

Book Reviews

J. Nat. Prod., **1992**, 55 (6), 830-831 • DOI:
10.1021/np50084a024 • Publication Date (Web): 01 July 2004

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Journal of Natural Products is published by the American
Chemical Society, 1155 Sixteenth Street N.W., Washington,
DC 20036

BOOK REVIEWS

Ecological Chemistry and Biochemistry of Plant Terpenoids. Ed. by J.B. HARBORNE and F.A. TOMAS-BARBERRAN. Proceedings of the Phytochemical Society of Europe-31, Oxford University Press, 200 Madison Avenue, New York, NY 10016. 1991. xvi + 439 pp. 15.5 × 23 cm (hard cover). \$115.00. ISBN 0-19-857739-7.

This volume is based on a symposium held at Murcia, Spain, 13-15 September, 1989, and contains, in four major sections, sixteen chapters by an international group of authors. It is the fourth volume on the biochemistry, functions, and biological activity of the plant terpenoids to have been published to date under the auspices of the Phytochemical Society of Europe, and it documents recent developments in this area until the end of 1989. The book makes no attempt to be comprehensive in its coverage, but it does contain a broad range of topics which should be of outstanding interest to all phytochemists whose work in some way touches upon the terpenoids.

In the first part of the book (Chemistry and Chemotaxonomy) are chapters on conifer di- and triterpenoids (A. San Feliciano and J.-L. Lopez), terpenoids of marine plants (S. De Rosa), *Salvia* diterpenoids (J.G. Luis), and essential oils of Mediterranean plants (J.D. Ross and C. Sombrero). The chapter on marine terpenoids provides a systematic overview of the occurrence of terpenoids within taxonomic groups of increasing complexity, and it is apparent that the Euphyceae will afford many novel structural classes of isoprenoids in the future. The second section of the book (Biochemistry, Biosynthesis and Physiology) is constituted of chapters on terpenoid production in plant cell cultures (B.V. Charlwood and K.A. Charlwood), the biosynthesis and distribution of iridoids (S.R. Jensen), triterpenoid phytoalexins (D.L. Threlfall and I.M. Whitehead), and the inhibition of phytosterol biosynthesis (L.J. Goad). In the last of these, it is pointed out that there is increasing evidence that plant sterols are actively involved in plant cell growth and that this phenomenon may be investigated by sterol biosynthesis inhibitors such as mevinolin and naf-tifine. The third section (Pharmacology and Toxicology) contains chapters on the pharmacology of diterpenoids (M.J. Alcaraz and J.L. Ríos) and on molluscicidal saponins (A. Marston and K. Hostettmann). Alcaraz and Ríos deserve a lot of credit for tackling such a diffuse topic, and they cover diterpenoids with analgesic, anti-inflammatory, antineoplastic, insecticidal, skin-irritant, and tumor-promoting activities. In the section on antineoplastic activity, several compounds are included that exhibit insignificant activities when tested against various cancer cell lines, and on the other hand there is scant mention of taxol, which is currently the most promising drug candidate of all terpenoids. The final section of the volume (Ecological Biochemistry) contains contributions on monoterpeneoid chemical ecology (G. Bergström), lower terpenoids as natural insect control agents (J.A. Pickett), the sequestration of iridoids by insects (H. Rimpler), the structural types and distribution of plant ecysteroids and their interaction with insects (F. Camps), plant terpenoids as allelopathic agents, with a particular focus on scrub plants growing in Florida (N.H. Fischer), and an excellent summary on recent advances on the ecological chemistry of monoterpeneoids, sesquiterpenoids, diterpenoids, and triterpenoids (inclusive of sections on limonoids and cardenolides) (J.B. Harborne). The book is provided with a thoughtful Introduction, and there are comprehensive Organism and Subject Indexes. Overall, the book is relatively free from typographical errors, and mistakes in the chemical structures seem to be very few indeed.

There is a plethora of useful information in *Ecological Chemistry and Biochemistry of Plant Terpenoids*, not least of which is an estimate in the last chapter that in having between 15,000 and 20,000 structurally defined representatives, the terpenoids are the most numerous group of plant products and outnumber both the alkaloids (about 10,000) and the phenolics, inclusive of the flavonoids (about 8000). Given the extensive range of biological activities reported in this book, this begs the question as to why there is not yet in existence a series of volumes to review regularly the biology and chemistry of the terpenoids, analogous to *The Alkaloids: Chemistry and Pharmacology* (currently edited by G.A. Cordell) and *Alkaloids: Chemistry and Biological Perspectives* (edited by S.W. Pelletier).

Since the various chapters of this book are provided with full titles, and the references are predominantly from the late 1980's, it will be a useful literature resource for graduate courses covering the terpenoids. This volume is highly recommended for institutional purchase, but its exorbitant price will probably preclude its individual purchase by many potentially interested readers. Perhaps the Phytochemical Society of Europe should consider producing more affordable softback versions of their future symposium proceedings, in order to reach a wider readership.

Chemotaxonomie der Pflanzen, Vol. X. MINIE and ROBERT HEGNAUER. Birkhäuser Verlag, AG, Klosterberg 23, CH-1010 Basel, Switzerland. 1992. 847 pp. 16.5 × 24 cm. SFR 598.00. ISBN 3-7643-2578-X.

The descriptive portion of the Hegnauer series *Chemotaxonomie der Pflanzen* concluded with the issuance of Volume VIII in 1989 and Volume IX in 1990 [*J. Nat. Prod.*, **53**, 766 (1990); **54**, 1695 (1991)]. This final volume provides comprehensive indexes to the series, and consists of three separate indexes. Index A (363 pp.) is a taxonomic index; Index B (93 pp.) is a chemotaxonomic index, listing plant families containing various classes of natural products, such as coumestans, quinones, or waxes; Index C (354 pp.) is a subject index containing primarily chemical substance entries.

This index will enhance the value of the Hegnauer series, and libraries and individuals that own the series will want to purchase it as a valuable addition.

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