Echinococcosis: transmission biology and epidemiology

EDITED BY P. S. CRAIG AND D. P. McMANUS

CO-ORDINATING EDITOR L. H. CHAPPELL

Preface

Echinococcosis is the generic term for infections of mammals or humans with the adult or larval stages of taeniid tapeworm species belonging to the genus *Echinococcus*. Two of the currently recognised four species in the genus i.e. *E. granulosus* and *E. multilocularis*, are responsible for almost all human infections, and they are among the most important of the helminthic zoonoses. These two species between them are transmitted in arctic, temperate and tropical biomes. Transmission occurs between carnivore definitive and herbivore/omnivore intermediate hosts as a result of host predator–prey relationships, or due to synanthropic adaptation to domestic/ peridomestic cycles. These zoonoses individually or together are re-emerging as public health problems or potential problems in some regions including parts of Europe and Central Asia. In the last decade significant progress has been made in our ability to undertake epidemiological studies of both human cystic and alveolar echinococcosis, and to study the transmission biology in wildlife cycles. Advances in diagnostic approaches for human disease, for detection of the parasites in animal hosts, in molecular genotyping of isolates, and application of multi-scale spacial analysis has enabled greater accuracy and reliability in community surveys and epidemiological investigations, as well as new insights into transmission ecology.

The contributions to this volume are from experts with major experience in field studies on echinococcosis. Following an introductory overview of the subject, individual papers review the use of ultrasound-based diagnosis in community studies, the application of molecular tools to study the epidemiology and transmission biology of *Echinococcus* spp., and also specific papers on the epidemiology and transmission in regions in the Arctic/Subarctic, Africa, Australia, China and Europe. In addition, papers review the role and importance of landscape and spatial approaches in the transmission ecology of *E. multilocularis*, the transmission dynamics in relation to control of *E. granulosus* infection in domestic cycles, and provide a perspective on control options against *E. multilocularis*. This volume is thus of particular interest to specialists, as well as non-specialists working in the fields of medical parasitology, veterinary public health, helminthic zoonoses, host–parasite ecology and molecular epidemiology.

Finally, this volume is dedicated to the memory of Dr Michael Gemmell who died in July 2003, in recognition of his enormous contribution to the study of the transmission biology of *Echinococcus*.

P. S. CRAIG and D. P. McMANUS
September 2003

Parasitology (2003), **127**, S1.
DOI: 10.1017/S0031182003004451 Printed in the United Kingdom