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The genus *Mepraia Mazza*, Gajardo & Jörg (Hemiptera: Reduviidae) in Chile: Morphological, genetic and ecological differentiation of its species

In Chile, the species of the genus *Mepraia* are vectors of *Trypanosoma cruzi*, which causes Chagas' disease. Females are always wingless, but males can be winged or wingless according to species. The genes that govern the development of wings are located on the Y chromosome. A break of this holocentric chromosome would have giving rise to a Neo Y without the genetic information necessary to complete the development of the wings and would explain the emergence of wingless males. *M. gajardoi* is distributed in the coastal area of the regions XV and II of northern Chile. This sylvatic species lives associated with seabirds, lizards, and wild rodents. *M. parapatrica* is distributed in the coastal area in region III and region II and also is associated with seabirds but also invades peridomestic habitats. *M. spinolai* distributed in interior valleys of Regions III, IV, V and in rural areas of Metropolitan region and feeds mainly on small sylvatic mammals, invades the peridomestic and domestic habitats, especially in rural areas. In *M. spinolai* the frequency of micropterous and macropterous males depends according to the habitat where this species occurs. So, in wild populations of Metropolitan region, the frequency of micropterous males is higher than in macropterous males. In contrast, in peridomestic habitat of region IV, the frequency of macropterous males is greater than the frequency of micropterous males. Individuals of the collection of Institute of Entomology and those collected by staff of the Chilean Ministry of Health shows that the males collected inside human houses in the Metropolitan region and in region IV were almost all macropterous. The micropterous males are found almost exclusively in wild populations. This indicates a disruptive selection, probably due to that the presence of wings implies a greater accumulation of heat, acting as a greenhouse effect. For this reason, the winged males they go in search of cooler places inside houses where also can feed on blood human increasing the chances that these insects transmit *T. cruzi*.

Biography

Daniel Frías Lasserre has completed his Doctorate from University of Chile. Subsequently, he made improvement and research stays at the Smithsonian Institution in Washington DC, USA and in the University of Sao Paulo Brazil. He is Past President of the Genetics Society of Chile and the Chilean Society of Entomology. He was Director of the Institute of Entomology and Director of Research of the Metropolitan University of Educational Sciences. He has published more than 48 papers in reputed journals, 2 books, 22 chapters of books and has been serving as an Editorial Board Member of Chilean Journal of Agricultural Research.

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