

Phytochemistry of Plants Used in Traditional Medicine, edited by K. HOSTETTMANN, R. MARSTON, M. MAILLARD and M. HAMBURGER, *Proceedings of the Phytochemical Society of Europe, No. 37*, Clarendon Press, Oxford, 1995, 408 pp., £75. ISBN 0-19-857775-3.

This Symposium volume stems from a meeting held in Lausanne, Switzerland, in September 1993, which was attended by 300 participants from 40 countries. The title does not do complete justice to the contents within, since besides the phytochemistry much space is given to the biological properties of the phytochemicals which feature in every chapter. The range of secondary metabolites covered is considerable and many interesting phenolics, terpenoids, polyketides and alkaloids receive attention in these pages. The plant floras investigated vary from Papua New Guinea

and Bolivia through Ethiopia, Pakistan, Jordan and Sri Lanka to Panama and Indonesia.

The contributors are all distinguished in their respective fields and provide well written chapters. There is one contribution on non-cariogenic sweeteners by A. D. Kinghorn, but the remaining papers are concerned with the discovery of new plant drugs. Some emphasis is given to the treatment of tropical diseases such as sickle-cell anaemia (A. Sofowora) and malaria (J. D. Phillipson). An excellent review of ethnobotany by P. A. Cox opens the book and there are also contributions on anti-inflammatory drugs, bioactive polymers and anti-tumour agents. In all, this is an excellent collection of essays on medicinal plant chemistry and it deserves a wide circulation.

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Chemotaxonomie der Pflanzen. Volume XIb-1, Leguminosae, Part 2, by R. HEGNAUER and M. HEGNAUER, Birkhäuser, Basle, 1996, 512 pp., £244. ISBN 3-7643-5165-9.

The Mimosoideae subfamily are trees and shrubs mainly growing in the tropics and subtropics, with some concentration in the Southern hemisphere. The Caesalpinioideae is also mainly tropical, but does have some temperate members (e.g. the Judas tree, *Cercis siliquastrum*). Both subfamilies are economically valuable with plants used as fodder, for timber, in medicine (*Cassia*) for their oils (e.g. *Acacia*), tannins and dyes. Chemically, these are almost as rich in secondary metabolites as the Papilionoideae and many chemicals (e.g. haematoxylin, brazilin) are unique to these plants. It is not surprising, therefore that the Hegnauers have had to produce a separate volume to cover the phytochemistry and chemotaxonomy of these two subfamilies. This second volume follows the

earlier one (XIa) on general aspects of Leguminosae phytochemistry and will be succeeded by a third (XIb-2) which will deal with the numerous papilionoid species.

There is a veritable wealth of interesting phytochemical information in these pages, which is laid out carefully in a chemotaxonomic setting. There are many illustrative formulae and tables; the references are comprehensive and include titles and notes on their contents. It is well up to the high standard Professor Hegnauer has set himself for inclusiveness and accuracy. Furthermore, it is very much up-to-date and has an addendum covering 1995 references. We must be grateful to the authors for their indefatigable energy in preparing this monumental work and we look forward soon to seeing the final volume in the series on the papilionoids.

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Plant Drug Analysis, by H. WAGNER and S. BLADT, 2nd edition, Springer, Berlin, 1996, 384 pp. and 230 figures in colour, £129.50. ISBN 3-540-88676-8.

As the authors state in the preface: "in spite of other

available techniques, TLC still remains a most useful, quick, effective and low-cost method for the separation and identification of complex mixtures of plant constituents". They make this point abundantly clear here through the presentation of colour plates

of TLC separations, with marker compounds, of some 230 medicinal plant extracts. The book in fact is a thin layer chromatography atlas and is a veritable *tour-de-force* in this analytical technique. It is an essential reference for anyone needing to check the quality (and absence of adulteration) of common drug preparations.

There is a useful text, to go with the splendid colour pictures, which includes a description of the key chemical constituents of each and every plant extract and also shows the chemical formulae in many cases.

Basic information on TLC techniques, absorbents, solvents and spray reagents is also provided. Although primarily intended for use in pharmacognosy, this book will be of value to any phytochemist concerned in separating the secondary metabolites of plant extracts. In spite of its hefty price, it is well worth adding this beautifully illustrated atlas to the laboratory shelf.

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Medicinal and Aromatic Plants, Volume IX: edited by Y. P. S. BAJAJ, Volume 37 in the *Biotechnology in Agriculture and Forestry* Series, Springer, Berlin, 1996, 415 pp., DM 428. ISBN 3-540-60597-5.

The ninth volume in this popular series on the phytochemistry of medicinal plants contains 24 essays, describing the experimental conditions needed to induce secondary product synthesis in the tissue or cell culture of a variety of higher plants. There is some concentration on pigment synthesis, with chapters on anthocyanins (*Aralia cordata*, *Petunia hybrida* and *Populus* spp.), betalains (*Portulaca* spp.), naphthoquinones (*Onosma paniculatum*) and blue colours (*Clerodendron trichotomum*, *Mentha* spp.). There are several chapters on the production of such phenolics as tannins (*Liquidambar*), flavonoids (*Cephalocereus*) and coumarins (*Coronilla*). There is an interesting chapter on attempted colchicine production in the

novel source *Sandersonia aurentiaca*, but sadly the yields from culture do not yet match those of the whole plant or those from the classical source, *Colchicum*. Another novel discovery (to me) reported in a chapter on the culture of liverwort (*Marchantia polymorpha*) cells is that suspension cultures produce unexpectedly large amounts of arachidonic and eicosapentaenoic acids.

The rest of the book deals with various terpenoids and ranges from monoterpenes (*Mentha*) through diterpenoids (*Scoparia*) to phytosterols (*Agave*), ecdysteroids (*Serratula*) and brassinosteroids (*Catharanthus*) and there is even a chapter on rubber. There is therefore likely to be something of interest for nearly every phytochemist, and this book can be recommended as a useful addition to any well stocked plant science library.

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Light as an Energy Source and Information Carrier in Plant Physiology, edited by R. C. JENNINGS, G. ZUCHELLI, F. GHETTI and G. COLOMBETTI, Plenum Press (NATO ANSI Symposium Series), 313 pp., 1996, \$95. ISBN 0-306-45383-5.

What a pity that the lively discussion that follows many interesting contributions at international scientific conferences so rarely finds its way into the proceedings these days. This worthy and densely packed (313 pages of 10 pt, closely spaced, and by no means copiously illustrated) volume of conference proceedings would surely have benefitted from this

humanizing element. The proceedings, from a NATO Advanced Study Institute held in Volterra, Italy, in 1994 cover (mostly) photobiological aspects of photosynthesis and of photomorphogenesis. No attempt is made by the editors to divide the book into sections and the chapters vary greatly in style of presentation and in the level at which they are aimed. In general, the photosynthesis chapters are very detailed and cover rather narrow fields, the other chapters being broader in coverage.

Though the idea of combining the photobiology of these two phenomena is a good one in theory, there is in practice rather little overlap between the two fields.