

## Description of *Anopheles (Nyssorhynchus) dunhami*, a new species from the upper Amazon basin\*

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A new species of *Anopheles* belonging to the so-called *tarsimaculatus complex* of the *Nyssorhynchus* group of mosquitoes has been captured in large numbers on animal bait in Tefé, Amazonas, Brazil. In egg, larval and adult characteristics this mosquito closely resembles *Anopheles goeldii* Rozeboom and Gabaldon, 1941. The genitalic characteristics distinguish it from both *Anopheles goeldii* and *Anopheles nunez-tovari*, Gabaldon, 1940. Specimens were sent to dr. Gabaldon, author of *nunez-tovari*, and co-author of *goeldii*, for comparison with his species. In a personal communication he concurs in the opinion that the mosquitoes from Tefé differ from both of these and constitute a new species. Its relation to malaria is not known, although it is not suspected of being a vector as the region from which it was collected shows one of the lowest malaria rates of any area studied in the Amazon Valley. For this mosquito the name *Anopheles (Nyssorhynchus) dunhami* is proposed in honor of General George Dunham, U. S. A., Assistant Coordinator of Inter-American Affairs.

The type specimens have been forwarded to the National Museum in Washington, D. C.

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## ADULT FEMALE

Head: vertex with about twelve long white hair-like setae directed forward, interspersed with short recumbent white scales, remaining dorsal portion covered with erect white spatulate scales except for short black scales on posterior margin. Antennae with scattered white scales on torus and first flagellar segment; all segments sparsely clothed with few long and numerous short white hairs. Palpi: first segment all dark; second and third segments mainly dark, with few light scales apically on second and scattered white scales centrally with narrow white apical ring on third; fourth segment mainly white with basal black ring and ventral line of dark scales; fifth segment white with basal black ring. Proboscis all dark.

### Thorax

Integument of mesonotum grayish brown with dark bare spot on pre-scutellar space, and small dark bare spot at each side of middle portion. Vestiture of scattered long dark hairs and whitish scales, small recumbent except at margins and wing base where scales are larger, narrow and semi-erect; scutellum covered with whitish scales and long dark hairs; sternopleura with patch of white scales on upper portion. Knobs of halteres with small pale scales.

### Legs

Coxae and trochanters with patches of white scales, femora and tibia dark with scattered white scales on outer portion, mainly pale on inner portion. Front tarsi: segments one and two mainly dark with apical white ring; segment three basal half black, apical half white; segment four all dark; segment five basal half black, apical half white. Mid tarsi: segment one dark on outer portion, light on inner with apical white ring; segment two dark with apical white ring; segments three and four mainly dark with few light scales apically; segment five dark basally, light apically. Hind tarsi: segment one mainly dark with line of light scales and few white scales apically; segment two with basal 22 to 40 percent black, remainder white; segments three and four all white; segment five black on basal half, light an apical half.

## Wing

Costa: B1 broad; B2 either subequal to or much broader than preceding black spot; B3 smaller than B2; M1 and M2 moderate; Sc and Ap moderate. Subcosta: M1 and M2 large, extreme tip with few white scales. First vein: base of stem pale, M1 and M2 larger than on costa, Sc and Ap larger than on costa. Second vein: apical half of stem mainly pale with two small black spots, upper branch with small pale spot at base and tip, pale large spot corresponding to Ap, lower branch with three pale and two black spots. Third vein: predominantly pale with black spot near each extremity. Fourth vein: stem mainly dark with preapical pale spot; upper branch with small pale spot at each extremity and another at middle; lower branch dark with narrow apical spots. Fifth vein: stem pale with subapical dark spot; upper branch predominantly pale with two black spots on basal half and one subapical black spot, lower branch pale with subapical black spot. Sixth vein: predominantly pale with black spot near each extremity.

## Abdomen

Integument dark brown. Tergite one without scales, succeeding tergites with progressively more yellowish scales. All segments except first with lateral tufts of dark outstanding scales. Cerci densely covered with yellowish scales. Sternite one without scales, succeeding six sternites with preapical pale, and apical black scales.

## MALE

### Terminalia

Fused dorsal lobe of claspette similar to *Anopheles goeldii* (Plate 1, Figs. 1, 3); apex wide with shallow, broad excavation. Preapical plate small and lightly chitinized. Hairs on basal lobule short. Mesosome short, wide and without leaflets; membraneous tip wider than long (Plate 1, Fig. 2). Easily differentiated from *Anopheles goeldii*, mesosome of which is long, narrow usually with leaflets, and with membraneous tip longer than wide (Plate 1, Fig. 4).

## Plate 1

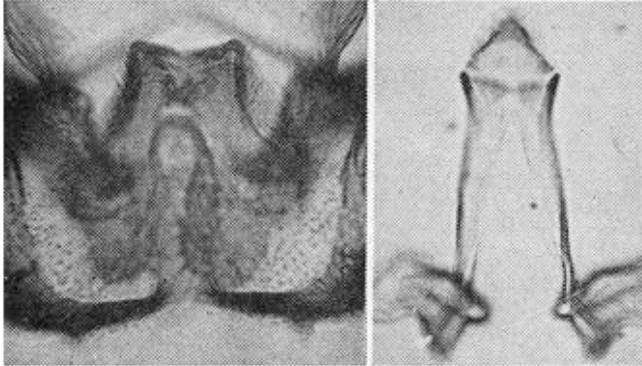


Fig. 1 – Fused dorsal lobes of claspette of *A. dunhami*.  
Fig. 2 – Mesosome of *A. dunhami*.

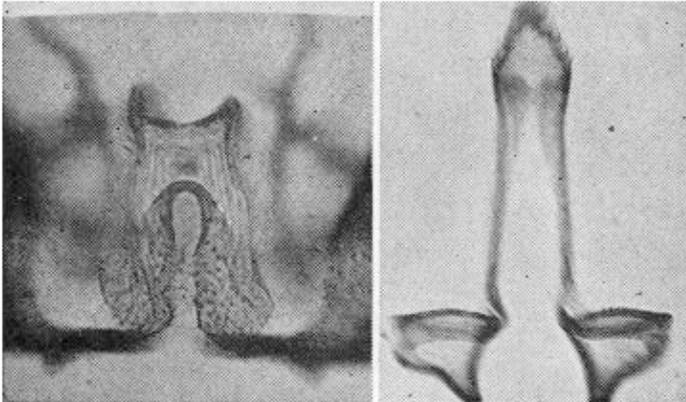


Fig. 3 – Fused dorsal lobes of claspette of *A. goeldii*.  
Fig. 4 – Mesosome of *A. goeldii*.

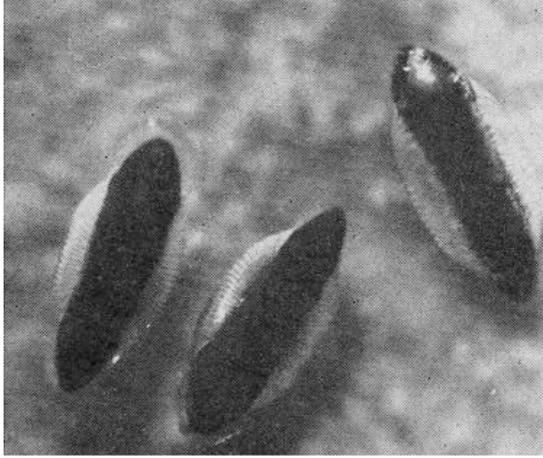


Fig. 5 – Eggs of *A. dunhami*.

#### EGG

Egg similar to that of *Anopheles goeldii*. Floats widely separated with about 25 ridges. Frill wide at both ends extending from floats around each end of egg. (Plate 1, Fig. 5).

#### LARVA

Anterior clypeal hairs single with few delicate branchlets visible only under high magnification. Inner clypeal space slightly smaller than outer space. Posterior clypeal hairs, long, unbranched. Antennal hairs inserted on basal fourth of antennal shaft, short, with four to six branches.

Submedian prothoracic group of hairs widely separated. Inner hairs palmate with 9-10 leaflets on small lightly chitinized base; median hair large inserted on well chitinized base; outer hair small. Palmate hairs on metathorax and on first abdominal segment poorly developed; palmate hairs on other abdominal segments large with numerous pointed leaflets.

## SUMMARY

A new species, *Anopheles (Nyssorhynchus) dunhami*, is described from Tefé, Amazonas, Brazil, in a region where malaria is not prevalent. By egg, larva and adult color pattern it is similar to *Anopheles goeldii*. The male terminalia distinguish it from both *Anopheles goeldii* and *Anophele nunez-tovari*.