

Morphology of Testicular Follicles as Taxonomic Tool in the Subfamily Triatominae

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Triatomines are bloodsucking insects included in the Hemiptera order and Triatominae subfamily [1]. The Triatominae subfamily consists of 148 species distributed in 18 genera and grouped in six tribes, out more, Alberproseniini, Bolboderini, Cavernicolini, Linshcosteini, Rhodniini e Triatomini [2].

The triatomines present the internal genitalia comprising a pair of testes, two vas deferens, a pair of seminal vesicles, four pairs of accessory glands and ejaculatory duct that open in the aedeagus [3]. Each testis consists of seven seminiferous tubules or testicular follicles entwined and engaged by the testicular membrane [4].

The number of testicular follicles varies among different species of insects, and may be an important taxonomic tool [5]. In triatomines the number of follicles is always seven. However, the size of the follicles allows the characterization of the genera *Rhodnius*, *Psammolestes*, *Panstrongylus*, *Triatoma*, *Meccus* and *Mepraia* [6-9] (Table 1).

Studies of the testicular anatomy were important for the revalidation of the species *M. spinolai* once was regarded as *T. spinolai* Lent and collaborators, in 1994, [9] described the testicular follicles for *M. spinolai* and differences were observed when compared with the genus *Triatoma* (Table 1), confirming the status of genus *Mepraia*.

The Rhodniini tribe consists of genus *Rhodnius* and *Psammolestes*. The two genera have the same morphological characteristics in the testicular follicles (Table 1), supporting the ancestry monophyletic of tribe [10]. On the other hand, the genus *Triatoma* and *Meccus*, which have long been considered synonymous by some researchers, not present differences in the disposition of size the tubules follicular (Table 1).

Therefore, although the morphology of testicular follicles is an important tool taxonomy, it is necessary that new species, genera and tribes should be analyzed, since it few taxons had the morphology of testicular follicles described and interspecific variation within a given genus may occur, as observed in *T. rubrofasciata* which has a tubule long, two medium, two short and two very short, showing as an exception within the genus *Triatoma* [11].

Length of follicles	Tribo rhodniini		Tribo triatomini			
	<i>Psammolestes</i>	<i>Rhodnius</i>	<i>Panstrongylus</i>	<i>Triatoma</i>	<i>Meccus</i>	<i>Mepraia</i>
Very short	-	-	-	-	-	1
Short	5	5	-	3	3	3
Medium	-	-	-	2	2	2
Long	2	2	-	2	2	1
Same length	-	-	7	-	-	-

Table 1: Characterization of six genera by the size of testicular follicles.

References

- Lent H, Wygodzinsky P (1979) Revision of the Triatominae (Hemiptera:Reduviidae) and their significance as vector of Chagas's disease. Bull Am Mus Nat Hist 163: 123-520.
- Alevi KCC, Rosa JA, Azeredo-Oliveira MTV (2013) Mini Review: Karyotypic Survey in Triatominae Subfamily (Hemiptera, Heteroptera). Entomol Ornithol Herpetol 2: 106.
- Barth R (1956) Estudos anatômicos e histológicos sobre a subfamília Triatominae (Hemiptera, Reduviidae) V parte: Anatomia do testículo e espermiocitogênese do *Triatoma infestans*. Mem Inst Oswaldo Cruz 54: 135-229.
- Barth R (1958) Estudos anatômicos e histológicos sobre a subfamília Triatominae (Hemiptera, Reduviidae). IX parte: Vaso deferente e mesadênias de *Triatoma infestans*. Mem Inst Oswaldo Cruz 56: 209-238.
- Wheeler DE, Krutzsch PH (1992) Internal reproductive system in adult males of the genus *Camponotus* (Hymenoptera: Formicidae: Formicinae). J Morphol 211: 307-317.
- Schreiber G, Penalva F, Carvalho HC (1968) Morfologia comparada dos folículos testiculares e sistemática dos Triatominae (Hemiptera, Reduviidae). Cien Cult 20: 640-641.
- Silva FP, Schreiber G (1971) Morfologia comparada nos canaliculos testiculares da subfamília Triatominae como caráter taxonômico. Arq Museu Nac 58: 275-276.
- Gonçalves TCM, Lent H, Almeida JR (1987) Estudo anatômico e morfométrico dos folículos testiculares de algumas espécies de Triatominae (Hemiptera, Reduviidae). Mem Inst Oswaldo Cruz 82: 543-550.
- Lent H, Jurberg J, Galvão C (1994) Revalidação do gênero *Mepraia* Mazza, Gajardo & Jorg, 1940 (Hemiptera, Reduviidae, Triatominae). Mem Inst Oswaldo Cruz 89: 347-352.
- Tartarotti E, Azeredo-Oliveira MT, Ceron CR (2006) Phylogenetic approach to the study of Triatomines (Triatominae, Heteroptera). Braz J Biol 66: 703-708.
- Freitas SPC, Santos-Mallet JE, Serrão JE, Lorosa ES, Gonçalves TCM (2007) Morphometry of the testis follicles in *Triatoma rubrofasciata* (De Geer, 1773) (Hemiptera, Triatominae). An Biol 57: 393-400.

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