



Bento Gonçalves/RS - Brasil
30 de abril a 3 de maio de 2013

Organização, Perspectivas e Desafios da Acarologia Brasileira

**SPECIATION PATTERNS IN HARD TICKS: *Amblyomma cajennense*, *Amblyomma parvum*
AND *Rhipicephalus microplus* AS PARADIGMATIC CASES.**

Santiago Nava

Instituto Nacional de Tecnología Agropecuaria, Estación Experimental Agropecuaria Rafaela and Consejo Nacional de Investigaciones Científicas y Técnicas, CC 22, CP 2300 Rafaela, Santa Fe, Argentina. E.mail: snava@rafaela.inta.gov.ar

A basic task of systematics is to understand modes of speciation. Currently, studies on tick speciation are performed by examining different lines of evidence as discrete and continuous morphological traits, DNA sequences and cross-mating trials. In terms of geographical distribution, three of the most important tick species present in the Neotropical Region are *Amblyomma cajennense*, *Amblyomma parvum* and *Rhipicephalus microplus*. The integrated analysis of morphological, biological and molecular characters has revealed that *A. cajennense* is a species complex characterized by parapatric speciation, where each species of the complex is associated to particular ecoregions with narrow hybridization zone. *Rhipicephalus australis* was reinstated based on molecular, morphological and biological data. This species was previously known as *R. microplus* for specimens reported in Australia and New Caledonia. Thus, it is currently recognized that the distribution of *R. microplus* comprises America and Africa, while *R. (B.) australis* is present in Australia, New Caledonia, and both *R. microplus* and *R. australis* coexist in some countries in southeastern Asia. In the case of *A. parvum*, DNA analysis showed that this taxon is divided into two major groups, one to the south of the Amazonian region, and the other to the north of this region, which suggest possible allopatric differentiation. Specimens corresponding to each molecular group were analyzed morphologically and fixed diagnostic characters were not found for each of them. Therefore, this case could correspond to cryptic speciation. The three examples before-mentioned showed different speciation patterns occurring in ticks present in the Neotropics.