

BOOK REVIEW

A.A. Guglielmone, A. Estrada-Peña, J.E. Keirans, R.G. Robbins: Ticks (Acari: Ixodida) of the Neotropical Zoogeographic Region. A special publication sponsored by International Consortium on Ticks and Tick-borne Diseases (ICTTD-2). Atalanta, Houten, The Netherlands, 2003. ISBN 987-43-6828-4, hardbound, 173 pp. Price not given.

The authors have written an interesting book on Neotropical ticks, their geographic distribution, parasite-host relationships and medical and veterinary importance. The publication was sponsored by the International Consortium on Ticks and Tick-borne Diseases (ICTTD-2), a project financially supported by the European Union and involving many institutions in Europe, Africa, Latin America and China.

The book is divided into three parts: a taxonomic part and two dealing with the medical and veterinary importance of South America ticks. In the taxonomic part, the authors discuss 188 tick species in total, 74 of them belonging to the family Argasidae and 114 to the family Ixodidae. In each species, the type depositories are referred to as far as the authors were successful in their localisation. The geographic distribution, principal hosts and undescribed stages of each species are also summed up. Unfortunately, the data on geographic distribution and principal hosts are limited only to the Neotropical Region and records outside this region are not mentioned. Valuable comments are added clarifying the taxonomic position and opinions on the validity of different species.

The authors are rather conservative in their taxonomic opinions, accepting the Mayr's conception of biological species and experimental hybridisation as the only criteria of species. They follow the systematic outline presented by Hoogstraal and Aeschlimann (1982) and do not accept new classifications based on molecular studies of DNA sequences as the only criterion for development of phylogenetic trees. This approach seems to be more reliable in contrast to exaggerated optimism of many molecular biologists in constructions of different developmental trees.

Conservatism of the authors in taxonomy is markedly expressed in their concept of the genus *Antricola* as do not accept the genus *Parantricola*. Although they mention all 14 described *Antricola* (including *Parantricola*) species, they uncritically accept Keirans' (1992) doubts about the validity of the taxa described from Cuba in the 1970s without examination of the material. However, I must agree with the authors, that many *Antricola* and *Nothoaspis* species are at risk of extinction, similarly as *Ornithodoros galapagensis*, *Ixodes pom-erantzi* and some more tick species.

There is a very valuable discussion on the presence of *Argas persicus* and *Argas reflexus* in the Neotropical Region. Many records are based on misidentification and the presence of these two species on the South American continent is doubtful. At the end of this chapter, some additional comments are included on doubts regarding records or validity of some more ticks of the Neotropical Region.

In the chapter on "Ticks and Human Health", the importance of argasid and ixodid ticks in human bites and transmission of infectious agents are discussed. Surprisingly, no main disease vectors occur among argasid ticks in the Neotropical Region, although some of them may play a role in the natural

maintenance of several agents as *Coxiella burnetii*, spotted fever rickettsiae, Soldado virus and some non-pathogenic arboviruses. Many cases of bites of humans by soft ticks, followed by anaphylactic shock, otitis (mainly after bite of *Otobius megnini*) and also gangrene, amputation and even death in guano workers after bite of cave-dwelling *Ornithodoros* are reported.

A number of infectious agents transmitted to humans by hard ticks are recorded. *Amblyomma cajennense* is the principal vector of Rocky Mountain spotted fever caused by *Rickettsia rickettsii*. The ticks of the genus *Amblyomma* and other genera in the Neotropical Region transmit some more rickettsiae, such as *Rickettsia conorii* and *R. akari*. Among other infectious diseases transmitted by ticks of this region belong trypanosomiasis caused by *Trypanosoma cruzi*, babesiosis, leprosy, tularaemia and borreliosis. *Encephalitozoon*-like microorganisms were also isolated. Human paralysis also occurs after bite of several South America ticks.

In the last chapter, "Ticks and Animal Health", the species of *Argas* are mentioned as main vectors of chicken borreliosis caused by *Borrelia anserina*, and also of *Aegyptianella pul-lorum*. Other infectious agents, such as togavirus, bluetongue causative agent and chlamydia are also mentioned as spread by argasid ticks. Apart from neurological problems after bite by *Otobius megnini*, bird paralysis and guano bird desertion of their nests due to tick infestation are problems caused by argasids in domestic and wild animals. A lot of infectious agents are reported from Neotropical hard ticks, such as causative agents of heartwater, dermatophilosis, tularaemia, cattle borreliosis, ehrlichiosis, theileriosis, anaplasmosis, *Hepatozoon canis*, *H. americanum*, *Encephalitozoon*-like microorganisms, *Dipetalonema recognitum* etc. Also documented are the heavy losses to the cattle industry.

The book is concluded with brief "Comments", summing up the main conclusion of the book. Thirty-four pages of literature make a good overview of tick publications concerning the region. The book is supplemented by eight tables, six of them dealing with the geographic distribution of ticks in Nearctic and Neotropical Regions and two listing the species of *Ornithodoros* and *Amblyomma* infesting humans in the Neotropical Region.

Although much important information on ticks from numerous domestic and wild animals has been gathered in Neotropical Region, this publication is the first summarising the data on taxonomy, deposition of types, geographic distribution, principal hosts and medical and veterinary importance in one volume. The authors critically evaluated these data and prepared an excellent book that is valuable for all those dealing with ticks and their medical and veterinary importance. The book is very concise and will become a valuable handbook for all interested in Neotropical ticks.

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