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BOOK REVIEWS

The Euphorbiales—Chemistry, Taxonomy and Economic Botany: edited by S. L. JURY, T. REYNOLDS, D. F. CUTLER and F. J. EVANS, Linnean Society Symposium Series No. 13, Academic Press, London, 1987, 326 pp., £15.00.

At first sight, this Symposium volume from the Phytochemical and Linnean Societies would appear to be another one in the series on the Chemotaxonomy of Higher Plant Families which Don Boulter, Billy Turner and I began in 1971 with a publication on the Leguminosae. Subsequent Symposia (and publications) were devoted to the Umbelliferae, Cruciferae, Solanaceae, Compositae and Rutales. In all these Symposia active interaction took place between phytochemists and taxonomists and a major emphasis in the subsequent publication was on the contributions of chemistry to the systematic revision of the given plant group. Unlike these earlier volumes, the present book does not really offer much to the chemotaxonomist and in only one chapter on latex triterpenoids by P. G. Mahlberg, does chemotaxonomy receive detailed discussion. The book is essentially a series of essays, which review in turn the anatomy, chemistry, classification, ethnobotany, pollen morphology, and economic importance of plants of this order.

From the chemical viewpoint, euphorbs are notorious for their latex constituents, especially the tumour-promoting diterpenoids and no less than six chapters are devoted to these irritant substances. The most immediately relevant of the six is probably that of E. Hecker who outlines the risk factor in Man for developing oesophagal cancer from the use of euphorbs as bush-teas in Curaçao due to the co-carcinogenic properties of the phorbol esters present in these plants. Other papers describe experiments carried out with the phorbol esters as valuable probes for understanding the biochemical events involved in cancer initiation. Also on the beneficial side is the fact that these plants provide us with rubber via *Hevea brasiliensis* and the staple food crop of Cassava. There is much useful information in several chapters on the economically important products of the order. Melvin Calvin then discusses the possibilities of using euphorbs, especially *Euphorbia lathyrus*, as sources of fuel oils. A. M. Rizk in the final chapter of the book, provides a useful listing of miscellaneous chemical constituents, especially the phenolics and alkaloids.

This Symposium volume therefore contains a wide variety of chemical and botanical papers centred on the euphorbs. It is attractively produced, with excellent illustrations and many chemical formulae. It is also attractively priced at £15.00 and deserves a wide circulation. The only thing missing is an index!

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***In vitro* Culture of Higher Plants:** by R. L. M. PIERIK, 3rd edn, Kluwer, Dordrecht, Netherlands, 1987. 344 pp. Hardback £74.50. Paperback £29.25.

The employment of tissue culture techniques in plant research took some time to get going and I remember the early days when two British pioneers F. C. Steward and Herbert Street lectured on the subject. Their lectures had the air of revivalist meetings and one expected the members of the audience to rush out afterwards and order the necessary paraphernalia of test tubes, conical flasks, 2,4-D and coconut milk. At that time there was little commercial application of the technique and it was a matter of pure science to observe the behaviour of plant cells in such artificial surroundings. How far the situation has dramatically changed since then is apparent in this book under review.

There can hardly be any plant science laboratory left which does not exploit tissue culture in some phase or other of their research. That this methodology handbook, first produced in 1975, is already in its third edition attests to the growing popularity of the subject. The horticultural importance of *in vitro* cloning of plants is illustrated in a table at the back of the book, which shows that 36 million plants were so produced in the Netherlands alone during 1985 and the following year saw a 20% increase in this figure.

The most attractive feature of this handbook are the colour plates on the cover which show various stages in the culture of plant cells in glass. Within the book there are also many excellent back and white illustrations and figures. As cook books go, it is probably as complete as any and it discusses all the basic techniques as well as most of the applications. Scientifically, it is not above criticism and the references at the end are given in a very sloppy style, without authors initials, titles of papers or co-workers names. However, anyone starting out on the journey to produce plants in cell culture should find this a useful practical guide.

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