

S.J. Black, J.R. Seed (Eds.): The African Trypanosomes. World Class Parasites, Vol. 1. *Kluwer Academic Publishers, Dordrecht, 2001. ISBN 0-7923-7512-2, hardbound, 192 pp. Price EUR 127.50, USD 115.00, GBP 79.00.*

This is the first volume of the new series which will deal with the recent trends and achievements of parasitological research highlighting the impact of parasites on society and economy. The preface by the two editors as well as the introductory chapter by D. Molyneux present the rather bleak state of the problem of trypanosomiasis control. Although the first drug for treatment of sleeping sickness, Atoxyl, was invented as early as 1905 and in spite of *Glossina* being vulnerable to control by various means, trypanosomiasis still remains one of the most serious diseases of Central and Equatorial Africa. It becomes now a re-emergent illness and although it presently affects up to 500,000 people and is invariably fatal when untreated, it has to compete with malaria, HIV and tuberculosis for the scarce resources, often under a situation of intertribal warfare and completely dismantled public health infrastructure.

In the introductory chapter which conveys his frustration from the unhappy situation of trypanosomiasis control and sums up all failures associated thus far with suppressing *Glossina* populations, D. Molyneux states that if animal trypanosomiasis was a disease of western livestock we might have a safe human trypanocide. He regrets that there are far more reviews of trypanosome chemotherapy and biochemistry than usable products. He stresses the need for efficient use of the resources presently available which should be focused on the disease control.

The two following chapters correspond with what is emanating from the introductory chapters. The first chapter by M. Gilbert and coll. deals with the Programme Against African Trypanosomiasis Information System (PAATIS). The programme has quite a broad basis and also stresses the ways of control under the condition of rural development and sustainable agriculture. The second chapter by J.J. McDermott et al. explores the impact of climate changes, growth of human population and expected disease control on *Glossina* distribution and trypanosomiasis risk up to year 2050. Unless concerted control efforts are implemented, sleeping sickness will continue to be a major problem.

The following chapter by S. Aksoy is devoted to vector control. A sophisticated strategy is proposed (pheromones and traps are not mentioned); using *Wolbachia* symbionts, trypanosome susceptible tse-tse flies would be replaced by engineered parasite-refractory *Glossina* which should reduce trypanosome transmission.

In the chapter on diagnostics, P. Büscher reviews the techniques used, from direct observation to molecular detection. He complains that potentially excellent diagnostic tests never reach the validation phase and might soon belong to history; the health organisations have largely missed the opportunity to provide validated diagnostics for field use. Unless this approach is changed, molecular diagnostics with its unparalleled potential for sensitive and specific detection may undergo the risk of remaining the property of scientific community and only have a minor impact on real disease control.

Chapter on chemotherapy (J.R. Seed and D.W. Boykin) reminds that just four chemotherapeutics have been introduced since Atoxyl in 1905. The problem is that even if an ideal drug was developed, to deliver it to those in need may be an uneasy task. The chapter on immunobiology of African trypanosomes (J.M. Mansfield and coll.) attracts attention in that it provides the reader with a new view of the immunobiology of trypanosomiasis and with a new paradigm of host resistance differing from that surviving in textbooks. They state that it takes multiple arms of the host immune system to control trypanosomes and to provide relative resistance during infection. Quite intriguing is the chapter by J. Naessens et al. reviewing the mechanisms of trypanotolerance in some breeds of West African cattle, since its elucidation might bring closer new options for disease control.

N.B. Murphy and T. Olijhoek review the factors controlling population size of trypanosomes and also their differentiation. They highlight the recently discovered low molecular factor released by bloodstream form trypanosomes which affect their cell division. D.P. Nolan et al. review the process of endocytosis in African trypanosomes and point at the relevance of knowledge of this process in terms of trypanosome control. A detailed review of the genome of African trypanosomes is presented by J.E. Donelson showing that knowledge of the complete set of genes may open new ways for control or elimination of these pathogens.

The final chapter by J.S. Black and coll. is an essay devoted to vaccine development. Various requirements for an effective vaccine are discussed and a deep insight into the problem is provided. Unfortunately, it is quite evident that an effective vaccine is not a matter of near future.

It has to be regretted that the layout of the book has not been paid more attention to; unjustified right borders of the text remind of some cheap textbook editions, halftones (e.g., p. 129) are rather poorly reproduced and many of the graphs would look much better in colour. On the other hand, the abstracts heading each chapter are a very useful feature of the book.

In a way, the title of the book is slightly misleading since it does not cover topics such as morphology, species distinction, life cycles and the like. Although the editors themselves mention as "glaring omissions" not included in the book some important research such as tse-tse trap technologies, molecular basis for human resistance to trypanosome infection and the like, the book presents an important overview of research pertinent to or having good prospects for trypanosomiasis control and provides the reader with an enormous wealth of well organised data. Therefore this volume can be recommended to everybody engaged in the study of African trypanosomiasis as instrumental for understanding research to be implemented and topics to be addressed in effective control of this disease.

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