

BOOK REVIEWS

Mycotoxins: Formation, Analysis and Significance: by J. E. SMITH and M. O. MOSS. John Wiley & Sons, Chichester, 1985. 148 pp. £14.95.

This book is a model of its kind—a monograph which admirably succeeds in its aim of providing a modern, concise and readable account of the mycotoxins. These particular natural products present a potential threat to both Man and his domestic animals in their ability to contaminate stored food products. The food supplies of the third world are most at risk but even the mountains of cereal grain of the EEC can become infected. Aflatoxin, for example, is regularly detected in maize throughout the world and there was serious contamination of the US maize harvest as recently as 1983.

The two authors deal in turn with the toxigenic fungi, the chemistry and metabolism of the toxins, their effects on animals and in Man, their natural occurrence, analysis

and control. The book effectively bridges the disparate disciplines of microbiology, phytochemistry, agriculture, medicine and food science. The number of compounds involved is still relatively small, the aflatoxins being the most widely studied, but new ones are being discovered all the time—the lolitrems, neurotoxic ascomycete metabolites responsible for perennial ryegrass staggers disease, being one of the latest group. In summary, this book provides an invaluable synthesis of modern progress in both pure and applied aspects of the control of these notorious toxic agents. It is well referenced with many tables, is completely up-to-date and represents excellent value by today's prices; it can be thoroughly recommended.

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Higher Plant Cell Respiration: edited by R. DOUCE and D. A. DAY. *Encyclopedia of Plant Physiology*, New Series, Volume 18. Springer, Berlin, 1985. 522 pp. DM 298.

Since respiratory measurements on plant tissues by Blackman, Thomas, James and others provided the foundation upon which modern plant physiology has developed, it is a little surprising that we have had to wait until volume 18 before this subject has been tackled in this *Encyclopaedic* treatment. Because the mitochondria provide the site of cell respiration, this volume is really a book about these important organelles. After an opening chapter by M. Neuburger on the isolation and purification of intact mitochondria, Quetier and his co-workers describe what has recently been discovered about the mitochondrial genome and its coding genes. An account of mitochondrial lipids by that expert lipid biochemist J. L. Harwood is followed by one on the cytochromes by G. Ducet; the nature of the outer membrane is then detailed by C. A. Mannella.

Oxidative phosphorylation and the oxidation of NADPH in the mitochondria are discussed by A. L.

Moore and P. R. Rich and by J. M. Palmer and J. A. Ward, respectively. The cyanide-resistant pathway—still a considerable problem to explain—is described by C. Lance and the various hypotheses about this alternative pathway are considered in turn. A chapter on membrane transport by J. B. Hanson is followed by one on the TCA cycle by J. T. Wiskich and I. B. Dry. Other metabolic activities of the mitochondria are dealt with by P. Gardeström and G. E. Edwards (photosynthetic), by M. Stitt and M. Steup (starch and sucrose degradation) and by T. ap Rees (glycolysis and PPP).

Finally, H. Lambers brilliantly draws the various threads together by considering respiration as an integrated part of the metabolism of the whole plant. There is some overlap with chapters in earlier volumes, but overall this book is complementary to what has gone before and it is indeed an extremely worthy addition to this outstanding series.

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