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AÈDES (STEGOMYIA) MASCARENSIS, MACGREGOR: A NEW  
MOSQUITO FROM MAURITIUS.

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This new species of *Aedes* (*Stegomyia*) was discovered while I was conducting a malaria and anti-Anopheline survey in Mauritius for the Colonial Office during 1922-1923.

Two species of *Aedes* (*Stegomyia*) have been previously known to exist in Mauritius, namely, *A. (S.) argenteus*, Poiret (*Stegomyia fasciata*, F.), and *A. (S) albopictus*, Meuse.

The latter species is to be found in large numbers everywhere in the island. It breeds mainly in tree-holes; like other *Stegomyia*, it bites normally only during the daytime, and it may be readily recognised by its jet black and silvery white coloration in conjunction with the conspicuous white line which runs longitudinally along the middle of the thorax.

*Aedes argenteus* in Mauritius is only to be found in restricted localities at the coast, the reason for this being so far unexplained. It is common at Port Louis, and at some other coastal centres of population, but it is not generally common even in the coastal belt of the island. The species has not been found in Mauritius to occur above an altitude of 500 feet. *Aedes argenteus* may be recognised by its black and white coloration, in conjunction with the well-known lyre-shaped white lines on its thorax. It breeds in tree-holes, and in many collections of water around human dwellings, such as water-butts, flower-pots, drains, gutters, etc.

Soon after my arrival in Mauritius, while I was in the Botanical Gardens at Pamplemousses one morning, I noticed a small black and white mosquito buzzing around my legs. Its flight was rapid, and it seemed easily frightened; consequently it disappeared as soon as I attempted to capture it. I noticed, however, that the insect seemed to have a conspicuously white thorax.

Shortly afterwards, when my laboratory at Reduit had been opened, larvae (assumed to be all *Aedes albopictus* larvae) were collected from a tree-hole and were set aside to develop. On the emergence of the adults, among the numerous *Aedes albopictus* several mosquitos of a new species were observed to be present, and were recognised to be the same as the one I had seen in Pamplemousses. On examination it prove to be a strikingly ornamented insect, and one easily distinguished from the other two Mauritian *Stegomyia* in the adult stage.

The following is a description of the male and female of this species. I have called it *mascarensis*, for although it has not been found to occur on Rodrigues, there can be little doubt that the species must exist on Reunion (Bourbon), which is only 80 miles west of Mauritius, and which, unlike Rodrigues, is constantly visited by vessels of all kinds from Mauritius and Madagascar. Search for it has not yet been made on Reunion, but it has been proved not to occur on Rodrigues at present.

***Aedes mascarensis*, sp. n.**

♀. *Proboscis* black and shiny while the insect is alive; black and dull after death. *Palpi*: first two joints black, third joint clothed with silvery-white scales, dorsally. *Antennae* black, but with first joint (basal joint) encircled on the upper peripheral margin with silvery-white scales. *Head*: eyes black, with a small patch of silvery-white scales extending forwards from the occipital region in the line separating the eyes. Occiput ornamented with flat silvery-white scales and long black hairs bordering

the median orbito-occipital margin; the silvery-white scales arranged as a patch covering the median dorsal aspect of the occiput, and as two separate longitudinal bands on the lateral aspects. *Thorax*: the whole of the dorsal surface of the mesothorax clothed with flat spindle-shaped and sickle-shaped scales and long black hairs. The flat spindle-shaped scales are conspicuously concentrated on the anterior lateral section of the mesothorax in the form of two large roughly triangular patches on each side of the thorax. By the higher reflective power of these flat scales the patches are clearly visible under the microscope when the insect is slightly turned on one side. A line of the long black hairs extends longitudinally on each side of the middle line as far as the scutellum. *Scutellum* decorated, and completely covered with flat silvery-white scales, and long black hairs which fringe the free margin. *Pleurae* decorated with numerous patches of flat silvery-white scales. *Abdomen* black, with basal bands of yellowish-white scales on segments 1-6. Segment 7 unbanded. A fan-shaped patch of flat silvery-white scales on the ventral aspects of all the visible segments. Venter with broad bands of yellowish-white and silvery-white scales intermixed. *Legs*: coxae and femora yellowish on the ventral aspects; tibiae black; tarsi black, some carrying white bands. Fore legs: 1st and 2nd tarsal joints with a patch of silvery-white scales at their bases; 3rd tarsal joint all black; 4th and 5th tarsal joints brownish-black. Middle legs: 1st and 2nd tarsal joints with a patch of silvery-white scales at their bases; remaining joints all black. Hind legs: 1st, 2nd and 3rd joints with narrow basal bands of silvery-white scales; 4th tarsal joint with a broad band of similar scales; 5th tarsal joint all white. *Wings* uniformly black-scaled.

♂ *Proboscis* black, long and slender. *Palpi* about as long as the proboscis. Apical portion of the 1st joint with a dorsal patch of silvery-white scales; 2nd joint with a broad band of similar scales at its middle; 3rd and 4th (terminal) joints with a basal patch of white scales on the ventral sides. *Abdomen*: segments 6 and 7 without the basal bands of yellowish-white scales. Otherwise the male is similar to the female.

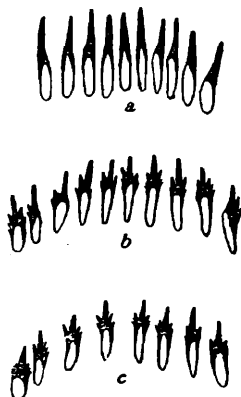


Fig. 1. Abdominal combs of Mauritian species of *Stegomyia*: (a) *Aedes (Stegomyia) albopictus*; (b) *A. (S.) mascarensis*; (c) *A. (S.) argenteus*.

*Aedes mascarensis* is to be found breeding in tree-holes all over Mauritius, but it is not as common a species as *Aedes albopictus*, with whose larvae the larvae of *A. mascarensis* are often found associated. With the unaided eye it is almost

impossible to distinguish the larvae of the two species, although the larvae of *A. mascarensis* have often not quite so many stellate spine hairs on the thorax and abdomen. Under the microscope, however, the two species may be instantly distinguished from each other by the morphology of the comb, which occurs on the lateral aspects of the 8th abdominal segment (fig. 1, a, b).

It will be noticed, under the low powers of the microscope, that the comb-teeth of *A. albopictus* are simple, whereas the comb-teeth of *A. mascarensis* are denticulated.

In this respect they are very much like the larvae of *A. argenteus*, but during my investigations in Mauritius *A. mascarensis* and *A. argenteus* were never found breeding in association. It is conceivable, nevertheless, that, since both these species may breed in tree-holes, they may at times occur in the same tree-hole, and it is therefore necessary to point out the most conspicuous specific larval difference between them.

Unfortunately the larvae of *A. mascarensis* and *A. argenteus* are so much alike that it is a matter of difficulty to find any character which will make the identification easy, and the only fairly reliable differences which I have been able to observe are slight differences in the structure of the comb, the average number of teeth in the comb, and the average number of teeth in the pecten of each species. These characters are given in the following dichotomous tables.

#### Genus *Aedes*, Mg. (Edwards).

"This genus, as a whole, is characterised as follows:—Proboscis of uniform thickness throughout. Palpi of the female less than one-quarter as long as the proboscis. Antennae distinctly plumose in the male, with the last two joints elongate; with moderately long verticils in the female, all the flagellar joints being about equal in length. Eyes distinctly separated. A continuous row of orbital bristles. Pronotal lobes widely separated. Pro-epimeral bristles about 4-6, in a posterior row overlapping the spiracle. Spiracular bristles absent. Post-spiracular, pre-alar, sternopleural and upper mesepimeral bristles all present and generally numerous. Postnotum without setae. Eighth segment of the female abdomen retractile, a wide membrane between it and the seventh. Side-pieces of the male hypopygium with a lacuna of chitinisation extending the whole length of the inner side; claspers articulating in a horizontal plane. Tenth segment with tergites feebly developed; sternites simple, without teeth or spines. Hind tibiae with the usual row of fine microscopic hairs just before the tip on the inner side, and also with a row of 7-10 longer hairs parallel with the first row and slightly more distally placed. First hind tarsal joint shorter than the tibia. Pulvilli absent. Front and middle claws of the female nearly always toothed. Cell  $R_2$  (upper forked cell) seldom much longer than its stem. Vein  $A_n$  (sixth longitudinal) terminating distinctly beyond the level of the base of  $R_2$  (second vein). Distinct microtrichia on the wing-membrane."

#### Subgenus *Stegomyia*, Theo.

"Proboscis moderately slender, but stouter than in *Ochlerotatus*, scarcely as long as the rather short front femora. Palpi short in the female, normally longer than the proboscis in the male, the last two joints slender, upturned, with very few hairs. Vertex with broad flat scales, few or no narrow ones on the nape. Thorax usually with conspicuous and well-defined ornamentation. Lower mesepimeral bristles absent. Male hypopygium usually without claspettes, unless these are represented by hairy basal lobes; no apical lobes; clasper with distinct terminal spine. Aedoeagus divided into two more or less brush-like halves. Eighth segment of the female abdomen rather large, but distinctly retractile, the sternite not very prominent in repose; cerci rather short. Front and middle claws of the female either toothed or not."

*Key to Adults of Mauritian Species of Stegomyia.*

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|--|-------------------|
| 1. Dorsal surface of the thorax covered with silvery-white scales ...  | <i>mascare</i>    |
| 2. Dorsal aspect of the thorax ornamented with a silvery-white stripe running longitudinally in the median line ... ..   | <i>albopictus</i> |
| 3. Dorsal aspect of the thorax ornamented with two parallel lines enclosed by two lines bordering the dorso-lateral aspects of the thorax, and forming a lyre-shaped device ... .. | <i>argenteus</i>  |

Larvae of the Genus *Aedes*, Mg. (Edwards).

"Mouth-parts not specially modified for predaceous habits, but the inner hairs of the mouth-brushes are generally more or less serrate. Antennal tuft generally on or before the middle. Abdomen without chitinous plates except for the anal saddle and sometimes small plates at the bases of the thoracic hairs. Eighth segment with a lateral comb or patch of scales. Siphon unmodified, short and stout, at most for times as long as its breadth at the base, provided with a well-developed pecten and a single pair of ventral hair-tufts, situated about or beyond the middle; only very exceptionally with accessory dorsal hairs or hair-tufts."

Larvae of the Subgenus *Stegomyia*, Theo.

"Antennae short, with a single hair and without spicules on the shaft. Frontal hairs single. Abdomen with or without numerous stellate tufts on the dorsal surface the eighth segment with a definite comb of teeth set in a single row. Siphon not much more than twice as long as broad; hair-tuft well developed, and situated about the middle."

*Key to the Larvae of the Mauritian Species of Stegomyia.*

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| 1. Larvae with numerous stellate spine hairs on the abdomen and thorax; teeth of the comb simple, when examined under comparatively low microscopical powers ( $\frac{3}{8}$ in. objective) ...  | <i>albopictus</i> (fig. 1)  |
| 2. Larvae with comparatively few stellate spine hairs on the thorax and abdomen; teeth of the comb denticulated when examined under comparatively low microscopical powers ... ..  | 3                           |
| 3. Average number of comb-teeth 8; average number of pecten teeth 15-20; pecten hair-tuft usually situated slightly beyond the last tooth of the pecten; the last tooth often a little removed distally from the preceding tooth; inferior denticles mainly less than half the length of the superior denticles ... .. | <i>argenteus</i> (fig. 3)   |
| 4. Average number of comb-teeth 10; average number of pecten teeth 8-12; pecten hair-tuft usually situated at about the same level as the last tooth of the pecten; inferior denticles mainly half or more than half the length of the superior denticles ...  | <i>mascarensis</i> (fig. 2) |

It must be confessed that the only differences in the specific characters of the larvae of *Aedes mascarensis* and *A. argenteus* are so slight, and moreover sufficiently variable, as to cause at first some difficulty in distinguishing the species. This is remarkable when the adults are so easily recognised. Prolonged comparison of the larvae has failed to reveal any more conspicuous specific character, but I have found, with experience, that identification by means of the characters of the comb and pecten is fairly certain.