

BOOK REVIEW

I. Maudlin, P.H. Holmes, M.A. Miles (Eds.): The Trypanosomiases. CABI Publishing, Wallingford, Oxfordshire, UK, 2004. ISBN 0-85199-475-X, hardback, 614 pp. Price £ 99.50, \$ 185.00.

Three distinguished trypanosome researchers —Professor Ian Maudlin (University of Edinburgh), Peter H. Holmes (University of Glasgow) and Michael A. Miles (London School of Hygiene and Tropical Medicine)— teamed up to edit a comprehensive reference book covering the biology, pathogenicity and, first of all, control of human and veterinary trypanosomiases. In addition to the African, also Asian and South American trypanosomiases are dealt with. For this state-of-the-art monograph the editors succeeded to recruit 68 world's leading experts from 14 countries, mostly from the UK, Belgium and Brazil. The book is divided into seven parts each of which has in turn several chapters; altogether they are 33. This brief review cannot accommodate the names of all authors and co-authors of the chapters.

The first part on biology of trypanosomes presents chapters with very fundamental data. The chapter on systematics presents characteristics of all trypanosomes of medical and veterinary importance including, in addition to morphology, host range and pathogenicity also detailed biochemical and molecular characterisation. A comprehensive phylogenetic tree of all trypanosomes is available, as well as a tree of *Trypanosoma brucei* group showing that there are in fact two *T. b. rhodesiense* groups. The chapter on the African trypanosome genome states that proteomic analysis can eventually be used to identify genes, and recent data are discussed concerning *T. brucei* genome sequence. The chapter on communication in trypanosomatids reports e.g., on issues such as ligand uptake, including uptake of macromolecular ligands from mammalian hosts, on cell signalling, cell differentiation and gene expression. Progress in genetics and molecular epidemiology of trypanosomes is reflected in a special chapter on the role of population structure and role of genetic exchange in these parasites. Genetic exchange taking place in the tsetse fly is confronted with the clonal theory proposing that these parasites exist in clonal populations where genetic exchange is rare.

Part two, on vector biology, is aimed mainly on the tsetse fly (three chapters). It reviews all the 31 *Glossina* species and subspecies, and shows the tsetse as a unique model to study evolutionary biology in view of its relationship with the organisms it harbours (trypanosomes and symbiotic prokaryotes). A special chapter is devoted to Triatominae, their systematics, morphology and population biology.

Part three deals with epidemiology and diagnosis in altogether six chapters that offer at places a reading both scholarly and quite attractive. Extant data show that there had been no serious epidemics of sleeping sickness in Africa prior to colonisation. A reminder can also be found, how intimately the evolution of *T. brucei gambiense* and *T. brucei rhodesiense* was associated with the early evolution of hominids in Africa. The chapter on epidemiology of American trypanosomiasis also pays attention to the subspecific taxonomy of *T. cruzi*.

Part four contains three chapters written well in the classical way on pathogenesis of the human African and American trypanosomiases and of animal trypanosomiasis. Due attention is paid to the problem of autoantibodies, immune complexes,

cytokines and immunosuppression. In the Chagas disease, all phases of the infection are discussed. It is clearly emphasised how enormous is the worldwide impact of animal trypanosomiasis in nations fighting to overcome the food deprivation. Similarly as in trypanosomiasis affecting humans, development of vaccines against trypanosomes of animals remains a global priority. However, fundamental knowledge of the parasite is still badly needed, as well as support from international agencies.

Part five contains in its two chapters —Medical significance of American trypanosomiasis and Economics of African trypanosomiasis— salient facts that are needed to understand the problem. Especially the second chapter quotes ample data on reduction of cattle production throughout African regions, models used to assess the impact of trypanosomiasis on cattle, estimates of tsetse control costs and other facts instrumental for a complete grasp of the situation.

Part six deals with chemotherapy and disease control; this and Part seven is the very core of the mission of the book. Chapters on current chemotherapy of human African trypanosomiasis, on current chemotherapy of American trypanosomiasis and on existing chemotherapy of animal trypanosomiasis describe the drugs used today and the effect of their action. The chapter on the future prospect in chemotherapy of trypanosomiasis emphasises how the development of new drugs against sleeping sickness stagnated in the latter half of the past century and also the lack of really satisfactory drugs against Chagas disease. The sixth part is concluded with chapters on trypanotolerance and on control of blood transfusion transmission of American trypanosomiasis in humans. It states that transfusion-associated Chagas disease probably still occurs throughout the infested area, in spite of the recent legislation and government regulation.

Part seven deals with vector control. In its seven chapters, it presents all important aspects of the problem: insecticidal control of tsetse, development of bait technology to control tsetse flies and application of these technologies, community participation in tsetse control, its principles, potential and practice, control of Triatominae, sterile insect technique as a component of area-wide integrated pest management of tsetse, and biting flies and their role in the mechanical transmission of trypanosomes to livestock and methods for their control.

The value of the book is in bringing the already established scientists up to date with current research going on across the field of trypanosomiasis as well as to provide intellectual stimulus for those who enter studies in this field. The editors can be congratulated on putting together such a book with a wealth of recent data, which seems to cover all aspects of the problem. The prerequisite of the success of the book was a wise selection of a large team of expert contributors and coordination of their work. The treatise can be sincerely recommended to all parasitologists, veterinarians, protozoologists and generally readers interested in tropical diseases and tropical hygiene as well as to developers planning new settlements in the infested regions.

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