

## BOOK REVIEWS

**Blue Light Effects in Biological Systems:** edited by H. SENER. Springer, Berlin. 1985. \$55, DM142.

Question: What do Jaws, Lace, Dynasty, Superman and the Blue Light Syndrome have in common? Answer: they have all proved attractive enough for their sponsors to have supported the publication of a sequel. Indeed it sometimes seems that a suffix 'II' is becoming the automatic response to a successful idea. Like many such sequels 'Blue Light II', actually entitled 'Blue Light Effects in Biological Systems', while interesting enough in its own right, proves something of a disappointment after its illustrious predecessor.

'The Blue Light Syndrome' was published as the proceedings of a conference held in 1980 to discuss the effects of blue light on plants and micro-organisms. That publication was both timely and interesting, and contained a judicious mixture of much-needed reviews of the then-emerging field, with a number of research reports. The result was a volume that has proved indispensable to everyone in the field.

Success breeds success and, as the editor, Professor Horst Senger, reports in his introduction the 'Blue Light Family' has grown considerably in four years. This growth has led to the present rather unwieldy publication, based on a second conference held in Marburg in 1984. In this volume the review content has been unfortunately

reduced to minimal proportions leaving us with some 56 original but unrefereed papers. Though the editor has made a gallant attempt to collect these together under umbrella chapter headings, even he admits that "the grouping of different aspects of the papers into these chapters has not always been obvious". He has my sympathy.

The randomness of the chapter material is unfortunately matched by much variability in presentation. Thus, whilst some papers contain extensive 'Materials & Methods' sections (most useful), others omit experimental detail altogether. There is similar inconsistency in the bibliographies, as well as (inevitably) variation in overall quality and interest. I have had this volume on my shelf now for some months (sorry Editor!) and must admit to finding it a good deal more dispensable than its progenitor. Even so, it has to be said that the present volume has a sizeable niche to itself. There is no remotely comparable single volume. Those researching in the blue light field have much to thank Professor Senger for: if the growth of the 'Blue Light Family' has caused editorial problems, he can surely take pleasure in the fact that the problems are very much of his own making.

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**The Alkaloids, Volume 26:** edited by ARNOLD BROSSL. Academic Press, Orlando, Florida, 1985, 401 pp.

This compendium volume of seven chapters caters for a variety of phytochemical tastes. There is, for example, something for the chemotaxonomist in the chapter by D. B. Maclean on *Lycopodium* alkaloids. These idiosyncratic molecules with their distinctive ring systems are found widely within the clubmosses and although their ascertainment is still limited, the distribution patterns usefully support modern systematic treatments of these primitive ferns. Chemotaxonomy is less in evidence in the review of simple indoles by H. P. Husson, since apart from the carbazoles which are confined to the Rutaceae, their distribution ranges over 20 plant families and they are even found in several microbial genera. Activity in this area in recent years has largely been a matter of structural elucidation and synthesis. The benzophenanthridine alkaloids, by contrast, are more limited in their natural occurrence, being restricted to the Caprifoliaceae, Fumariaceae, Meliaceae, Papaveraceae and Rutaceae. In

reviewing them, V. Simanek concentrates on their occurrence, chemistry and biological activities. A number have been tested for anticancer and anti-inflammatory properties, but none has yet apparently reached the stage of practical application.

Sulphur-containing alkaloids have not been reviewed previously in this series, so that J. T. Wrobel's chapter is something of a landmark. There is something especially fascinating about organic constituents with both nitrogen and sulphur and they are found in the most diverse natural sources. I had not realised, for example, that the fungal genus *Hyalodendron* produces a fungitoxic sulphur alkaloid hyalodendrin which has been used to treat Dutch Elm disease. This seems to be the case of one fungus attacking another. Many of the sulphur-containing alkaloids are indeed of microbial origin, the most notorious being the highly dangerous amatoxins of *Amanita phalloides*. The amatoxins can also be classified as peptides, and there is a separate chapter on such alkaloids by U. Schmidt, A. Lieberknecht and E. Haslinger. These authors describe recently reported higher plant cyclic

peptides and the linear peptides, with a brominated tryptophan moiety, of the marine sponge *Cliona celata*.

Toxicity and chemical ecology come to the fore in the remaining two contributions in this catch-all volume. Pyrrolizidine alkaloids are well known for their hepatotoxicity in mammals and their pheromonal involvement in plant-Lepidopteran interactions. They have been much reviewed in recent years, for example by D. J. Robins in 'Natural Products Reports' and by M. Boppre in the latest issue of 'Naturwissenschaften'. This review by J. T. Wrobel covers the 1981-1984 literature and dwells especially on synthetic and biosynthetic pathways. Finally,

there is an extensive account of pyridines and piperidines by G. M. Strunz and J. A. Findlay. Tobacco alkaloids are a major topic but there is also mention of legume seed piperidine alkaloids, such as swainsonine, which are sugar analogues and have the distinctive property of inhibiting animal glycosidases. They are being actively investigated by several research groups, especially by the biochemists at Kew, and no doubt they will deserve a chapter to themselves in a later volume in this excellent series.

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