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Studies that have allowed the advance in the knowledge of ticks (Acari: Ixodidae, Argasidae) in Chile: New species, host, localities and advances in tick born disease

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Ticks (Ixodoidea: Ixodidae, Argasidae) are obligatory hematophagous ectoparasites of vertebrates in some or all postembryonic stages. Several species are vectors of agents that may cause disease and even kill their vertebrate hosts; ticks may also cause dermatoses and loss of blood and they can inoculate toxins. Globally, the superfamily Ixodoidea contains the families Argasidae (208 species), Ixodidae (722 species) and the African Nuttalliellidae (monotipic). In the Neotropical region, a total of 200 tick species have been documented; 84 soft ticks and 116 hard ticks. In Chile, before 2006, approximately 20 tick species were known to inhabit Chile. In the last 10 years, the biogeographic and taxonomic knowledge has increased markedly due to two research projects by our group that allowed us to detect new findings and make new descriptions of ticks in Chile. We have collected during 7 years (360 days of field work) ticks of different hosts and environments in the 14 eco-regions of Chile, including the Antarctic Territory. We have developed the biological cycles under laboratory conditions, determined new species and new records of ticks for Chile and recently also, we have been researching the role of ticks as reservoirs of pathogens. The knowledge of Chilean ticks is increasing, being as we describe 31 ticks present in Chile, five of them new species. We have developed the complete biological cycles of four soft ticks. With respect to tick borne diseases, some Chilean tick species are threats to human health and others to domestic animals. *Ornithodoros amblus* and *O. spheniscus* cause severe discomfort in humans; *Otobius megnini* can play a role in the maintenance of *Coxiella burneti* in nature and cause Otitis in humans; *Argas neghmei* may cause erythema, pruritus and skin discoloration. *Rhipicephalus sanguineus* has been responsible for the arthropod bites of humans in Chile and is actually the most common ticks in domestic animals in the country and its bite has been correlated with the transmission of *Rickettsiae* to humans and animals. Recently, we have described the new bacteria *Borrelia chilensis* in *Ixodes sigelos* and *Rickettsia* sp., in *Amblyomma parvitarsum* from different localities. The integration of this knowledge will finally allow the implementation of management measures to prevent or anticipate emergent disease transmission between animal and human populations.

Biography

Daniel Alfonso Gonzalez Acuna has completed his PhD in the Institute of Wildlife at the Veterinary Medicine Superior School of Hannover, Germany. He is a Veterinarian, specialized in diseases of wild birds, mainly on the relation with their parasites and also a full Professor in the University of Concepcion, Chile. He has developed different research projects about parasites in wild birds. He has published about 150 papers in national and international journals.

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