

BOOK REVIEW

DETOXICATION MECHANISMS. Second Edition. By R. Tecwyn Williams
Pp. x + 796 (including Index). Chapman and Hall, Ltd., London, 1959.
£6 6s.

Readers unfamiliar with Professor Williams first edition should not be misled by the title. The sub-title "The Metabolism and Detoxication of Drugs, Toxic Substances and Other Organic Compounds" reveals much more the scope of the book. It should be added that under the term "Metabolism" the author includes work with many species of animal, some work with insects, and also experiments on isolated organs, tissue preparations, cell components and enzyme systems; microbial metabolism is excluded. The second edition coming twelve years after the first is two and a half times as big and contains about 2,600 references. This increase in size demonstrates the rapidity with which this branch of knowledge is expanding.

In plan the book is based on chemical structure. Separate chapters deal with such topics as "The Metabolism of Phenols," and "The Metabolism of Dyestuffs and Other Colouring Matters." The reviewer feels that Professor Williams uses the term "Mechanism" as a description of the chemical changes undergone rather than the biochemical processes by which these are brought about. The biochemistry is dealt with, but somewhat incidentally to the chemistry. Thus mercapturic acid formation occupies a section in the chapter on the metabolism of halogenated aromatic hydrocarbons. Since this form of conjugation also occurs with hydrocarbons the arrangement involves some fragmentation of information on related processes.

The most impressive features of this book are its meticulous completeness and the masterly way in which a most intractable mass of heterogeneous and sometimes conflicting information has been tamed and reduced to order. Yet it remains easily readable. Errors are surprisingly few and the book reflects a great deal of care for detail and accuracy. Each compound receives separate consideration and the author allows himself reasonable latitude to mention its uses and special features of its toxicity or pharmacological effects. It is useful to find that for most of the acids mentioned pKa values are given; these are often difficult to find in the literature; there is no systematic quoting of pK values for bases. In discussing drugs the author has used proprietary names, and free names indiscriminately sometimes with capitals and sometimes without. Since nomenclature of drugs is already very confusing it would be preferable to adopt the convention of using free names without capitals wherever possible; where proprietary names are unavoidable they should have a capital and inverted commas. Some factors such as the time course of metabolic processes, individual variations between animals and the influence of protein binding on the course of metabolism receive little mention.

The use of this book will be essentially practical. It will provide a guide to anyone who wishes to know how a chemical compound can be expected to behave in the animal body. It is unique in its scope and is an indispensable reference work for those interested in foodstuff and pharmaceutical chemistry and in chemical toxicology.

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