

lems in making a decision. They stated that in the liver from pigs treated 'according to good practice in the use of veterinary drugs', quinoxaline-2-carboxylic acid is the only metabolite that can currently be identified, but there are unidentified residues. Because of the genotoxic and carcinogenic nature of carbadox and some of its metabolites, the committee was not able to establish an ADI (acceptable daily intake). However, the committee then went on to conclude that residues resulting from the use of carbadox in pigs were acceptable, provided that the recommended MRLs were not exceeded. The definition of what are suitable MRLs (maximum residue limits) is not given, and since this review may be used in countries with perhaps different MRLs, which MRLs did the committee have in mind?

For Olaquinox, the committee was unable to establish an ADI but concluded that residues resulting from the use of Olaquinox in food producing animals under conditions of good practice in the use of veterinary drugs were temporarily acceptable. Further data are required by 1993. Again no definite details are given of what represents good practice.

Overall there is a lot of information—well indexed—that is not otherwise available, with definite decisions and recommendations in most cases on acceptable exposure levels for residues of the appropriate compounds. In most cases the pharmacokinetics and metabolism of the compounds are reviewed and discussed, and this information could certainly be of interest to research workers.

JOHN A. JAMES

Coronaviruses and their Diseases. Advances in Experimental Medicine and Biology, Volume 276.

Edited by D. Cavanagh & T. D. K. Brown.
New York and London: Plenum Press.
1990. 676 pp. US\$155.40

Coronaviruses are responsible for several important veterinary diseases including infectious bronchitis in chickens (IBV), transmissible gastroenteritis in pigs (TGEV) and infectious peritonitis in cats (FIPV). These viruses, and mouse hepatitis virus (MHV) also serve as excellent models with which to study RNA replication, recombina-

tion and translation. In addition, MHV, which causes subacute demyelination, provides a means to study mechanisms of neurological damage. This volume contains the proceedings from the 4th International Symposium on Coronaviruses held at Cambridge in July 1989. The book therefore pinpoints the foci of current scientific research into this unusual group of viruses, and as such will mainly be of interest to specialists rather than to general readers (especially given the cost of the volume). Each of the individual structural proteins and the polymerase contributes a chapter, whilst other topics covered include transcription, variation and evolution, and B- and T-cell epitopes. Most of the 13 chapters start with a short paper giving the background to the subject, which should prove to be especially useful to the non-specialist. These are then followed by series of research papers which as in any multi-author volume are of variable quality, although the overall standard is high. Coronavirus research has made rapid progress recently, as these papers illustrate well. The recent findings that equine arteritis virus (previously classified as a togavirus) and Berne virus, a torovirus, share many features with the coronaviruses, has expanded the range of viruses to which the findings reported here are relevant. The recent impetus in this area looks likely to be continued.

M. BINNS

The Veterinary Formulary. Handbook of Medicines used in Veterinary Practice

Edited by Yolande Debuf

London: The Pharmaceutical Press. 1991.
448 pp. £37.50 (hard)

I began to use this book as it was intended—'as a rapid reference'—and quickly found it to be absolutely invaluable. The classified notes on drugs and preparations are encyclopaedic and have let me down on very few occasions, even when dealing with human products used in veterinary medicine. I did catch it out when looking for fluoroquinolone antimicrobials and for tilmosin. However, since these were not licensed or marketed for animals at the time of publication, the editor is forgiven.

The layout of the classified section is excellent and is the only really user friendly guide to chemotherapeutic products for vet-