BOOK REVIEW


The obligate role of an arthropod in the perpetuation of protozoa was first demonstrated by Theobald Smith and Frederick Kilborne (1893), who described the life cycle of Babesia bigemina, the cause of bovine redwater or Texas cattle fever. This seminal investigation and that by Sir Patrick Manson (1878) on the development of filariae within mosquitoes started the field of medical entomology. Subsequently, for much of the 20th century, other than for Rocky Mountain spotted fever, there had been relatively little appreciation of the burden that ticks may have on human populations; mosquito biologists globally outnumbered tick biologists by an order of magnitude. (On the other hand, those engaged in the veterinary sciences have long focused on ticks because these arthropods are responsible for the ill health of many livestock, and thus much of what we know about general tick biology can be related to veterinary acarologists.) Lyme disease, first identified as a characteristic set of signs and symptoms (particularly erythema migrans and monoarticular arthritis) in residents of coastal Connecticut in 1976, stimulated an enormous interest in tick biology as it related to human health to the point that there were as many medical entomologists working on ticks during the 1980s and 1990s as there were working on mosquitoes. The appearance of West Nile virus in the Americas in the late 1990s has swung the pendulum back to mosquitoes. The recent appearance of West Nile virus in the Americas in the late 1990s has swung the pendulum back to mosquitoes. The recent appearance of West Nile virus in the Americas in the late 1990s has swung the pendulum back to mosquitoes, but strong interest in ticks and their biology remains.

The recently published book Tick-Borne Diseases of Humans, edited by Jesse Goodman, David Dennis, and Daniel Sonenshine, provides a comprehensive compilation of information about the diverse tick-transmitted infections, with an intended audience of clinicians and public health students, and secondarily of entomologists and others needing one easy-to-access source. When complemented by the recent special Parasitology supplement on tick biology (Ticks, Disease, and Control, edited by A. S. Bowman and P. A. Nuttall, Cambridge University Press, 2004), any student, clinician, or investigator would have a state-of-the-art library on virtually all aspects of ticks and the infections they transmit. All we need now is a volume for ticks and infections of veterinary importance; such a tome would underscore the point that today's veterinary infection could be tomorrow's emerging zoonosis.

The book has 21 chapters organized into three main sections. A general introduction of tick biology, control and management, and systematics, among other topics, is provided in the first seven chapters. Of particular interest is a unique contribution on the tick-pathogen interface by Ulrike Munderloh and her colleagues, who are acclaimed pioneers in studying these aspects of the biology of tick-borne infections. They present a fine summary of the lifecycle traits of rickettsiae, ehrlichiae, and spirochetes within the tick vector, illuminating greatly underappreciated facets of perpetuation such as the dramatic changes in microenvironment that these bacteria must face before they are transmitted back to the vertebrate host. Another chapter that deserves recognition is directed at the human-tick interface (Chapter 6), examining the pathology and immunology of tick bite as well as various understudied conditions such as tick bite hypersensitivity, tick bite granuloma, and tick toxicosis.

The next 13 chapters, arranged into a section on specific diseases, provide an up-to-date review of the existing literature, and many are written by the very investigators who have originally contributed much of the science for their topic. Each such chapter contains a historical introduction, a succinct summary of the biology of the agent, an interpretation of the life cycle, epidemiology, clinical manifestations, diagnosis, treatment, and prevention. All these chapters are thoroughly researched, with a median of 146 citations of original reports.

There are 15 pages of magnificent color plates, including some superb histopathologic micrographs from cases of Crimean Congo hemorrhagic fever, tularemia, monocytic ehrlichiosis, spotted fever, and boutonneuse fever. It would be difficult to find equivalent plates in original reports, and having all of these compiled in one book will greatly enhance teaching of the pathologic aspects of these tick-borne infections. I certainly intend to use them when doing so.

As with any multi-authored book, some flaws are evident. Perhaps the most glaring is the absence of chapters discussing Omsk hemorrhagic fever and Kyasar Forest Disease, two tick-borne encephalitis group flaviviral infections that cause hemorrhagic disease. Both have caused more cases (with great case fatality rates) within their known distribution than do the rare ehrlichioses such as that caused by Ehrlichia ewingii. In Chapter 7, the agent of Q fever is erroneously referred to as “Anaplasma burnetii,” with an assertion that it has been recently reclassified. The epithet “human granulocytic anaplasmosis” has been unquestionably adopted throughout the book to refer to the infection caused by Anaplasma phagocytophilum, which has been known since 1932 as “tick-borne fever,” and since 1994 as “human granulocytic ehrlichiosis” or “HGE.” “Anaplasmosis” has been an unequivocal name used since 1934 for a hemolytic disease of ruminants; HGE has no hemolytic component whatever. Color distribution maps for important tick species are provided and are useful, except that there is no rhyme or reason to the inclusion of particular species on a specific map: the North American Ixodes cookei, for example, is placed on a map with Rhizophus simus of southern Africa, two Eurasian Haemaphysalis spp., and Amblyomma lepidum of eastern Africa. Finally, an otherwise useful, comprehensive, and essentially standalone discussion of the geographic distribution of ticks and the infections they transmit (Chapter 21) seems out of place and added as a redundant afterthought inasmuch as most of the material therein had already been provided in earlier chapters of the book dedicated to the specific agents.

These criticisms aside, the book is well produced, and contains some jewel-like contributions that make the modest price of ownership well worth it. The goal of the editors has certainly been achieved, and this book can be strongly recommended to clinicians, public health specialists, students at the undergraduate and graduate levels, and last but not least, fellow researchers.

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