

secondary metabolism (M. Luckner) with its references to transcription and feed-back control, could not have been anticipated in 1955.

There is a considerable degree of overlap between some of the articles in this volume, and related articles in other recently published books and current reviews. This understandably occurs when lucid and active experts on cyanogenic glucosides, amino acids or phenols, for example, contribute to successive volumes and symposia. However, a brief and cynical comparison of three articles in the present volume with other articles written by the same authors failed to find any paragraphs which had simply been 'lifted' from one article to the other; on the

contrary, it suggested that in the three cases, similar material had been conscientiously tailored and arranged to fit the requirements of the different books. This does credit to the authors, but may only reflect, of course, the influence of clear-headed and strong-willed editors.

The first six pages of the volume sent for review had been erratically bound; the table of content, the preface and the list of contributors were randomly mixed. This is unfortunate in a book that will be consulted for many years to come, and especially when it costs £50. *Caveat emptor!*

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Demography and Evolution in Plant Populations: edited by O. T. SOLBRIG. Botanical Monographs, Vol. 15. Blackwell, Oxford, 1980. 222 pp. £15.00.

This is a timely book. It deals with the life cycles of plants as they occur in populations, their birth, growth, reproduction and death. These factors, of course, are fundamental to an understanding of natural selection, for which there is a great deal of circumstantial evidence in the literature derived from studies of characters presumed to be adaptive. There is very much less information on the direct measurement of natural selection, based on the numbers and properties of individuals through the life cycle, and it is this which is the principal concern of plant demography.

Demographic studies of plants have really only attracted a major research effort during the past decade. Harper's *Population Biology of Plants* (Academic Press, London, 1977) provided a synthesis of a field which he has been prominent in developing. The present volume is very much smaller but brings together a group of contributors who have succinctly provided an overview of the current status of plant demography, its achievements, possibilities and problems. Solbrig's introductory chapter outlines the evolutionary context of demographic studies and is neatly complemented by the second chapter (White), which deals with the problems encountered in measuring demographic factors in plant populations. Chapters on the genetic structure of plant populations (Solbrig), mating patterns (Lloyd) and vegetative reproduction (Abrahamson) provide clear accounts of the role of these

important parameters in demographic studies, whilst the treatment of the biology of seeds in the soil (Cook) provides a fascinating introduction to the demographic importance of seed dormancy and longevity, about which much still remains to be discovered. Many demographic data have been obtained from agricultural research, with its obvious economic importance, and Snaydon's chapter on agricultural systems uses this information to provide a valuable review of the demography of such systems, relating them to the situation in natural ecosystems wherever possible. The final chapter, on tropical systems (Sarukhan), is in marked contrast, dealing as it does with plants for which there is probably least demographic information and the highest threat of extinction.

In addition to providing a readily assimilable overview of the meeting grounds of genetics and ecology, this book will undoubtedly make many more phytochemists consider how their data might be gathered in a form valuable for demographic studies. The chemical monitoring of plants and populations throughout their life cycles will raise many problems, but the potential rewards must be clear from this monograph. The volume has been carefully edited, is generally free of typographical errors and is of a production standard which does justice to the Botanical Monograph Series, to which it belongs. By today's standards the price should permit ready access by all students of plant biology who ought to read it.

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