

monoterpene moiety are envisaged from a hypothetical precursor and not strictosidine, while one class of alkaloids are referred to as vincosans thus giving rise to the view that perhaps vincoside is still alive and well as a precursor of these alkaloids. Although fairly recent taxonomic papers on the Rubiaceae are included in the references, the older classifications for some of the genera in the Rubiaceae are given when the alkaloids are discussed. There is now good evidence on chemical and botanical grounds for excluding *Cephalanthus*, *Mitragyna* and *Uncaria* from the tribe Naucleaeae, but this is ignored. It is also unfortunate that of the two classifications of the

Rubiaceae, one should be referenced to "a lecture presented in Strasbourg in 1977". Nevertheless the ideas are stimulating and the chapter does contain a wealth of information on indole alkaloids.

There are good indices for organisms and subjects and the whole volume is well presented by the publisher. I look forward to seeing subsequent volumes but I am afraid the price will, yet again, deter many scientists from buying their own individual copies.

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Plants and Microclimate. A Quantitative Approach to Environmental Plant Ecology: by H. G. JONES. Cambridge University Press, 1983. xvii + 323 pp. £27.50 hardback, £12.50 paperback.

This book has been written to provide the advanced undergraduate and research worker with "an introduction to the basic physical and physiological principles necessary for understanding the interactions between vegetation and the aerial environment". The author has placed emphasis on the environment of a plant growing within vegetation, and particularly on a leaf on that plant, and on how changes in the environment may affect the basic physiological reactions of that plant. Chapters concerned mainly with the physical conditions (e.g. Energy Balance and Temperature) are mixed with chapters in which the main concern is how the physical conditions of the leaf are related to physiology and growth (e.g. Plant Water Relations, Stomata, Photosynthesis and Respiration).

The text is based mainly on our understanding of the North Temperate regions and of the higher plants that grow there. The changing physical conditions of the leaf are described in relation to the climate and microclimate but the description of the variability of climate with time and place is not covered. Most emphasis is placed on energy balance; pollution is not considered. The effect of changing conditions around the leaf on the physiology of the leaf is related to changes which take place over minutes or days. The growth of the plant over time is always the concern. A final chapter on Physiology and Yield emphasises this theme.

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Throughout the text sizes and amounts are given wherever possible, and when relationships are known or inferred these are reduced to mathematical formulae. These formulae are clearly explained and are often accompanied by worked examples as well as a summary of their physical and/or biological meaning and utility. Because of this approach, the pages of the book appear somewhat formidable with their mathematical formulae, greek letters and sub- and super-scripts. The tenor of the book is, however, physiological and not mathematical and the contents should be accessible to all.

For physiologists, ecologists and crop physiologists this book fills a gap in the field of the interactions between plants and their environment. By treating the plant and its microclimate together it is able to bring together insights into the growth of plants in the field that are not easily available in other textbooks. The emphasis in the book on the reduction of as much as possible of our understanding to mathematical equations will enable the reader to make inferences about plants subjected to specific environmental conditions even though these may not be specifically mentioned. This, though potentially dangerous, is likely to prove a very valuable feature of this book. The book is nicely produced, easy to read, and generally well proof read.

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