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Book review

The Phytochemistry of the Macro and Blue-Green Algae of the Arabian Gulf

Edited by A.M. Rizk, H.S. Al-Easa and J.M. Kornprobst, Faculty of Science, University of Qatar, Doha, State of Qatar, 2000. 745 pp. $75. ISBN 99921-46-64-8.

Marine chemistry has a special fascination because the chemicals present often differ significantly from those present in terrestrial organisms. This is true of both the marine animals and the marine algae, on which the animals may feed. The algae have special polysaccharides present and the range of chlorophylls present extend from a and b to c_1, and c_2. Then there are pigments unique to the algae — the phycobilins. There are also a range of algal non-protein amino acids and betaines and the phenols present may uniquely have iodo- and bromo-substitution. Bromo-substitution also extends to the terpenoids, which additionally occur regularly in algae as sulphate esters. Not to be forgotten are the phlorotannins, based on phloroglucinol, which take the place as feeding deterrents of the various ellagitannins and condensed tannins of land plants.

The special chemistry of algae, as highlighted above, is the subject of the first part of the present book under review. There is then a short section on the economic utilisation of algal products. The second part of the book consists of a listing of all the algae known to inhabit the waters of the Arabian Gulf. Part three is given over to describing the many and various chemical constituents of these organisms, laid out on a chemotaxonomic basis. Very little can have been omitted, since over 5000 references are provided. There are also extensive taxonomic and chemical indexes.

There is a certain degree of duplication between Parts I and III in that the chemistry is covered twice — once according to chemical classification and once according to taxonomic distribution. However, this is not a serious problem and means that it is rather easy to look up a particular structure or a particular algal source. More problematical is the restriction of the phytochemical information to the algae of the Arabian Gulf. However, it is a reasonable assumption that the algal flora here is not too different from that in any of the warmer waters of the Worlds oceans.

This is a beautifully presented volume, with a range of colour plates of representative algae included. It is clearly a labour of love on the part of the editors. Considering it is being advertised at the very reasonable price of $75, it is an excellent buy.

Jeffrey B. Harborne

School of Plant Sciences
Department of Botany
The University of Reading
Whiteknights, PO Box 221
Reading RG6 6AS
UK

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