



Triatoma mexicana Herrich-Schaeffer (Hemiptera: Reduviidae: Triatominae): Description of the external male genitalia and external morphology of the female

Salazar-Schettino PM , Rojas-Wastavino G, Vences-Blanco MO, Cabrera-Bravo M
Laboratorio de Biología de Parásitos, Departamento de Microbiología y Parasitología. Facultad de Medicina. Universidad Nacional Autónoma de México.

Introduction

In Mexico, 32 vectors of *Trypanosoma cruzi* have been reported, 19 species belong to the *Triatoma* genus an six to the *Meccus* genus, two species to the genus *Panstrongylus*, and one species to each of the following genera: *Belminus*, *Dipetalogaster*, *Eratyrus*, *Paratriatoma* and *Rhodnius*. Two genera and fifteen species are exclusive of Mexico, one is *Dipetalogaster* and the other is the *Meccus* genus with six species. The *Triatoma* genus has eight species that are only found in Mexico (Galvão et al. 2003)

This vector has been reported in a area circumscribed to the center and east of the country, currently *T. mexicana* is distributed in four states: Guanajuato, Hidalgo, Queretaro and San Luis Potosi (Map). It has been found at an altitude from 1200 to 1880 masl. (Salazar Schettino et al. 2007)

With respect to the biology of this vector it has an incubation period between 16 and 28 days, development from egg to adult is 255 days at 30 ° C and 75% RH, feeding time is about 14 minutes and the defecation time is 18 minutes on average, making it a poor vector of *Trypanosoma cruzi* (Martínez-Ibarra et al. 2008) it is important to mention that its biological cycle occurs underneath the stonewalls, so it is an peridomiciliated specie. In order to provide new information on this species we conducted a study of the external male genitalia and their structures, which are useful to characterize and separate species, genera, tribes and populations. Also we studied some morphological measurements of female

Material and Methods

We used adults of *T. mexicana* (male and female), identified by the keys of Lent & Wygodzinsky (1979). Measurements and a description of the female were performed in a Carl Zeiss stereomicroscope S20193. To describe the external genitalia of male, seven males were used. The capsule in the ninth segment genital was softened with 10% KOH at room temperature for one hour, it extracted the phallus. The structures were placed again in the 10% KOH solution for 4 hours at room temperature, later were neutralized with 10% acetic acid, were labeled and stored in tubes with glycerin. Process of pygophore was removed from the capsule genital, phallus was dissected, were extracted the vesica, the process of the endosome, the bracket of phallosome and phallosome.

Resultados y Discusión

The external genitalia is located in the 8th and 9th abdominal segments, the last is also called Pygophore (Fig. 1), lies yet another structure called median process of the pygophore which is so triangular thin and short, measuring 416 μ, with the presence of long hairs (Fig. 2). It has bodies copula accessories called parameres (Fig. 3), they are cylindrical in shape arched, covered with hairs and with a projection in the apical region.

Within the pygophore is located the phallus which are composed of two different parts, the aedeago and articular apparatus. The phallus is fixed to pygophore through three capitae processes located at the apex of the articular apparatus where protractors and retractors muscles are inserted that allow phallus comes out of pygophore, making a 180° rotation, during the mate.

The articular apparatus is a plate with three branches with an aspect of Y inverted, consists of the median extension of basal plate, process of the gonopore, capitae process, the basal bridge and basal plate (Fig. 4).

The aedeagus is a globe-shaped structure, formed on the outside by the phallosome and conjunctiva and in the internal part by the endosome, the process of endosome, the vesica and phallosome support. The phallosome is constituted by a laminar plate that supports the endosome, in its basal part is wider, toward its apical part gradually decreases and comes to a point, with a small opening.

In the inner face of phallosome is adhered the phallosome support, it is a structure, fork-shaped hollow whose tubular arms are attached at its basal portion and separated in its apex, 468μ measured (Figure 5).

The endosome is formed by an elastic membrane with a structures located laterally and covered with spines in the apex region (Figure 6). On the eversible part there is one structure called vesica, the vesica has a high top and the side is membranous, the lateral view presents an ovoid shape, measuring 335 μ (Figure 7)

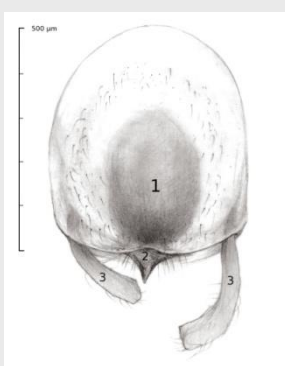


FIG. 1. Phygophore, ventral view. 1. Phallosome; 2. Median process of pygophore; 3. Parameres.

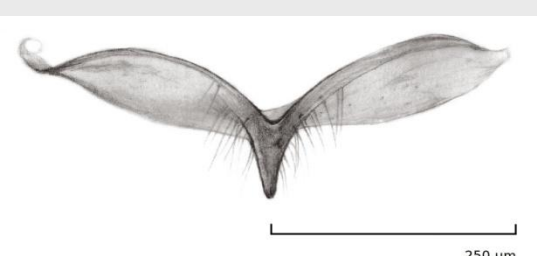


FIG. 2. Median process of pygophore



FIG: 3. Paramere

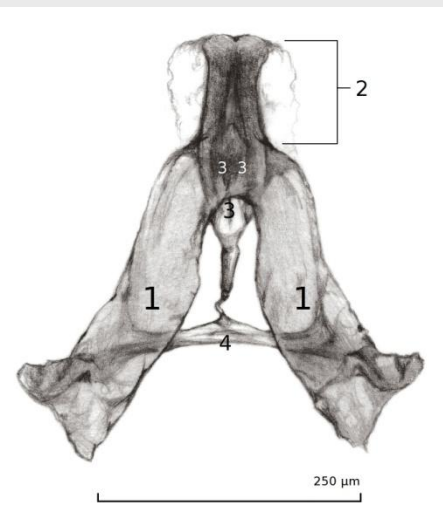


FIG. 4. Articular apparatus, dorsal view. 1. Basal plate 2. Median extension of basal plate; 3. Gonopore process; 4.Basal bridge.



FIG: 5. Phallosome and support of the phallosome.



FIG. 6. Endosome process.

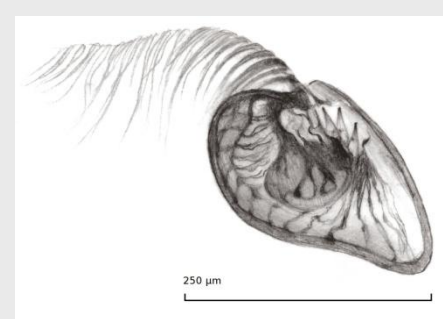


FIG. 7. Vesica.

Table 1. Measurements of morphological structures of female of *Triatoma mexicana*

Measurements	mm
Total length	25.438
Width of abdomen	10.427
Head length	4.328
Antecocular region	2.498
Postocular region	0.79
Scutellum	0.845
Length of the Pronotum	3.928
Phallus	5.97
Basium 1	1.751
2	2.14
3	0.844
Antennal 1	0.962
2	3.447
3	2.352
4	1.473
Femora	8.351
Eyes length	1.46
Width of scutellum	0.388
Width of neck	1.175
Width of scutellum	2.868

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Objective

The aim of this study is to describe the external male genitalia of *T. mexicana* and introduce external measures of females caught in three municipalities in the state of Guanajuato.

