

BOOK REVIEWS

Chemistry of Natural Products—VIII edited by T R GOVINDACHARI Butterworth, London, 1973 177 pp £5 25

Chemistry in Evolution and Systematics edited by T SWAIN Butterworth, London, 1973 672 pp £9 00

THESE two volumes contain plenary lectures delivered at two IUPAC Symposia held respectively in Delhi, India in February 1972 and in Strasbourg, France in July 1972 and both are potentially of interest to phytochemical readers

The first volume, from the Indian symposium, is a heterogeneous collection of short essays provided by natural products chemists from the U S A (R B Woodward), France (G Ourisson), U S S R (N K Kochetkov), Switzerland (H Schmid), Australia (A J Birch), Japan (H Umezawa and S Shibata) and the U K (D H R Barton and E R H Jones). Curiously, there are no articles from the host country, in spite of the many significant contributions to natural product work by Indian chemists. The quality and quantity of the written record is very variable. Woodward's account of the last stages in the total synthesis of vitamin B₁₂, for example, is a direct verbatim transcript from his lecture. By contrast, Birch's thought provoking chapter on "Biosynthesis and Chemical Phylogeny" is more properly written up and documented and is therefore of much broader interest. Many of the other contributions are so short that they cannot do more than provide a historical record of the lectures that were delivered at the meeting. Ourisson's contribution, for example, with the intriguing title "Samsara of Organic Carbon" is in the end disappointing since it is only a brief 8 page summary of what was obviously a most stimulating lecture.

The second volume, from the Strasbourg meeting, is a much more useful reference, since although containing as many as sixteen contributions, all are united in having a common theme, the influence of chemistry on problems of evolution and systematics in living organisms. It also bears the marks of an experienced and skilful editor, since each chapter is eminently readable and is followed by an extensive list of references. Furthermore, there is an index, albeit a very short one, a feature which is completely lacking in the Indian symposium volume.

The contributions in this Strasbourg volume range from chemosystematics (V H Heywood), the chemistry of geographical races (T Mabry, E von Rudloff and E Zavarin) and comparative biosynthesis (H Grisebach, Z Vanek and R Rhomas) through phytochemical ecology (D H Jansen) to evolution of macromolecules (D Boulter, D O Hall and V E Loening) and fossil chemistry (G Eglinton, M Blumer and W K Seifert). It would be invidious perhaps to select out particular contributions for special mention from what is an excellent collection of related articles. However, it is worth pointing out that most are general reviews, covering a wide field of scientific endeavour, rather than specialized reports from individual laboratories. The chapter by Mabry, for instance, brings together for the first time a fascinating array of biological situations in which chemical variation

in micromolecules is shown to be correlated with geography and/or ecology. Equally valuable are the chapters on the evolution of macromolecules since these cover very recent results from the amino acid sequencing of cytochrome-*c* and ferredoxin and from measuring base ratios in ribosomal RNA. Perhaps the most important article for organic chemists to read is Heywood's critical appraisal of the place that chemistry can and could play in plant systematics. A comparable account of the role of chemistry in animal systematics would have been valuable but unfortunately this was not provided for by the Symposium Organizers.

While one would like to recommend both volumes for purchase by phytochemists, it is necessary to point out the excessively high prices charged even by today's standards and the dull and uninspiring format chosen for them. The Strasbourg volume, more cheaply produced and with a more interesting dustjacket, could well have become and deserves to have become, a best seller.

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Biology and Chemistry of the Umbelliferae. Edited by V. H. HEYWOOD. Published for the Linnean Society of London by Academic Press, London and New York. 1971. 438 pp. £8.50.

It MAY seem strange to the reader to find a review of a book which is based on papers presented at a Symposium which was held three years ago. However, there are some volumes which like wine mature with age. This book is certainly one of them and although it was well praised when it appeared two years ago, it is worthwhile reiterating its value to phytochemists today for it contains a complete survey of the various approaches which have been made to the classification of a single family, the Umbelliferae. The whole gamut of classical palynological, anatomical, cytological, chemical, biochemical and ethnobotanical data is covered in this book. As such, therefore, it forms, in my opinion, a landmark in the history of taxonomic studies. Many books have covered symposia in which general approaches of the application of chemistry and other disciplines to taxonomic problems have been outlined but none of these has dealt in detail with problems at the family level. It is likely, therefore, that their impact on classical taxonomists has been relatively small and, conversely, the problems of classification in the real sense have never been properly delineated to scientists outside the Herbarium. The Symposium from which the volume arose was attended by the majority of the world's leading specialists in the field, and this is obvious when one looks at the overall scope of the problems presented. The book is profusely illustrated with diagrams, scanning electron micrographs and numerous tables which have never before been available under the cover of a single volume. It is to be hoped that those readers interested in chemotaxonomy, phytochemistry and, indeed, all other aspects of the coverage of this journal will persuade their departmental libraries to buy this book, if they do not obtain a copy for their own use. After two years of constant reference to it in my own literature surveys I have found it invaluable, and it is only marred by the fact that the material is organized in the very rigid Linnean Society Journal format. This trivial drawback apart, I certainly recommend this well edited volume most strongly.

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