

## Mycotoxins

*Toxicology, Biochemistry and Pathology of Mycotoxins.* Edited by K. Uraguchi and M. Yamazaki. Pp. 288. (Halsted/Wiley: New York and London; Kodansha: Tokyo, 1978.) £19.50.

"THE concept of mycotoxins is not yet widely appreciated" is a key statement in the preface to this book. To most laymen the notion that common moulds may produce potent animal toxins may be novel, but many industrial organisations involved in the production of human and animal foodstuffs are becoming well aware of mycotoxins. As is to be expected with a new branch of science which just happens to embrace one of the most carcinogenic substances, opinions vary from those who would attribute to mycotoxins several human and animal syndromes of unknown aetiology, to those who may have good commercial reasons to claim that there is little evidence that these substances have ever done any harm, particularly to humans.

The literature on the mycology, chemistry, biochemistry and pathology of mycotoxins has, in the past fifteen years or so, been evidence of one of the fastest growing facets of biological science. The first comprehensive review was included in the 1971-72 Academic Press series *The Microbial Toxins*. In the past year Marcel Dekker have published their three-volume *Encyclopedic Handbook* which, although it took several years to produce, is perhaps the most comprehensive current text. The present book is a useful and interesting addition to the review literature. It is unique in that it is written entirely by eight Japanese scientists, all of whom have published in the areas they review. It is natural, therefore, that there should be a thread of national emphasis through the book, in which the subject is treated mainly in the context of foodstuffs.

Western literature has tended to ascribe the origin of the recent wave of mycotoxin research to the 'Turkey X' syndrome in England during 1960. It is therefore salutary that the introduction to this book should emphasise the precedence of Japanese research into an epidemic of human acute cardiac beriberi in Japan between the two world wars. These studies led to the isolation of the yellowed rice toxins in the 1940s, though too late for direct verification of their involvement in the aetiology of cardiac beriberi—the epidemic by then having passed away, apparently, for good.

A notable feature of this book is the high standard of readability of the text. Several 1976 references are included, implying that the book can

claim to number among its 1,000 references most of the relevant studies available for review. It would be possible to instance a number of minor errors and omissions in the text but since mycotoxicology is expanding so quickly there is much to commend fairly rapid publication of a review-type book before it becomes too outdated.

The first chapter lists important mycotoxin-producing fungi and their significance concerning foodstuffs. The second chapter on the chemistry of mycotoxins is subdivided according to biosynthetic features, a treatment reminiscent of W. B. Turner's important 1971 book on fungal metabolites. The next three chapters are devoted to toxicology, the main topic of the book. There are sections on general and comparative toxicology. The fate, metabolism and mutagenicity of mycotoxins are discussed and cellular alterations, histopathology and carcinogenicity are liberally illustrated. As the chronic carcinogenic properties

of certain mycotoxins, notably aflatoxin, are of particular relevance to humans, the book concludes with a short chapter on traditional Japanese fermented foods, home-grown rice and imported peanuts and peanut products. Traditional foods are given a clean bill of health as the selection over many centuries of *Aspergillus* 'koji-moulds' for the preparation of miso, sake and soy sauce seems not to have included any capacity for aflatoxin biosynthesis. Further, the absence of aflatoxin from mouldy rice, otherwise contaminated with ochratoxin A and the aflatoxin precursor, sterigmatocystin, suggests that aflatoxin producing moulds are not indigenous to the relatively high latitudes in which Japan is situated.

This book is to be commended as providing a most useful oriental view of mycotoxicology.

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## Physiology and pathology of the neutrophil

*The Neutrophil: Function and Clinical Disorders.* By S. J. Klebanoff and R. A. Clark. Pp. 810. (Elsevier/North Holland: Amsterdam, 1978.) \$148; Dfl.333.

IN recent years immunologists have focused their attention on macrophages and lymphocytes and minimised the importance of the neutrophil as a component of the cell-mediated defence system. This excellent book should help to redress the balance by stimulating interest in this fascinating cell by supplying a comprehensive account of contemporary knowledge of its physiology and pathology and a thorough citation of the literature.

In these days of specialisation a work as comprehensive as this, encompassing over 800 pages and possibly five times as many references, is generally tackled by a team of expert contributors. One of the strengths of this book is that the authors do not have vested interests in most of the contents and as a result the facts are presented in an unbiased manner without any attempt to influence readers' interpretation of the data. This has resulted in a highly informative exposition of current concepts that are expressed clearly and concisely. The mass of information that has been assembled is more suitable as a source

of reference than as an easily readable introduction to this cell.

A wide range of topics of cell biology and pathology have been systematically covered, including both normal and disordered structure, movement, phagocytosis, degranulation and antimicrobial systems of the cell as an entity, and its interaction as a component of the inflammatory process as a whole. The discussion of clinical disorders of neutrophil function covers the well known primary cellular defects such as Chronic Granulomatous Disease, myeloperoxidase deficiency and the Chediak-Higashi syndrome in addition to those abnormalities of function which occur as a consequence of abnormal humoral immunity or in association with systemic disease. There is little direct description of laboratory methodology, although this would be readily available from the literature references; and the rapidly expanding subject of leukaemia and granulocyte transfusion is hardly touched upon.

The book is well produced, with numerous figures and diagrams. The index is extensive and comprehensive, as befits a reference volume. It will be of use to clinicians in the fields of infectious diseases, immunology, haematology and rheumatology, and an essential addition to the library of experimental biologists, particularly those with an interest in host defence in general and in the neutrophil in particular.

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