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Book Review

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Multiple Drug Resistant Bacteria. Ed. C. Amábile-Cuevas. Horizon Scientific Press, 2003. Pp. vi + 182. £80. ISBN 1-898486-45-X.

Increasing and spreading resistance to antibiotic substances is a problem of increasing importance. It may in fact be a silent nuclear explosion that has the potential to mushroom into gargantuan proportions in the coming decades, effectively reversing the progress that has been made in treating bacterial infectious diseases during the 20th century, and catapulting us back to the dreadful ages of the 'White Plague' and other scourges. Unfortunately, to date, much of the medical community is largely as ignorant and indifferent to this looming catastrophe as are the political circles. Careless and improper use of antibiotics in human medicine and their massive unjustified misuse in the industrialized agricultural businesses propel the evolution in prokaryotes of ever stronger and broader resistance phenotypes. Some pathogenic strains already now are virtually untreatable.

While the causes are plainly visible, the effects (i.e. the molecular mechanisms underlying resistance, particularly multiple resistance) are frequently less clear. In *Multiple Drug Resistant Bacteria* experts from around the world present and discuss the state of the art with respect to this microbiological equivalent of the sword of Damocles. The volume is divided into seven chapters: after a general introduction to the topic, chapters 2 and 3 take a detailed look at the mechanisms of resistance and their acquisition in Gram-negative and Gram-positive bacteria respectively. Chapter 4 examines the molecular genetics of multiple resistance, followed by a chapter on microbial communities in biofilms, looking at the problem from an ecological point of view. Chapter 6 (by far the longest) presents the disquieting current situation with respect to strains of highly resistant enterococci and *Staphylococcus aureus*. The concluding chapter deals with the role of horizontal, cross-species exchange of genetic material. This fascinating phenomenon has come into the focus of microbiological research only quite recently, and its role in the spreading of resistance cannot possibly be overestimated – and is probably frequently underestimated. The results of research in this particular area are intriguing and highly revealing: what has been learned so far, as well as what is yet to be discovered, are probably going to permanently change our perspective of prokaryotic evolution. Practical considerations to be derived from these novel insights that may transform into medical applications are possible, probable and desirable.

The format of the book is that of a learned monograph for the initiated reader. The chapters take the form of expert reviews that the potential readership will be well acquainted with. Each chapter is individually referenced so that each can in principle be used independently (for example for teaching purposes, seminar presentations by students, etc.). Individual differences in style and length can be seen and are indeed expected from a multi-authored assembly of independent contributions.

The topic of the book is timely and of the highest relevance. A greater awareness of the problem of the building up in bacteria of an ever increasing potential for resistance and the possibility of inter-species transfer are pressing needs in the medical and veterinary as well as the political arenas. The production of the book is very good. It can only be hoped that this treatise on a red-hot topic in epidemiology will find the wide readership and circulation it deserves. The battle rages on, and there is no time to lose.

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