS book, subtitled "Photosynthesis in Plant Life", is the published proceedings of a Symposium sponsored by International Minerals and Chemical Corporation in Chicago during October 1966 to commemorate the opening of its new Growth Science Centre at Libertyville, Ill. Apart from the opening and closing addresses there were six sections devoted to "Biochemical Aspects of Photosynthesis; Carbon metabolism: nature and formation of end products; Chloroplast structure and genetics; Water and CO_2 transport in the photosynthetic system; Aerodynamic studies of CO_2-exchange between the atmosphere and the plant; and Photosynthetic limits on crop yields".

The contributions are uniformly good, as might have been anticipated from the international standing of all the contributors. Although the scholarship is always high the level of treatment varies considerably but never to the detriment of the book. For example, Kok's deceptively simple description of the physical aspects of photosynthesis is a pedagogic delight and is strongly recommended to all students who find this aspect of the subject conceptually difficult. At the other extreme there is a sophisticated mathematical treatment by Lemon of the complex problem of CO_2 exchange between the atmosphere and the plant.

It is invidious to single out chapters for special comment but the reviewer enjoyed von Wettstein's article on chloroplast structure and genetics, although it was marred by poor reproduction of electron micrograph; in other recent volumes from the same publisher the reproduction has been much better. In other chapters on the biochemical activities of the chloroplast it was interesting to note that the selective permeability of the chloroplast outer membrane is at last being considered as possibly playing an important part in the regulatory biochemistry of the chloroplast.

The sections on various agronomical aspects of photosynthesis were very stimulatory and more of this should be brought to the notice of investigators on the fundamental aspects of photosynthesis. It is important occasionally to be faced with statements that 1000 billion (American billions) people could live from the earth if photosynthesis were the limiting factor but that, in fact, "The number of persons who can live on the earth can be increased only a little by increasing the yields per unit surface because most of the land is necessary for other purposes than growing food. A yield increase of 30% leads only to an increase of the maximum number of people by 3%. Even if all the production could be obtained from the sea, the maximum number would increase only 20%. . . ." (DE WIT).

Attendance at the Symposium must have been a stimulating experience and the authors and editors are to be congratulated in preserving the excitement in this enjoyable book. It can be strongly recommended to all senior students of biochemistry and plant physiology—in spite of its lack of any kind of index.

T. W. GOODWIN