



PERGAMON

Phytochemistry 51 (1999) 719–720

PHYTOCHEMISTRY

Book reviews

***Drug Discovery from Nature*, edited by S. Grabley and R. Thiericke. Springer-Verlag, Berlin, 1999. 347 pp. £76. ISBN 3-540-64844-5.**

Ever since the discovery of the therapeutic value of penicillin in 1942, micro-organisms have provided drug companies with many of their most effective cures for human ailments. It is not surprising, therefore, in this new book on drug discovery that microbial sources are given some prominence. There are chapters on myxobacteria as producers of secondary metabolites and on strobilurins and oudemansins. Again, there are accounts of combinatorial biosynthesis of antibiotics and of molecular biological aspects of antibiotic biosynthesis. Then there are reports of novel antibacterial drugs from micro-organisms and of new antibiotics with novel modes of action. Finally, there is a chapter on marine biotechnology which concentrates on marine micro-organisms.

Higher plants as sources of new drugs figure in the opening historical chapter by S. Grabley and R.

Thiericke. They are also considered in one or two later chapters, e.g., the synergistic use of combinatorial and natural product chemistry. They are also discussed in an interesting chapter on a central natural product pool—a new approach in drugs discovery strategies.

There have been a number of similar books produced in recent years, discussing the possibility of new leads for plant drug discovery. Most of these have emphasised higher plant sources, so that this new book can be regarded as providing fresh insight into drug design from microbial origins. The authors are largely from German laboratories, with one or two from Japan and the USA. Curiously, there are no English contributors. It is well produced and reasonably priced. I suspect that it will be more popular in industrial rather than in academic laboratories.

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PII: S0031-9422(99)00138-7

***Sold on Plants, Plant Physiology and University Life in Retrospect*, by Alfred M. Mayer, Balaban Publishers, Rehovot, Israel, 1999. 235 pp. \$25. ISBN 0-86689-052-1.**

Unless you are invited by the organisers of the 'Annual Reviews of Plant Physiology' to write your memoirs, plant scientists rarely have the opportunity to reminisce about their work. Professor Alfred Mayer of the Hebrew University, Jerusalem, in the absence of such an invitation, decided to write and publish his own story, and that is what we have here. It is certainly a remarkable account of modern plant biochemistry, carried out during the period when the new state of Israel became established. The story of this life is

carried forward in an attractive style, at a considerable pace but with occasional reflections and asides.

Professor Mayer had the misfortune to be born as a Jew in the early thirties in Hitler's Germany and so was forced to leave his homeland as a young school-boy. He eventually settled in England and studied at University College, London under the guidance of Professor Pearsall. However, although happily living in England, he decided to join the young state of Israel. As a botanist, he taught at the Hebrew University for all his career, taking on a number of arduous administrative posts by the way. And yet, in spite of such teaching and administrative burdens, he was able to establish a whole series of important lines of plant

research, some of which he still carries on to this day. I always connect his name with polyphenol oxidases and with seed germination (he was co-author of one of the key textbooks on this topic), but as you can read in this book, he made significant contributions to several other fields. His work on the enzyme laccase, for example, won him an honorary degree from the University of Bordeaux. Alfred Mayer is also not afraid to describe his personal life. Most moving is the account of his close relationship with his late wife, Nitzà, and her sad death within a few years of their marriage.

PII: S0031-9422(99)00139-9

Altogether, this is a fascinating story of a modern plant scientist, who was lucky in his research to achieve a number of valuable breakthroughs. He generously acknowledges the influence of his students and co-workers and provides a rounded account of the pursuit of an academic career in plant sciences over the last fifty years.

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***Carotenoids. Volume 3. Biosynthesis and Metabolism*, edited by G. Britton, S. Lisaaen-Jensen and H. Pfander, Birkhauser Verlag, Basle, 1998. 414 pp. 198 Swiss Francs. ISBN 3-7643-5829-7.**

This is the third volume in a continuing series of monographs devoted to the carotenoid plant pigments. It deals with their biosynthesis and further metabolism, but also includes something on chemosystematics (within the algae), molecular biology, the absorption of carotenoids by animals and the place of carotenoids in various food chains. A final chapter by the senior editor provides valuable first hand guidance on the practical strategies and procedures for studying biosynthesis and applying biosynthetic inhibitors.

Nature makes carotenoids on a truly grand scale, particularly in seaweeds, and in great variety, especially in the yellow flowers of higher plants. The study of their biosynthesis presents many challenges.

PII: S0031-9422(99)00140-5

How is the basic C₄₀ skeleton assembled, how is unsaturation introduced and how are all the many and varied oxygenated pigments elaborated. Animals, of course, cannot biosynthesize carotenoids, although many fish, birds and crustaceans derive their colours from dietary carotenoids, which are then often subjected to structural modification. These are just a few of the major themes discussed in this volume. The biosynthetic story is completely up-to-date and includes discussion of the alternative isoprenoid pathway proceeding from glucose via 1-deoxyxylulose 5-phosphate. In all, this book reaches a very high standard of presentation and can be strongly recommended.

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