Scientific Note

Spermatogenesis in *Triatoma melanica* Neiva and Lent, 1941 (Hemiptera, Triatominae)

Kaio Cesar Chaboli Alevi¹, João Aristeu da Rosa², and Maria Tercília Vilela de Azeredo-Oliveira¹

¹Laboratory of Cell Biology, Department of Biology, Institute of Biosciences, Humanities and the Exact Sciences, Sao Paulo State University – Júlio de Mesquita Filho (UNESP/IBILCE), Sao Jose do Rio Preto, Sao Paulo, Brazil, kaiochaboli@hotmail.com

²Laboratory of Parasitology, Department of Biological Sciences, College of Pharmaceutical Sciences, Sao Paulo State University – Júlio de Mesquita Filho, (UNESP/FCFAR), Araraquara, Sao Paulo, Brazil

Received 23 January 2014; Accepted 11 March 2014

Costa and collaborators proposed the *Triatoma brasiliensis* complex using many approaches, including egg morphology (Costa et al. 1997a), morphometry of the testis (Freitas et al. 2008), hybrid cross (Costa et al. 2003), isoenzymes (Costa et al. 1997b), molecular data (Monteiro et al. 2004), morphological data (Costa et al. 1997a), biological data, and ecological data (Costa et al. 1998). This complex is comprised of the subspecies *T. b. brasiliensis* and *T. b. macromelanosoma*, and also the species *T. juazeirensis* and *T. melanica*. By means of phylogenetic reconstruction, Mendonça et al. (2009) proposed the inclusion of *T. sherlocki* to this complex. This inclusion was recently confirmed through the use of both cytogenetic analysis (Alevi et al. 2013a) and cross-mating experiments (Correia et al. 2013).

Although the *T. brasiliensis* complex is a monophyletic group, *T. melanica* is considered an independent evolutionary unit and is thought to be the most differentiated form of the complex, with a genetic composition that is incompatible and hybrids that are inviable with other members of the *T. brasiliensis* complex (Costa et al. 2003). In 1941, this species was described by Neiva and Lent as a subspecies of *T. brasiliensis* (*T. b. melanica*). Using different studies such as morphology, biology, ecology, crossing experiments, allozymes, and mtDNA sequences, Costa et al. (2006) increased the specific status of *T. b. melanica* to *T. melanica* (Costa et al. 2006).

Because *T. melanica* has only been collected in natural ecotopes and was considered to be important in the maintenance of the wild cycle of *Trypanosoma cruzi* (an etiologic agent of Chagas disease) (Costa, 1999), all approaches used to study biology and reproduction of this vector are important. Thus, the present study aims to describe the spermatogenesis of *T. melanica*.

Seminiferous tubules of two adult males of *T. melanica* from the Triatominae Insectarium within the Department of Biological Sciences, in the College of Pharmaceutical Sciences, at Sao Paulo State University’s Araraquara campus, Brazil (FCFAR/UNESP) were first shredded, smashed, and set on a slide in liquid nitrogen.

Figure 1. Mitotic metaphase of *Triatoma melanica*. (A) Note 20 autosomes and the two sex chromosomes (arrows). Bar: 10 μm.

Figure 2. Stages of meiosis of *Triatoma melanica*. (A) Diffuse stage (prophase). Note the large heterochromatic chromocenter (arrow) and many heterochromatic blocks dispersed within the nucleus. (B, C) Metaphase I. Note the karyotype 2n = 20A + XY. (D) Anaphase I. Note the separation of homologous chromosomes in autosomes and the sister chromatids in sexual chromosomes (arrow). (E) Anaphase II. (F) Telophase. Bar: 10 μm.