



## Insects found in birds' nests from Argentina: cytogenetic studies in Cimicidae (Hemiptera) and its taxonomical and phylogenetic implications

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### Abstract

The Cimicidae (Hemiptera) are known to be blood ectoparasites primarily on birds and bats. Three species of the subfamily Haematosiphoninae are known from Argentina: *Acanthocrius furnarii*, *Ornithocoris toledo*, and *Psitticimex uritui*; all feed on diverse avian hosts. The chromosome number and male meiosis of *A. furnarii*, and *P. uritui* from new Argentinean samples are analyzed and compared with previous data. The sample of *A. furnarii* described by Ueshima (1966) with  $2n = 32 + XY$  (male), strikingly differs from the present results ( $2n = 10 + XY$ , male). The diploid number of *P. uritui* agree with the previously reported by Ueshima (1966),  $2n = 28 + X_1X_2Y$  (male). Taxonomical implications about the identity of *A. furnarii* are discussed and the mechanisms of the karyotype evolution of species belonging to Haematosiphoninae are proposed.

**Key words:** *Acanthocrius*, *Psitticimex*, Hemiptera, Cimicidae, birds' nests, achiasmatic meiosis, karyotype evolution

### Introduction

The Cimicidae (Hemiptera) are known to be blood ectoparasites primarily on birds and bats, with man as a secondary host (Usinger 1966). Five of the seven genera in the subfamily Haematosiphoninae are monotypic, an unusual feature in the Cimicidae: four genera are distributed in North America [*Haematosiphon* Champion, 1900; *Cimexopsis* List, 1925; *Synxenoderus* List, 1925; *Hesperocimex* List, 1925], and three genera in South America [*Ornithocoris* Pinto, 1927; *Acanthocrius* Del Ponte & Riesel, 1945 (= *Camimicimex* Usinger, 1966: Di Iorio & Turienzo 2008); *Psitticimex* Usinger, 1966] (Usinger 1966). Later, *Alayocimex* Hernandez Triana & De la Cruz, 1994, also monotypic, was described from Cuba. Three species of Haematosiphoninae are known from Argentina: *Acanthocrius furnarii* (Cordero & Vogelsang, 1928), *Ornithocoris toledo* Pinto, 1927, and *Psitticimex uritui* (Lent & Abalos, 1946). They all feed on diverse avian hosts in their nests (Usinger 1966, Turienzo & Di Iorio 2007, Carpintero & Aramburú 2007, Di Iorio *et al.* 2008, Di Iorio & Turienzo 2009, Santillán *et al.* 2009a, 2009b).

### Cytogenetic studies in Cimicidae

Forty-five species in this family show a diploid chromosome number that ranges from 10 to 42 with a peak at 31. Cimicid bugs have simple (XY/XX, male/female) and multiple sex chromosome systems, and some species possess supernumerary Xs and Ys (Ueshima 1979; Manna 1984; Grozeva & Nokkala 2002).