

BOOK REVIEW

Physiology of Plants and Their Cells: by JAMES A. GOSS. Pergamon Press, New York, 1973. 457 pp. £6.50.

THIS curious title is perhaps an attempt by the author to indicate that his book covers both the physiology and biochemistry of plants. According to the preface, it is meant to be a general account of plant physiology, not for students in the subject but for biologists in general and perhaps even for the educated layman. For the sake of such a wide audience, the book has an opening chapter "The Plant Cell and Nutrition" and closes with one devoted to "The Relevance of Plant Physiology". In between, there is a quick run through water relations, mineral nutrition, photosynthesis, amino acid metabolism, proteins and enzymes, phytochemistry, membranes, translocation, growth, differentiation and senescence. The book is quite well illustrated although the photographs, especially those of vegetation, do not come out very well, since they are not printed on art paper.

Since this is the first volume in a new "biological sciences" series, to be edited by Peter Gray of the University of Pittsburgh, it calls for critical appraisal. In fact, on the debit side, a number of defects must be pointed out. The book abounds with mis-statements. What is one to make of the sentence, for example: "The anthraquinones are rather abundant in plants but occur more frequently in the Rubiaceae"? Are not the Rubiaceae plants? Again "Benzoquinones are rather widely distributed in plants. . . ubiquinone is perhaps the most abundant of these". This is hardly an accurate statement for a substance (or rather a group of substances) which normally occur in the plant cell in trace amounts. Also, does one require such obvious statements as: "In spite of the fact that man is not the only biological entity in the world, he is the most important one, as far as man is concerned"?

On the chemical side, it is necessary to point out that the formulae given are incorrect in many places. There is really no excuse for missing out various double bonds in the structures of the DNA nucleotides (p. 210). It must also confuse the reader to show sugars in the pyranose form in one place and yet elsewhere illustrate them with the old-fashioned herring-bone formulae. As regards physiological aspects, what does one make of the facts that abscisic acid is incorrectly spelt whenever it is mentioned and that nowhere is the structure and nature of gibberellic acid ever defined? Perhaps the most serious criticism is that there is not a single literature reference in the whole book; there is not even a further reading list.

In spite of the many errors, the book has merit, since it is easy to read. A more accurate, tightly edited second edition would have much to recommend it as a general introductory text.

University of Reading

J. B. HARBORNE