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ON ANOPHELES MATTOGROSSENSIS FROM
VENEZUELA WITH DESCRIPTION
OF THE MALE

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According to Dyar (1928) *Anopheles mattogrossensis* Lutz and Neiva, 1911, is found in Venezuela in the Catatumbo River, State of Zulia. This river belongs to the Lake Maracaibo basin. At La Ceiba, State of Trujillo, a port on this lake, surrounded by forested and swampy country in a flat land, *A. mattogrossensis* has been infrequently found since 1937. Conditions here are very similar to those at Iquitos, Peru, and in some parts of the Amazon Valley in Brazil, where Shannon (1933) found *A. mattogrossensis*, also very rarely, in open and forested country with field and forest streams, pools, marsh and swamp waters.

In 1937 only eight larvae of *A. mattogrossensis* were found among 1123 that were identified from La Ceiba. In the first six months of 1938, six out of 618 classified larvae were *A. mattogrossensis*, and 31 females of *A. mattogrossensis* were caught in houses among 675 adults identified most of which were *A. darlingi* and *A. punctimacula*; of this number, 25 were found at night and six during the day-time. Due to its scarcity this species probably plays no rôle in the epidemiology of malaria in the region.

The larvae of *A. mattogrossensis* have not been found in the large swamps around La Ceiba, but only in a drainage ditch at the side of the rail-road track and another small rain-water pool in open country, both with vertical vegetation, mostly grass. In these breeding places were found with the larvae of *A. mattogrossensis*, larvae of *A. bachmanni*, *A. darlingi*, *A. punctimacula* and *A. tarsimaculatus*.

A. mattogrossensis is a tenacious biter. It was practically impossible to dislodge the female while biting a horse in spite of the strong suction of the rubber bulb of the funnel-like capture tube used. *A. darlingi*, *A. neomaculipalpus* and *A. punctimacula* were easily sucked into the catcher when biting the horse while *A. mattogrossensis* did not fall inside the tube until filled with blood. Of the 59 adults caught with this horse an evening in June 1938, 31 were *A. mattogrossensis*. Two *A. mattogrossensis* were captured biting on the neck and arm of the person who was catching the anophelines on the horse, showing that this species attacks man even when near animals. It was noted that *A. mattogrossensis* was only found on the neck, back and croup of the horse, on the other hand *A. punctimacula* preferred the lower part of the neck and front legs, and *A. darlingi* the abdomen. Also no crepuscular succession was observed with these species, with the exception of *A. darlingi* which was caught when it was already dark.

The morphology of the females caught, corresponded in all details with that given by former students of the species. The larvae were identical with those described by Shannon (1933) having the innermost hairs of the anterior submedian thoracic group palmate-like, which is an unusual feature for the tropical American species of the subgenus *Anopheles*. Of the larvae collected only one male was obtained. As this is as yet undescribed the following description is given:

The male has the same coloration as the female. The palpi have the two last segments enlarged. Hypopygia (fig. 1): Ninth tergite well sclerotized with a pair of conical lobe-like processes. Side piece thick, slightly narrower at apex, its length is a little less than twice its width, covered with hairs and scales, the hairs stouter and longer, and the scales longer and narrower near the apex. Claspers longer than the side-piece, slightly narrower in the middle, with an inner row of about fifteen hairs and two outer hairs near the terminal spine which is small and stout. Basal spines emerging very close together from a lobe-like structure near the base of the side-piece, have sharp curved points, and are of about the same thickness but the outer one is longer. A very distinct internal spine emerging near the middle of the

side-piece, but slightly apically, is much longer than the basal spines. Mesosome with only a pair of apical leaflets that have a smooth surface and are broader basally and longer than the width of the mesosome. Claspette with two conical ventral lobes covered with rather long hairs; each lobe has apically three slender

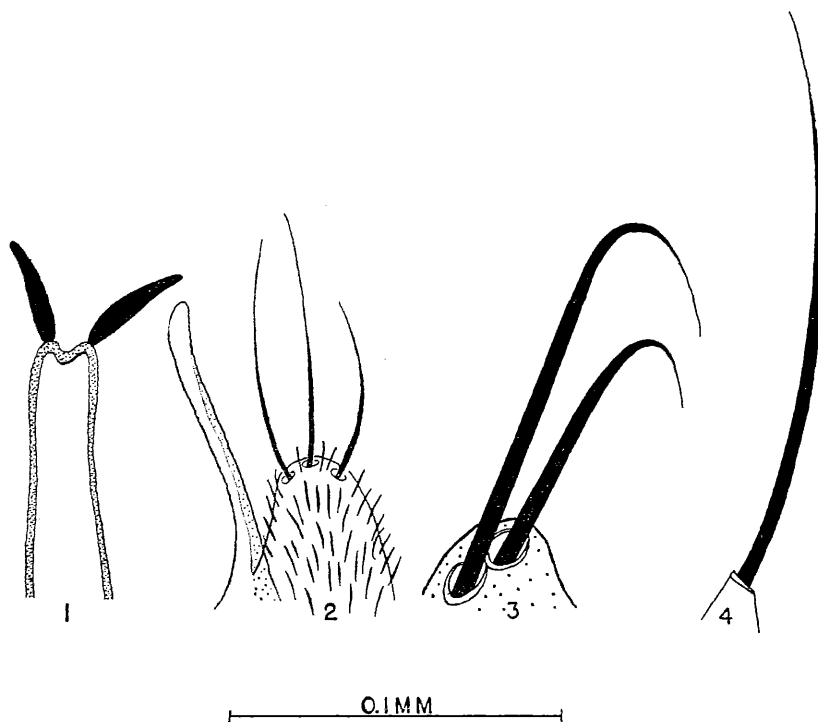


FIG. 1. PARTS OF THE MALE HYPOPYGIUM OF *A. MATTOGROSSENSIS*
1, Mesosome; 2, claspette; 3, basal spines; 4, internal spine

spines, the middle of which is longest; apparently, two stout spines on a partly formed lateral lobe are fused forming a club-like structure. Anal lobe is membranous and hairy.

These characteristics of the male terminalia of *A. mattogrossensis* differentiate this species from the others belonging to the *Cyclolepteron* series of the *Anopheles* group of which all the males are known with the exception of those of *A. annulipalpis*

Arribalzaga. The presence of only one pair of leaflets in the mesosome separates this species from *A. grabhami* Theobald and *A. peryassui* Dyar and Knab, which have two and four or five respectively. *A. mattogrossensis* is differentiated from *A. vestitipennis* Dyar and Knab, the other species with only one pair of leaflets in the mesosome, by possessing the long internal spine in the middle of the side-piece, which is shorter and in the apical fourth in *A. vestitipennis*, and by the spines of the lateral lobe of the claspette, which are fused in *A. mattogrossensis* and separated in *A. vestitipennis* according to the figure given by Dyar (1928).

This author suggested that *A. mattogrossensis* may be a form of *A. vestitipennis* differing in color markings such as a general darkening, the loss of white specks in the legs, and a smoky dullness of the wing spots. That a relationship exists between these species is shown not only by the similarity of adult characters but also by the fact that the larval stages of both possess, as noted by Shannon (1933), double long lateral hairs on segments four and five. Definite separation of the two species is established, however, by the above described characteristics of the male terminalia and the presence as shown by Stone (in Shannon, 1933) in *A. mattogrossensis* of mid-mesepimeral setae which are absent in *A. vestitipennis*.

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