

Book Reviews

Population Genetics of Bacteria. S. BAUMBERG, J. P. W. YOUNG, E. M. H. WELLINGTON, J. R. SAUNDERS, eds. Cambridge University Press, 1995, £55.00 (US\$110.00) (hardback).

If the purpose of reviewing a book is to advocate that one's colleagues read it or not then my task is simple - read it. Alternatively, if my role as reviewer is to selectively guide readers of *Epidemiology and Infection* concisely through the diversity of articles provided my mountain of disparate notes suggests that the task is impossible. The 16 articles defy both generalization and objective coherent summary - I am reminded of Proust; the universe is real for all of us and dissimilar to each one of us... not one universe, but millions. This volume has something for all, much for many and every shade, in between.

Taking a broad-brush overview; three articles consider the practical population genetic observations of specific, medically important genera/species (*E. coli*, the pathogenic *Neisseriae* and *Neisseria meningitidis*). Ten reviews focus on the mechanisms through which strain variation may be generated. The remaining three offer different mixtures. Maynard-Smith deals with the concepts and is both interesting and provides perspective for the volume as a whole. Major issues are covered clearly and the author admits to emphasis on the significance of recombination. One statement with respect to the way in which increased genetic knowledge should constrain our behaviour, with which I would strongly agree is that 'it is highly desirable that named taxa (species, genera, etc.) should be monophyletic'. By extension this should also apply to named clones.

The articles by Pickup and Sharp et al. at first glance offer little to the medical microbiologist. However, the first of these provides considerable food for thought in that many collections of pathogens are studied with too little critical consideration of the sampling process. Some of the lessons learned from aquatic ecology could usefully translate into the clinical sphere. The second, although focussed on *Bacillus* sp. contains a systematic analysis of the interpretation of a wide range of data including anomalies. As a model for the future investigation of pathogenic genera it's clarity had much to commend it.

In the preface the editors state that we need to develop a reliable intellectual framework from which an understanding of bacterial populations may proceed. As a science bacterial population genetics is in its infancy. As with human infants the first steps are tentative. The reviews that focus on the mechanisms that contribute to bacterial variation are to a greater or lesser extent theoretical. We are not yet at the stage of being able to assess their relative contributions. However, the practical investigation of incidents and outbreaks of infection disease commonly generates data that contains anomalies and complicates interpretation. Our assimilation of the information from these articles will allow refinement of the interpretative framework.

The *Neisseriae* feature prominently, some might argue excessively (two dedicated reviews, and a significant part of a third phase variable antigens). However, the combination is complementary rather than duplicative and together provide a wealth of detail and a balance between theory, practical application; a useful backdrop from which the reader can reconsider the clonality/recombination question.

No work of this nature could justifiably ignore *E. coli* and friends. It does not and Whittam's review is both deft and comprehensive. Major pathogenic subgroups (0:157.0:111) are well covered and related to broader enteric taxa. To conclude on a nit-picking note, this article together with a number of the others, does contain minor but occasionally confusing typographical errors - H2/H6 antigens (Pg 227) and I imagine the author intended clear-cut epidemics (Pg 233) referring to 0:111 diarrhoea rather than 'clear-out epidemics' as stated.

D. J. PLATT
Glasgow Royal Infirmary
Glasgow