

BOOK REVIEWS

Annual Index of the Reports on Plant Chemistry in 1971: edited by H. AGETA, T. INOUE, T. KIMURA, S. NATORI and Y. SAIKI. Hirokawa Publishing Co., Tokyo, 1979. 384 pp.

Those who know this series of publications as the Kariyone Index will be sad to hear that the founder of the series died in June 1977. However, his team of five editors are carrying on the task he set himself of producing a complete index of plant chemistry set out on a taxonomic basis, year by year. The present volume covers 1971 so that there is still a backlog to be overcome before this

series can compete on equal terms with other available abstracting services. As it is, we can but be grateful to have available a thorough record of new and known chemical products discovered variously throughout the plant kingdom in the course of 1971. The Index will be of special significance to chemotaxonomists, but all phytochemists will find much of interest in this excellent compilation.

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Plant Metabolism: by GERHARD RICHTER. Croom Helm, London, 1978. 475 pp. £11.95.

This is a translation by D. J. Williams of a successful German textbook, which has passed through three editions within seven years. It deals with the physiology and biochemistry of primary metabolism in plants and seems to be aimed at University botany students, who have no substantial background in chemistry or physics. A good deal of space is given over to basic information on the structure of amino acids, proteins, lipids and carbohydrates, the principles of chromatography and manometry, the nature of enzymes and so on. In addition, basic biochemistry is treated, with separate sections on photosynthesis, biological oxidation, water transport, cell metabolism and metabolic regulation.

Probably the main criticism which University teachers in this country will have is that it attempts to cover too much ground in too little space. It is thus inevitably rather superficial. Its high price in comparison with comparable English or U.S. texts may also militate against its wide adoption outside Germany as a student text. On the credit side, it must be pointed out that it is neatly produced with clear diagrams, figures and formulae, and it has an unusually complete index. The text is fluent. Finally, its pocket book size should make it ideal for last minute cramming.

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Atractyloside—Chemistry, Biochemistry and Toxicology: edited by R. SANTI and S. LUCIANI. Piccin Medical Books, Padua, 1978. 136 pp. \$12.

Atractyloside is the toxic principle of the Mediterranean thistle, *Atractylis gummifera*, a plant known to the Persians as 'Plunderer of Life' because of its highly poisonous nature. Atractyloside is a well known substance because of its inhibitory effects (without uncoupling) on oxidative phosphorylation and on ADP transport in mitochondria. It is widely used as a tool by biochemists studying these

basic cellular processes. Its activity is undoubtedly related to its unusual structure; although a tetracyclic diterpene, it has a glucose attachment which is in turn substituted by two sulphate groups and by isovaleric acid. In this slim volume, we have a detailed account of the chemistry and pharmacology of this interesting molecule.

Perhaps one justification for the appearance of this book at the present time is the fact that three other plants besides *Atractylis* have been found to contain atractyloside or related structures. Indeed, discerning readers of *Phytochemistry* will already be aware of this,

since two of these reports appeared in the pages of this journal. The most unexpected new source is coffee bean (Rubiaceae), the other two reports being from other members of the Compositae, the family to which *Atractylis* belongs. It is a pity the editors did not commission a chapter on methods of detecting atractyloside in plant tissues, since a wider survey of its natural occurrence both within the Compositae and in neighbouring

families would seem to be called for. Almost everything else that is known about atractyloside is included in this book, which should prove a useful source of information to anyone working with this remarkably potent inhibitor.

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