Book Review

M. Breitenbach, R. Crameri, and S. B. Lehrer. *Fungal Allergy and Pathogenicity*, Karger Publishers, Farmington, CT, USA, 2002. 310 pp., US $ 83.50.

Without question the relationship between fungi and humans is a complex and growing concern. The incidence and prevalence of fungus-induced pathologies is highlighted in many clinical settings, and the advent of even more potent antifungal therapies is highly anticipated. Also highly anticipated are the many fungal genome projects underway that will yield new targets for anti-fungal therapies directed against *Candida albicans*, *Cryptococcus neoformans*, and *Aspergillus fumigatus*. It is clearly the best of times and the worst of times in the areas of fungal allergy and pathogenicity. As this book highlights, there are a number of excellent scientists who are devoting considerable time and effort to the study of allergenic and pathogenic fungi. However, in our unsettled modern era there is the growing realization that bio-defense may need to take into account the mycotoxins generated by many forms of filamentous fungi. In addition, the ever-increasing urbanization of human populations worldwide inevitably brings fungi and humans into closer proximity and greater conflict. This volume brings together the research of an eclectic group of environmental scientists, agriculturists, allergists, geneticists, dermatologists, and mycologists. Detailed descriptions of the isolation and cloning of major allergens from *Cladosporium*, *Alternaria*, and *Aspergillus* provided in this book highlight the sophisticated molecular approaches that have advanced not only diagnostic but also immunotherapeutic approaches to fungus-related diseases. The array of virulence mechanisms employed by *Candida albicans* is described in detail in a chapter entitled 'Secreted Proteinases and other Virulence Mechanisms of *Candida albicans*', but this focused chapter is followed by another that contains a rather diffuse collection of clinical observations pertaining to the massive field of cutaneous mycology. Bhatnagar, Yu, and Ehrlich provided a fascinating mix of classification, history, economics and chemistry in the chapter entitled 'Toxins of Filamentous Fungi'. This chapter is a must read. On the surface, it is a daunting task to bring this many perspectives together in one volume but it is surprising how well the sum of each part yields a volume that is clear and concise. Obviously, the order in which the authors present their expertise in this volume is open to debate; this reviewer would have appreciated the final chapter of the book entitled 'Phylogeny and Systematics of the Fungi' at an earlier point in the book. As a footnote, several vivid color plates are provided in the chapter entitled 'Allergy to Basidomycetes' that are worth a look.

Aside from the thorough chapter provided by Kaufman and Tomee entitled 'Defense Mechanisms of the Airways against *Aspergillus fumigatus*: Role in Invasive Aspergillosis', this book omits much of the work of immunologists addressing fungal allergy and pathogenicity. This work is important because it has yielded important data regarding how various immune cells including dendritic cells, T cells, B cells, eosinophils and neutrophils are activated and their behavior modulated by various types of fungi. These data are particularly important in the context of allergenic anti-fungal immune responses taking into account the advent of immunotherapies that may provide side-effect free alternatives to the present day antifungal drugs.

In summary, this book provides a valuable concise reference for physicians and researchers alike. The inclusion of technical information regarding fungal aerobiology may also be of interest to those concerned with the growing problem of 'sick building syndrome'. Several excellent references are provided in each chapter that will aid the reader in further more detailed research in a given specialized area of fungal research.

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