MORPHOLOGICAL NOTES ON *ANOPHELES AQUASALIS* CURRY AND *ANOPHELES OSWALDOI* PERYASSÚ [1]

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In 1941–1942, during malaria studies in Trinidad, British West Indies, detailed observations were made of male terminalia of *Anopheles (Nyssorhynchus) oswaldoi* Peryassú 1922 and *Anopheles (Nyssorhynchus) aquasalis* Curry 1932.

Methods

Adult males of the oswaldoi species were easily and rapidly separated from those of the aquasalis species on the basis of the amount of black on the second hind tarsal segment: In the former species this segment is about one-sixth black; in the latter it is about one-half black. There were no other members of the "Tarsimaculatus complex" present. Routine dissections of the male terminalia were carried out; the mesosome, fused ventral lobes and ninth tergite were separated in each case for more detailed study. The specific morphological details considered included:

Mesosome: the length and width of the membranous portion of the tip, and the presence or absence of spines.

Fused ventral lobes: the length of hairs at the distal free margins of the basal lobules, the appearance of the "preapical plate," and the shape of the apex of the outer lobes.

Ninth tergite, small median bilobed process: this is constant in *oswaldoi* and absent or very small in *aquasalis*.

Specimens were examined while fresh, and notes and sketches were made. Specimens were then mounted in polyvinyl-lacto-phenol (1). It is worthy of note that many of the preparations so mounted in 1941 were still in excellent condition in 1948.

The aid and advice of the late Mr. R. C. Shannon were of great value in the execution of the work.

Observations

The *oswaldoi* and *aquasalis* of Trinidad correspond closely with published descriptions of these species (2,3); only minor inconstant variations were encountered. It was observed that a considerable number of the *oswaldoi* had short, sharp spines on the mesosome; and this point was investigated in detail, as it was at first thought that the varient might be a distinct species. Careful search was made for spines on the mesosomes of *aquasalis*, but none were ever encountered.

The tabulation below summarizes the results of observations on collections of *oswaldoi* and *aquasalis* with regard to the presence or absence of spines on the mesosome.

Species	No. of Collections	No. of Specimens without Spines	No. of Specimens with Spines
A. aquasalis	35	61	0
A. oswaldoi	21	33	0
A. oswaldoi	7	0	7
A. oswaldoi	8	14	10

It is seen that in some collections of *oswaldoi*, only specimens without spines were encountered in others, only specimens with spines; while in eight collections specimens with and specimens without spines were present (see figs. 1–6).

In order to study this point further, female *oswaldoi* that had taken blood meals were caged. Their eggs were collected, and the progeny were reared. From the eggs of one *oswaldoi* from Sangre

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FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

FIG. 6

FIG. 1. Mesosome of *Anopheles aquasalis*: FIG. 2. Mesosome of *Anopheles oswaldoi*: FIG. 3, Mesosome of *Anopheles oswaldoi* with spines (Coll. 414, No. 2); FIG. 4, Mesosome of *Anopheles oswaldoi* with spine (Coll. 539, No. 3); FIG. 5, Mesosome of *Anopheles oswaldoi* with one spine on one side and two spines on the other side (Oviposition 43–44, No. 3); FIG. 6, Same as Fig. 5. Freehand drawing made before preparation of permanent mount.

All sketches except Fig. 6 were made with camera lucida, magnification 1800x.

Specimens have been deposited with Dr. Lloyd E. Rozeboom, the Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland.

Grande (E-34) 10 males were obtained, eight without spines on the mesosome and two with spines. From the mixed oviposition of two *oswaldoi* from Sangre Grande (E-43 and E-44) three males were obtained, all with spines. From eggs of another *oswaldoi* from the same place (E-54) nine males were obtained, eight without spines and one with a spine on one side of the mesosome.

The spines are short and sharply pointed, no more than 8 to 10 microns in length. They were usually found to be bilateral, but occasionally they were unilateral. In one instance a double spine was present on one side of the mesosome and a single spine on the other side. The spines are shown in figs. 3–6.

Summary

The occurrence of small spines on the terminal portion of the mesosome of some specimens of *Anopheles oswaldoi* from Trinidad, B.W.I., is described and illustrated.

Bibliography

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