Epidem. Infect. (1992), **108**, 211–212
Printed in Great Britain

Book Reviews

Infectious Diseases of Humans: Dynamics and Control. R. M. ANDERSON, R. M. MAY. Pp. 757. Oxford University Press; 1991. £50.00.

This substantial book is a compilation of past and new work from the fruitful partnership of two eminent scientists. They have established a firm place in the literature of mathematics applied to biological problems of practical importance. Much of their work relates to infectious diseases; for example, to those for which vaccines are available, and therefore vaccination strategies need to be optimized, and to studies of the complex epidemiology of HIV. The book goes a long way to achieve its stated aims but the title is misleading.

The publishers have printed only 'Infectious Diseases of Humans' on the spine and a reader picking it off the shelf would be surprised to find relatively few infections mentioned by name. Instead, hypothetical examples or broad groups of disease are studied to give mathematically describable patterns of spread. There are some named infections which feature prominently, such as measles, rubella, HIV and helminths, because mathematical modelling has much to offer in their study and control.

The aims of the authors are to illustrate how observed trends in diseases should be interpreted, how the influential factors can be identified, to discuss collecting data, model future scenarios and contribute to discussions of disease control. The book is targeted at 'epidemiologists, public health workers, parasitologists and ecologists'. The book includes enough mathematics to 'stimulate interest among applied mathematicians and statisticians'. Epidemiologists, etc., unpractised in modelling should find this a rewarding book as it explains very clearly the reasoning behind, and the logical building, of the equations. The processes are presented in carefully thought-out stages.

There are scientists who boast a deep-rooted dislike of, or conviction that they 'do not understand', mathematics. Attentive reading of this book might achieve some conversions because of the clarity of the writing and the abundance of practical examples with real data.

This book should be commended to statisticians and mathematicians. The area of application is specialized but highly topical. It invites questioning thought about spread of infections, with a glimpse of the complexities involved, such as subclinical infection and detecting genuine immunity.

All readers should be aware that the subject of mathematical modelling in infectious disease epidemiology has attracted much attention and there are many worthwhile contributions among the Reference Section. Readers should also be aware that a considerable literature has been published in the short time since the compilation of this book (a fact which bears out the growing recognition being given to this discipline). Inevitably some interesting works have been omitted from the references. Modelling does not give definitive answers to problems, its value lies in stimulating discussion by trying to describe what might have caused the current scenario or what might be the consequences of interventions or changes. Not all models lead to the same conclusions.

This book should be regarded as high-quality reading material, but not as a reference book. The overall structure of the book takes some getting used to, with diseases grouped not by taxonomy but by the problems they present for mathematical modelling; but it works well. The typographical layout is pleasing, there is informative labelling of subsections. Each chapter in the first half of the book ends with a helpful, state-of-progress summary. This is a style which other authors should consider and it is a shame it was not continued in the latter part of this book.

H. E. TILLETT
Communicable Disease Surveillance Centre
Public Health Laboratory Service
London